

Land Use Assumptions, Infrastructure Improvements Plan, and Development Fee Report

**Prepared for:
Buckeye, Arizona**

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EXECUTIVE SUMMARY

The City of Buckeye, Arizona, contracted with TischlerBise to document land use assumptions, prepare the Infrastructure Improvements Plan (hereinafter referred to as the “IIP”), and update development fees within the Buckeye Service Area pursuant to Arizona Revised Statutes (“ARS”) § 9-436.05 (hereafter referred to as the “Enabling Legislation”). Municipalities in Arizona may assess development fees to offset infrastructure costs to a municipality for necessary public services. The development fees must be based on an Infrastructure Improvements Plan and Land Use Assumptions. The IIP for each type of infrastructure is in the middle section of this document. The proposed development fees are displayed in the Development Fee Report in the next section.

Development fees are one-time payments used to construct system improvements needed to accommodate new development. The fee represents future development’s proportionate share of infrastructure costs. Development fees may be used for infrastructure improvements or debt service for growth related infrastructure. In contrast to general taxes, development fees may not be used for operations, maintenance, replacement, or correcting existing deficiencies. This update of Buckeye’s Infrastructure Improvements Plan and associated update to its development fees includes the following necessary public services:

1. Fire Facilities
2. Library Facilities
3. Parks and Recreational Facilities
4. Police Facilities
5. Street Facilities
6. Water Facilities
7. Wastewater Facilities

This plan includes all necessary elements required to be in full compliance with SB 1525.

ARIZONA DEVELOPMENT FEE ENABLING LEGISLATION

The Enabling Legislation governs how development fees are calculated for municipalities in Arizona.

Necessary Public Services

Under the requirements of the Enabling Legislation, development fees may only be used for construction, acquisition or expansion of public facilities that are necessary public services. “Necessary public service” means any of the following categories of facilities that have a life expectancy of three or more years and that are owned and operated on behalf of the municipality: water, wastewater, storm water, library, street, fire, police, and parks and recreational. Additionally, a necessary public service includes any facility that was financed before June 1, 2011 and that meets the following requirements:

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 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.

Infrastructure Improvements Plan

Development fees must be calculated pursuant to an IIP. For each necessary public service that is the subject of a development fee, by law, the IIP shall include the following seven elements:

1. A description of the existing necessary public services in the service area and the costs to update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.
2. An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.
3. A description of all or the parts of the necessary public services or facility expansions and their costs necessitated by and attributable to development in the service area based on the approved Land Use Assumptions, including a forecast of the costs of infrastructure, improvements, real property, financing, engineering and architectural services, which shall be prepared by qualified professionals licensed in this state, as applicable.
4. A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial, and industrial.
5. The total number of projected service units necessitated by and attributable to new development in the service area based on the approved Land Use Assumptions and calculated pursuant to generally accepted engineering and planning criteria.
6. The projected demand for necessary public services or facility expansions required by new service units for a period not to exceed ten years.
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.

Qualified Professionals

The IIP must be developed by qualified professionals using generally accepted engineering and planning practices. A qualified professional is defined as “a professional engineer, surveyor, financial analyst or planner providing services within the scope of the person’s license, education, or experience.” TischlerBise is a fiscal, economic, and planning consulting firm specializing in the cost of growth services. Our services include development fees, fiscal impact analysis, infrastructure financing analyses, user fee/cost of service studies, capital improvement plans, and fiscal software. TischlerBise has prepared over 800 development fee studies over the past 30 years for local governments across the United States.

Conceptual Development Fee Calculation

In contrast to project-level improvements, development fees fund growth-related infrastructure that will benefit multiple development projects, or the entire service area (usually referred to as system improvements). The first step is to determine an appropriate demand indicator for the particular type of infrastructure. The demand indicator measures the number of service units for each unit of development. For example, an appropriate indicator of the demand for parks is population growth and the increase in population can be estimated from the average number of persons per housing unit. The second step in the development fee formula is to determine infrastructure improvement units per service unit, typically called level-of-service (LOS) standards. In keeping with the park example, a common LOS standard is improved park acres per thousand people. The third step in the development fee formula is the cost of various infrastructure units. To complete the park example, this part of the formula would establish a cost per acre for land acquisition and/ or park improvements.

Evaluation of Credits/Offsets

Regardless of the methodology, a consideration of credits/offsets is integral to the development of a legally defensible development fee. There are two types of credits/offsets that should be addressed in development fee studies and ordinances. The first is a revenue credit/offset due to possible double payment situations, which could occur when other revenues may contribute to the capital costs of infrastructure covered by the development fee. This type of credit/offset is integrated into the fee calculation, thus reducing the fee amount. The second is a site-specific credit or developer reimbursement for dedication of land or construction of system improvements. This type of credit is addressed in the administration and implementation of the development fee program. For ease of administration, TischlerBise normally recommends developer reimbursements for system improvements.

DEVELOPMENT FEE REPORT

METHODOLOGY

Development fees for the necessary public services made necessary by new development must be based on the same level of service (“LOS”) provided to existing development in the service area. There are three basic methodologies used to calculate development fees. They examine the past, present, and future status of infrastructure. The objective of evaluating these different methodologies is to determine the best measure of the demand created by new development for additional infrastructure capacity. Each method has advantages and disadvantages in a particular situation and can be used simultaneously for different cost components.

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

- **Cost Recovery** (past improvements) - The rationale for recoupment, often called cost recovery, is that new development is paying for its share of the useful life and remaining capacity of facilities already built, or land already purchased, from which new growth will benefit. This methodology is often used for utility systems that must provide adequate capacity before new development can take place.
- **Incremental Expansion** (concurrent improvements) - The incremental expansion method documents current LOS standards for each type of public facility, using both quantitative and qualitative measures. This approach assumes there are no existing infrastructure deficiencies or surplus capacity in infrastructure. New development is only paying its proportionate share for growth-related infrastructure. Revenue will be used to expand or provide additional facilities, as needed, to accommodate new development. An incremental expansion cost method is best suited for public facilities that will be expanded in regular increments to keep pace with development.
- **Plan-Based** (future improvements) - The plan-based method allocates costs for a specified set of improvements to a specified amount of development. Improvements are typically identified in a long-range facility plan and development potential is identified by a land use plan. There are two basic options for determining the cost per demand unit: (1) total cost of a public facility can be divided by total demand units (average cost), or (2) the growth-share of the public facility cost can be divided by the net increase in demand units over the planning timeframe (marginal cost).

DEVELOPMENT FEE COMPONENTS

Figure 1 summarizes service areas, methodology, and infrastructure cost components for each non-utility necessary public service. Maps for each service area are included in Appendix D.

Figure 1: Proposed Non-Utility Development Fee Service Areas, Methods, and Cost Components

Necessary Public Service	Service Area	Cost Recovery	Incremental Expansion	Plan-Based	Cost Allocation
Fire	Main	N/A	Fire Facilities, Fire Apparatus and Equipment	Development Fee Report	Peak Population, Jobs
	Festival Ranch	Fire Facilities	N/A	N/A	Peak Population, Jobs
	Tartesso West	N/A	N/A	Fire Facilities	Peak Population, Jobs
Library	Library	N/A	Library Facilities	Development Fee Report	Peak Population, Jobs
Parks and Recreational	North	N/A	Regional Parks, Regional Trails, Community Centers	Community Park Land, Development Fee Report	Peak Population, Jobs
	South	N/A	Community Park Improvements, Regional Parks, Regional Trails, Community Centers	Pools, Development Fee Report	Peak Population, Jobs
Police	Police	N/A	Police Facilities, Vehicles and Equipment	Development Fee Report	Peak Population, Vehicle Trips
Street	Street	N/A	N/A	I-10 Interchange Improvements, Development Fee Report	Vehicle Miles of Travel

Figure 2 summarizes service areas, methodology, and infrastructure cost components for each utility necessary public service. Maps for each service area are included in Appendix D.

Figure 2: Proposed Utility Development Fee Service Areas, Methods, and Cost Components

Necessary Public Service	Service Area	Cost Recovery	Incremental Expansion	Plan-Based	Cost Allocation
Water	Buckeye North	N/A	N/A	Booster/Treatment, Distribution, Production	Max Day Gallons
	Central Buckeye	N/A	N/A	Booster/Treatment, Distribution, Production	Max Day Gallons
	Sundance	N/A	N/A	Booster/Treatment, Distribution, Production	Max Day Gallons
	Tartesso West	Reimbursement	N/A	N/A	Max Day Gallons
	Westpark	N/A	N/A	Booster/Treatment, Distribution, Production	Max Day Gallons
Wastewater	Central Buckeye	N/A	N/A	Treatment, Collection, Reclaimed Water	Average Day Gallons
	Palo Verde	N/A	N/A	Treatment, Collection, Reclaimed Water	Average Day Gallons
	Sundance	Reimbursement	N/A	Collection, Reclaimed Water	Average Day Gallons
	Tartesso West	Reimbursement	N/A	N/A	Average Day Gallons
	Watson Road CFD	Reimbursement	N/A	N/A	Average Day Gallons

PROPOSED DEVELOPMENT FEES

Development fees for residential development will be assessed per dwelling unit, based on the type of unit, or per meter. Nonresidential development fees will be assessed per 1,000 square feet of floor area, based on the type of development, or per meter. Shown below, Figure 3 includes proposed fees for Festival Ranch, Figure 4 includes proposed fees for Tartesso West, Figure 5 includes proposed fees in the North Service Area, and Figure 6 includes proposed fees in the South Service Area.

Fees shown below represent the maximum allowable fees. Buckeye may adopt fees that are less than the amounts shown; however, a reduction in development fee revenue will necessitate an increase in other revenues, a decrease in planned capital improvements and/or a decrease in Buckeye’s LOS standards. All costs in the Development Fee Report are in current dollars with no assumed inflation rate over time. If cost estimates change significantly over time, development fees should be recalibrated.

Figure 3: Proposed Non-Utility Development Fees (Festival Ranch)

Residential Development		Development Fees per Unit				
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total
Single-Family Unit	\$498	\$289	\$684	\$842	\$0	\$2,313
Multi-Family Unit	\$389	\$225	\$534	\$658	\$0	\$1,806
Age-Restricted Unit	\$311	\$180	\$427	\$526	\$0	\$1,444

Nonresidential Development		Development Fees per 1,000 Square Feet				
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total
Industrial	\$83	\$14	\$37	\$92	\$0	\$226
Commercial	\$568	\$96	\$252	\$1,323	\$0	\$2,239
Institutional	\$226	\$38	\$100	\$684	\$0	\$1,048
Office & Other Services	\$721	\$121	\$320	\$517	\$0	\$1,679

Figure 4: Proposed Non-Utility Development Fees (Tartesso West)

Residential Development		Development Fees per Unit				
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total
Single-Family Unit	\$866	\$289	\$684	\$842	\$300	\$2,981
Multi-Family Unit	\$676	\$225	\$534	\$658	\$173	\$2,266
Age-Restricted Unit	\$541	\$180	\$427	\$526	\$136	\$1,810

Nonresidential Development		Development Fees per 1,000 Square Feet				
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total
Industrial	\$135	\$14	\$37	\$92	\$26	\$304
Commercial	\$927	\$96	\$252	\$1,323	\$337	\$2,935
Institutional	\$368	\$38	\$100	\$684	\$193	\$1,383
Office & Other Services	\$1,176	\$121	\$320	\$517	\$146	\$2,280

Figure 5: Proposed Non-Utility Development Fees (Parks and Recreational North Service Area)

Residential Development	Development Fees per Unit					
Development Type	Fire ¹	Library	Parks and Recreational	Police	Street	Total
Single-Family Unit	\$1,060	\$289	\$684	\$842	\$300	\$3,175
Multi-Family Unit	\$828	\$225	\$534	\$658	\$173	\$2,418
Age-Restricted Unit	\$662	\$180	\$427	\$526	\$136	\$1,931

Nonresidential Development	Development Fees per 1,000 Square Feet					
Development Type	Fire ¹	Library	Parks and Recreational	Police	Street	Total
Industrial	\$170	\$14	\$37	\$92	\$26	\$339
Commercial	\$1,168	\$96	\$252	\$1,323	\$337	\$3,176
Institutional	\$464	\$38	\$100	\$684	\$193	\$1,479
Office & Other Services	\$1,483	\$121	\$320	\$517	\$146	\$2,587

1. Not applicable to Festival Ranch or Tartesso West

Figure 6: Proposed Non-Utility Development Fees (Parks and Recreational South Service Area)

Residential Development	Development Fees per Unit					
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total
Single-Family Unit	\$1,060	\$289	\$1,915	\$842	\$300	\$4,406
Multi-Family Unit	\$828	\$225	\$1,496	\$658	\$173	\$3,380
Age-Restricted Unit	\$662	\$180	\$1,197	\$526	\$136	\$2,701

Nonresidential Development	Development Fees per 1,000 Square Feet					
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total
Industrial	\$170	\$14	\$83	\$92	\$26	\$385
Commercial	\$1,168	\$96	\$573	\$1,323	\$337	\$3,497
Institutional	\$464	\$38	\$228	\$684	\$193	\$1,607
Office & Other Services	\$1,483	\$121	\$727	\$517	\$146	\$2,994

Shown below, Figure 7 includes proposed water development fees and Figure 8 includes proposed wastewater development fees. Buckeye will assess utility fees based on the type and size of meter.

Figure 7: Proposed Water Development Fees

Development Fees per Meter					
Meter Type and Size (inches)	Buckeye North	Central Buckeye	Sundance	Tartesso West	Westpark
Age-Restricted	\$4,424	\$4,799	\$4,668	\$2,324	\$7,705
Disc Meter 1.0"	\$7,076	\$7,675	\$7,467	\$3,717	\$12,323
Disc Meter 1.5"	\$14,153	\$15,351	\$14,934	\$7,434	\$24,647
Disc Meter 2.0"	\$22,644	\$24,561	\$23,894	\$11,895	\$39,435
Compound 3.0"	\$45,289	\$49,122	\$47,789	\$23,790	\$78,870
Turbine 3.0"	\$50,950	\$55,262	\$53,762	\$26,764	\$88,729
Compound 4.0"	\$70,764	\$76,753	\$74,670	\$37,172	\$123,234
Turbine 4.0"	\$141,527	\$153,506	\$149,339	\$74,344	\$246,469
Compound 6.0"	\$141,527	\$153,506	\$149,339	\$74,344	\$246,469
Turbine 6.0"	\$283,055	\$307,012	\$298,679	\$148,688	\$492,937

Figure 8: Proposed Wastewater Development Fees

Development Fees per Meter					
Meter Type and Size (inches)	Central Buckeye	Palo Verde	Sundance	Tartesso West	Watson Road CFD
Age-Restricted	\$2,634	\$3,933	\$3,697	\$4,794	\$3,103
Disc Meter 1.0"	\$4,214	\$6,291	\$5,915	\$7,670	\$4,965
Disc Meter 1.5"	\$8,427	\$12,582	\$11,830	\$15,341	\$9,930
Disc Meter 2.0"	\$13,483	\$20,132	\$18,928	\$24,545	\$15,888
Compound 3.0"	\$26,967	\$40,264	\$37,857	\$49,091	\$31,777
Turbine 3.0"	\$30,337	\$45,296	\$42,589	\$55,227	\$35,749
Compound 4.0"	\$42,135	\$62,912	\$59,151	\$76,704	\$49,651
Turbine 4.0"	\$84,271	\$125,824	\$118,303	\$153,408	\$99,302
Compound 6.0"	\$84,271	\$125,824	\$118,303	\$153,408	\$99,302
Turbine 6.0"	\$168,542	\$251,647	\$236,606	\$306,816	\$198,605

CURRENT DEVELOPMENT FEES

Shown below, Figure 9 includes current development fees for Festival Ranch, Figure 10 includes current development fees for Tartesso West, Figure 11 includes current development fees in the North Service Area, and Figure 12 includes current development fees in the South Service Area.

Figure 9: Current Non-Utility Development Fees (Festival Ranch)

Residential Development	Development Fees per Unit					
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total ¹
Single-Family Unit	\$478	\$339	\$0	\$1,076	\$0	\$1,893
Multi-Family Unit	\$373	\$265	\$0	\$841	\$0	\$1,479
Age-Restricted Unit	\$373	\$265	\$0	\$841	\$0	\$1,479

Nonresidential Development	Development Fees per 1,000 Square Feet					
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total ¹
Industrial	\$74	\$23	\$0	\$86	\$0	\$183
Commercial	\$163	\$52	\$0	\$679	\$0	\$894
Institutional	\$82	\$26	\$0	\$245	\$0	\$353
Office & Other Services	\$272	\$87	\$0	\$266	\$0	\$625

1. Represents Current Fees in Festival Ranch (North Service Area)

Figure 10: Current Non-Utility Development Fees (Tartesso West)

Residential Development	Development Fees per Unit					
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total ¹
Single-Family Unit	\$1,022	\$0	\$0	\$1,076	\$252	\$2,350
Multi-Family Unit	\$798	\$0	\$0	\$841	\$176	\$1,815
Age-Restricted Unit	\$798	\$0	\$0	\$841	\$176	\$1,815

Nonresidential Development	Development Fees per 1,000 Square Feet					
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total ¹
Industrial	\$159	\$0	\$0	\$86	\$44	\$289
Commercial	\$349	\$0	\$0	\$679	\$318	\$1,346
Institutional	\$175	\$0	\$0	\$245	\$127	\$547
Office & Other Services	\$582	\$0	\$0	\$266	\$137	\$985

1. Represents Current Fees in Tartesso West (Central North Service Area)

Figure 11: Current Non-Utility Development Fees (Parks and Recreational North Service Area)

Residential Development		Development Fees per Unit				
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total ¹
Single-Family Unit	\$1,022	\$0	\$0	\$1,076	\$252	\$2,350
Multi-Family Unit	\$798	\$0	\$0	\$841	\$176	\$1,815
Age-Restricted Unit	\$798	\$0	\$0	\$841	\$176	\$1,815

Nonresidential Development		Development Fees per 1,000 Square Feet				
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total ¹
Industrial	\$159	\$0	\$0	\$86	\$44	\$289
Commercial	\$349	\$0	\$0	\$679	\$318	\$1,346
Institutional	\$175	\$0	\$0	\$245	\$127	\$547
Office & Other Services	\$582	\$0	\$0	\$266	\$137	\$985

1. Represents Current Fees North of I-10 (Central North Service Area)

Figure 12: Current Non-Utility Development Fees (Parks and Recreational South Service Area)

Residential Development		Development Fees per Unit				
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total ¹
Single-Family Unit	\$1,022	\$622	\$1,374	\$1,076	\$252	\$4,346
Multi-Family Unit	\$798	\$486	\$1,074	\$841	\$176	\$3,375
Age-Restricted Unit	\$798	\$486	\$1,074	\$841	\$176	\$3,375

Nonresidential Development		Development Fees per 1,000 Square Feet				
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total ¹
Industrial	\$159	\$19	\$49	\$86	\$44	\$357
Commercial	\$349	\$42	\$109	\$679	\$318	\$1,497
Institutional	\$175	\$21	\$54	\$245	\$127	\$622
Office & Other Services	\$582	\$70	\$182	\$266	\$137	\$1,237

1. Represents Current Fees South of I-10 (Central East Service Area)

Shown below, Figure 13 includes current water development fees and Figure 14 includes current wastewater development fees.

Figure 13: Current Water Development Fees

Development Fees per Meter				
Meter Type and Size (inches)	North	Central North	Central West	Central East
Age-Restricted	\$3,656	\$2,553	\$7,931	\$6,093
Disc Meter 1.0"	\$4,680	\$3,268	\$10,152	\$7,800
Disc Meter 1.5"	\$9,360	\$6,536	\$20,304	\$15,600
Disc Meter 2.0"	\$14,976	\$10,458	\$32,486	\$24,960
Compound 3.0"	\$29,952	\$20,915	\$64,973	\$49,920
Turbine 3.0"	\$33,696	\$23,530	\$73,094	\$56,160
Compound 4.0"	\$46,800	\$32,680	\$101,520	\$78,000
Turbine 4.0"	\$93,600	\$65,360	\$203,040	\$156,000
Compound 6.0"	\$93,600	\$65,360	\$203,040	\$156,000
Turbine 6.0"	\$187,200	\$130,720	\$406,080	\$312,000

Central North includes Buckeye North and Tartesso West.

Central West includes Palo Verde.

Central East includes Central Buckeye, Sundance, and Westpark.

Figure 14: Current Wastewater Development Fees

Development Fees per Meter				
Meter Type and Size (inches)	North	Central North	Central West	Central East
Age-Restricted	\$4,052	\$4,579	\$7,496	\$3,019
Disc Meter 1.0"	\$5,187	\$5,862	\$9,596	\$3,865
Disc Meter 1.5"	\$10,374	\$11,724	\$19,192	\$7,730
Disc Meter 2.0"	\$16,598	\$18,758	\$30,707	\$12,368
Compound 3.0"	\$33,197	\$37,517	\$61,414	\$24,736
Turbine 3.0"	\$37,346	\$42,206	\$69,091	\$27,828
Compound 4.0"	\$51,870	\$58,620	\$95,960	\$38,650
Turbine 4.0"	\$103,740	\$117,240	\$191,920	\$77,300
Compound 6.0"	\$103,740	\$117,240	\$191,920	\$77,300
Turbine 6.0"	\$207,480	\$234,480	\$383,840	\$154,600

Central North includes Tartesso West.

Central West includes Palo Verde.

Central East includes Central Buckeye, Sundance, and Watson Road CFD.

DIFFERENCE BETWEEN PROPOSED AND CURRENT DEVELOPMENT FEES

The differences between the proposed and current development fees are displayed below in Figure 15 for Festival Ranch, Figure 16 for Tartesso West, Figure 17 for the North Service Area, and Figure 18 for the South Service Area. For utilities, the differences between the proposed and current development fees are displayed in Figure 19 for water and Figure 20 for wastewater.

Figure 15: Difference Between Proposed and Current Non-Utility Fees (Festival Ranch)

Residential Development		Development Fees per Unit				
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total ¹
Single-Family Unit	\$20	(\$50)	\$684	(\$234)	\$0	\$420
Multi-Family Unit	\$16	(\$40)	\$534	(\$183)	\$0	\$327
Age-Restricted Unit	(\$62)	(\$85)	\$427	(\$315)	\$0	(\$35)

Nonresidential Development		Development Fees per 1,000 Square Feet				
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total ¹
Industrial	\$9	(\$9)	\$37	\$6	\$0	\$43
Commercial	\$405	\$44	\$252	\$644	\$0	\$1,345
Institutional	\$144	\$12	\$100	\$439	\$0	\$695
Office & Other Services	\$449	\$34	\$320	\$251	\$0	\$1,054

1. Difference Between Proposed and Current Fees in Festival Ranch (North Service Area)

Figure 16: Difference Between Proposed and Current Non-Utility Fees (Tartesso West)

Residential Development		Development Fees per Unit				
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total ¹
Single-Family Unit	(\$156)	\$289	\$684	(\$234)	\$48	\$631
Multi-Family Unit	(\$122)	\$225	\$534	(\$183)	(\$3)	\$451
Age-Restricted Unit	(\$257)	\$180	\$427	(\$315)	(\$40)	(\$5)

Nonresidential Development		Development Fees per 1,000 Square Feet				
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total ¹
Industrial	(\$24)	\$14	\$37	\$6	(\$18)	\$15
Commercial	\$578	\$96	\$252	\$644	\$19	\$1,589
Institutional	\$193	\$38	\$100	\$439	\$66	\$836
Office & Other Services	\$594	\$121	\$320	\$251	\$9	\$1,295

1. Difference Between Proposed and Current Fees in Tartesso West (Central North Service Area)

Figure 17: Difference Between Proposed and Current Non-Utility Fees (Parks and Recreational North Service Area)

Residential Development	Development Fees per Unit					
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total ¹
Single-Family Unit	\$38	\$289	\$684	(\$234)	\$48	\$825
Multi-Family Unit	\$30	\$225	\$534	(\$183)	(\$3)	\$603
Age-Restricted Unit	(\$136)	\$180	\$427	(\$315)	(\$40)	\$116

Nonresidential Development	Development Fees per 1,000 Square Feet					
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total ¹
Industrial	\$11	\$14	\$37	\$6	(\$18)	\$50
Commercial	\$819	\$96	\$252	\$644	\$19	\$1,830
Institutional	\$289	\$38	\$100	\$439	\$66	\$932
Office & Other Services	\$901	\$121	\$320	\$251	\$9	\$1,602

1. Difference Between Proposed and Current Fees North of I-10 (Central North Service Area)

Figure 18: Difference Between Proposed and Current Non-Utility Fees (Parks and Recreational South Service Area)

Residential Development	Development Fees per Unit					
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total
Single-Family Unit	\$38	(\$333)	\$541	(\$234)	\$48	\$60
Multi-Family Unit	\$30	(\$261)	\$422	(\$183)	(\$3)	\$5
Age-Restricted Unit	(\$136)	(\$306)	\$123	(\$315)	(\$40)	(\$674)

Nonresidential Development	Development Fees per 1,000 Square Feet					
Development Type	Fire	Library	Parks and Recreational	Police	Street	Total
Industrial	\$11	(\$5)	\$34	\$6	(\$18)	\$28
Commercial	\$819	\$54	\$464	\$644	\$19	\$2,000
Institutional	\$289	\$17	\$174	\$439	\$66	\$985
Office & Other Services	\$901	\$51	\$545	\$251	\$9	\$1,757

1. Difference Between Proposed and Current Fees South of I-10 (Central East Service Area)

Figure 19: Difference Between Proposed and Current Water Development Fees

Development Fees per Meter					
Meter Type and Size (inches)	Buckeye North	Central Buckeye	Sundance	Tartesso West	Westpark
Age-Restricted	\$1,871	(\$1,294)	(\$1,425)	(\$229)	\$1,612
Disc Meter 1.0"	\$3,808	(\$125)	(\$333)	\$449	\$4,523
Disc Meter 1.5"	\$7,617	(\$249)	(\$666)	\$898	\$9,047
Disc Meter 2.0"	\$12,187	(\$399)	(\$1,066)	\$1,437	\$14,475
Compound 3.0"	\$24,374	(\$798)	(\$2,131)	\$2,875	\$28,950
Turbine 3.0"	\$27,420	(\$898)	(\$2,398)	\$3,234	\$32,569
Compound 4.0"	\$38,084	(\$1,247)	(\$3,330)	\$4,492	\$45,234
Turbine 4.0"	\$76,167	(\$2,494)	(\$6,661)	\$8,984	\$90,469
Compound 6.0"	\$76,167	(\$2,494)	(\$6,661)	\$8,984	\$90,469
Turbine 6.0"	\$152,335	(\$4,988)	(\$13,321)	\$17,968	\$180,937

Figure 20: Difference Between Proposed and Current Wastewater Development Fees

Development Fees per Meter					
Meter Type and Size (inches)	Central Buckeye	Palo Verde	Sundance	Tartesso West	Watson Road CFD
Age-Restricted	(\$385)	(\$3,563)	\$678	\$215	\$84
Disc Meter 1.0"	\$349	(\$3,305)	\$2,050	\$1,808	\$1,100
Disc Meter 1.5"	\$697	(\$6,610)	\$4,100	\$3,617	\$2,200
Disc Meter 2.0"	\$1,115	(\$10,575)	\$6,560	\$5,787	\$3,520
Compound 3.0"	\$2,231	(\$21,151)	\$13,121	\$11,574	\$7,041
Turbine 3.0"	\$2,509	(\$23,795)	\$14,761	\$13,020	\$7,921
Compound 4.0"	\$3,485	(\$33,048)	\$20,501	\$18,084	\$11,001
Turbine 4.0"	\$6,971	(\$66,096)	\$41,003	\$36,168	\$22,002
Compound 6.0"	\$6,971	(\$66,096)	\$41,003	\$36,168	\$22,002
Turbine 6.0"	\$13,942	(\$132,193)	\$82,006	\$72,336	\$44,005

FIRE FACILITIES IIP

ARS § 9-463.05 (T)(7)(f) defines the facilities and assets that can be included in the Fire Facilities IIP:

“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 police and firefighters from more than one station or substation.”

The Fire Facilities IIP includes components for fire facilities, fire apparatus and equipment, and the cost of preparing the Fire Facilities IIP and related Development Fee Report. The incremental expansion methodology is used for fire facilities in the Main Service Area and for fire apparatus and equipment. The cost recovery methodology is used for fire facilities in the Festival Ranch Service Area. A plan-based methodology is used for fire facilities in the Tartesso West Service Area and the Development Fee Report.

Proportionate Share

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Fire Facilities IIP and development fees are assessed on both residential and nonresidential development based on functional population shown in Figure F1. Based on 2015 functional population data, residential development accounts for approximately 82 percent of functional population and nonresidential development is responsible for the remaining 18 percent.

Figure F1: Functional Population

	Service Units in 2015	Demand Hours/Day	Person Hours
Residential			
Buckeye Residents ¹	67,029		
Residents Not Working	45,645	20	912,900
Employed Residents ²	21,384		
Employed in Buckeye ²	1,870	14	26,180
Employed Outside Buckeye ²	19,514	14	273,196
	Residential Subtotal		1,212,276
		Residential Share	82%
Nonresidential			
Non-working Residents	45,645	4	182,580
Jobs in Buckeye ²	8,406		
Residents Working in Buckeye ²	1,870	10	18,700
Non-Resident Workers (inflow commuters) ²	6,536	10	65,360
	Nonresidential Subtotal		266,640
		Nonresidential Share	18%
	Total		1,478,916

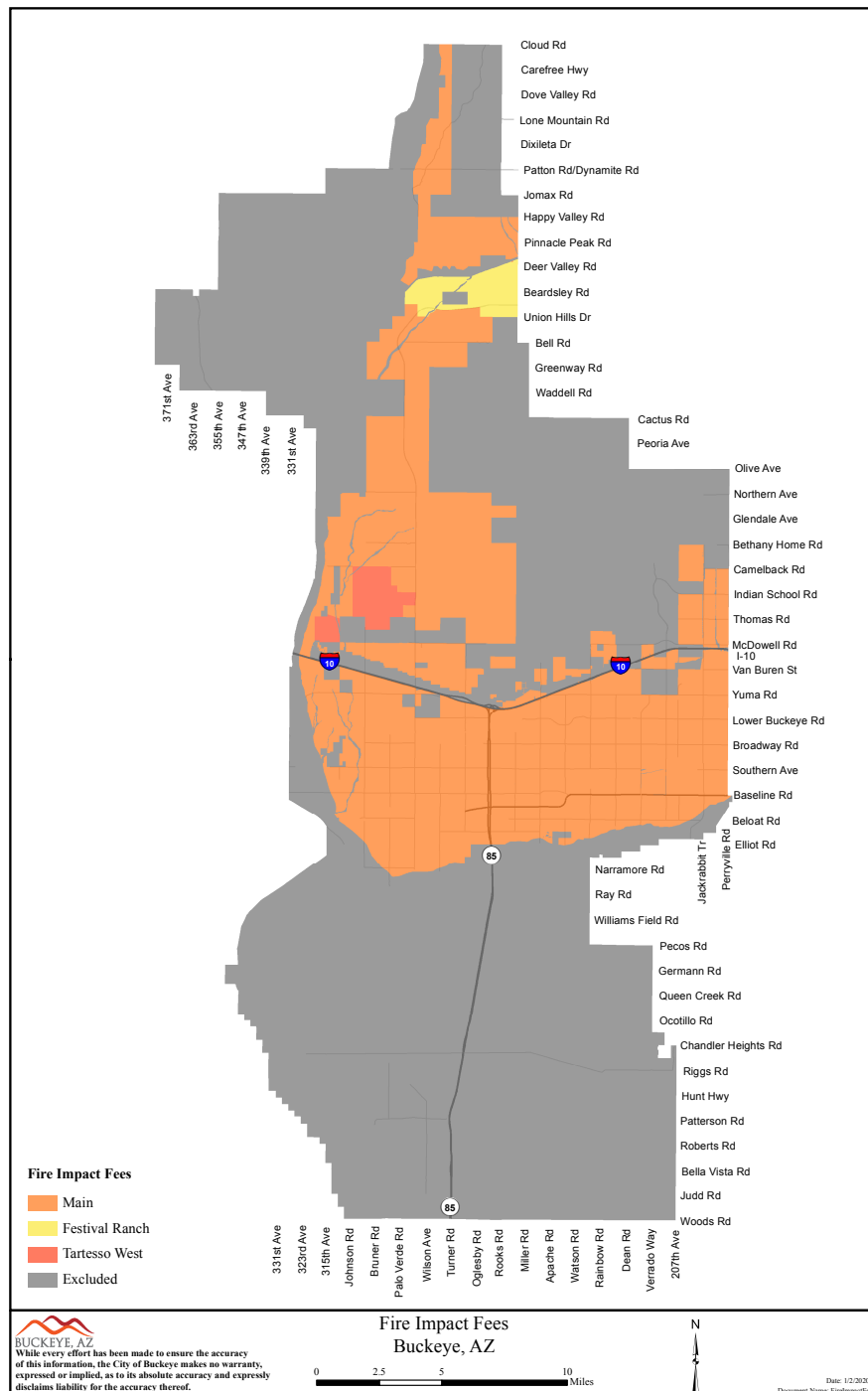
1. TischlerBise calculation using Maricopa Association of Governments Traffic Analysis Zone data

2. U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics, 2015, v6.6

Service Area

Buckeye’s Fire Department strives to provide a uniform response time citywide, and its fire stations operate as an integrated network. The service areas for the Fire Facilities IIP are shown in Figure F2. For fire facilities, there are three service areas: Main, Festival Ranch, and Tartesso West. For fire apparatus and equipment, there is a single, citywide service area: Main.

Figure F2: Fire Service Areas



RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT

ARS § 9-463.05(E)(4) requires:

“A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial.”

Figure F3 displays the demand indicators for residential and nonresidential land uses. For residential development, the table displays the persons per household. For nonresidential development, the table displays the number of jobs per thousand square feet of floor area.

Figure F3: Ratio of Service Unit to Development Unit

Residential Development	
Development Type	Persons per Household ¹
Single-Family Unit	3.20
Multi-Family Unit	2.50
Age-Restricted Unit	2.00

Nonresidential Development	
Development Type	Jobs per 1,000 Sq Ft ¹
Industrial	0.34
Commercial	2.34
Institutional	0.93
Office & Other Services	2.97

1. TischlerBise Land Use Assumptions

ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES

ARS § 9-463.05(E)(1) requires:

“A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.”

ARS § 9-463.05(E)(2) requires:

“An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.”

Fire Facilities (Main) – Incremental Expansion

The City of Buckeye plans to expand its current inventory of fire facilities in the Main Service Area. Shown below in Figure F4, Buckeye’s existing fire facilities in the Main Service Area include 36,200 square feet. Functional population provides the proportionate share of demand for fire facilities from residential and nonresidential development. Buckeye’s existing level of service for residential development is 0.3904 square feet per person (36,200 square feet X 82 percent residential share / 76,027 persons). The nonresidential level of service is 0.5701 square feet per job (36,200 square feet X 18 percent nonresidential share / 11,429 jobs). Based on Buckeye’s Engineering Department estimates, the capital cost used in this analysis is \$450 per square foot. The cost is \$175.70 per person (0.3904 square feet per person X \$450 per square foot) and \$256.56 per job (0.5701 square feet per job X \$450 per square foot).

Figure F4: Existing Level of Service - Main

Description	Square Feet
701 - Downtown Station	8,000
702 - Sundance Station	12,200
703 - Verrado Station	16,000
Total	36,200

Cost Allocation Factors	
Cost per Square Foot ¹	\$450

Level-of-Service (LOS) Standards	
Existing Square Feet	36,200
Residential	
Residential Share	82%
2018 Peak Population - Main	76,027
Square Feet per Person	0.3904
Cost per Person	\$175.70
Nonresidential	
Nonresidential Share	18%
2018 Jobs - Main	11,429
Square Feet per Job	0.5701
Cost per Job	\$256.56

1. Engineering Department, City of Buckeye, Arizona.

Fire Facilities (Festival Ranch) – Cost Recovery

As outlined in the Festival Ranch Development Agreement, Pulte Homes constructed a fire station to serve demand for fire facilities within Planning Unit E and Planning Unit F of the development. The facility cost \$6.80 million to construct and includes 11,870 square feet – \$573 per square foot. Based on projected housing units and nonresidential floor area outlined in Exhibit D to Third Amendment to Development Agreement (Festival Ranch), the Festival Ranch fire station will serve 45,523 persons and 2,370 jobs.

Functional population provides the proportionate share of demand for fire facilities from residential and nonresidential development. The Festival Ranch level of service for residential development will be 0.2138 square feet per person (11,870 square feet X 82 percent residential share / 45,523 persons). The Festival Ranch nonresidential level of service will be 0.9016 square feet per job (11,870 square feet X 18 percent nonresidential share / 2,370 jobs). Based on the construction cost of \$6.80 million for 11,870 square feet, the cost is \$573 per square foot. This results in a cost of \$122.49 per person (0.2138 square feet per person X \$573 per square foot) and \$516.49 per job (0.9016 square feet per job X \$573 per square foot). Since Pulte Homes constructed the Festival Ranch fire station, development within the Festival Ranch Service Area will receive a credit for fire facilities.

Figure F5: Existing Level of Service - Festival Ranch

Cost Allocation Factors	
Fire Station 704, Festival Ranch	\$6,800,000
Cost per Square Foot ¹	\$573

Level-of-Service (LOS) Standards	
Existing Square Feet	11,870
Residential	
Residential Share	82%
Projected Population ²	45,523
Square Feet per Person	0.2138
Cost per Person	\$122.49
Nonresidential	
Nonresidential Share	18%
Projected Jobs ²	2,370
Square Feet per Job	0.9016
Cost per Job	\$516.49

1. Pulte Homes, \$6.80 million / 11,870 square feet

2. Based on Festival Ranch CMP, Planning Units E and F

Fire Facilities (Tartesso West) – Plan-Based

As outlined in the Tartesso West Development Agreement, the Tartesso West development will need a permanent fire station to serve demand for fire facilities within the development. The planned facility will serve Village 1, 2, 3, and 5, and it is projected to cost \$5.75 million to construct 13,300 square feet – \$432 per square foot. Based on projected housing units and nonresidential floor area outlined in Tartesso West Community Master Plan Amendment #3, the Tartesso West fire station will serve 40,986 persons and 6,749 jobs.

Functional population provides the proportionate share of demand for fire facilities from residential and nonresidential development. The Tartesso West level of service for residential development will be 0.2661 square feet per person (13,300 square feet X 82 percent residential share / 40,986 persons). The Tartesso West nonresidential level of service will be 0.3547 square feet per job (13,300 square feet X 18 percent nonresidential share / 6,749 jobs). The cost is \$115.04 per person (0.2661 square feet per person X \$432 per square foot) and \$153.36 per job (0.3547 square feet per job X \$432 per square foot).

Figure F6: Planned Level of Service - Tartesso West

Cost Allocation Factors	
Fire Station 705, Tartesso	\$5,750,000
Cost per Square Foot ¹	\$432

Level-of-Service (LOS) Standards	
Planned Square Feet	13,300
Residential	
Residential Share	82%
Projected Population ²	40,986
Square Feet per Person	0.2661
Cost per Person	\$115.04
Nonresidential	
Nonresidential Share	18%
Projected Jobs ²	6,749
Square Feet per Job	0.3547
Cost per Job	\$153.36

1. CIP 2019-23, City of Buckeye, Arizona.
2. Based on Tartesso West CMP, Village 1, 2, 3, and 5

Fire Apparatus and Equipment – Incremental Expansion

Development fees will be used to expand Buckeye’s inventory of fire apparatus and equipment citywide. Figure F7 lists the current apparatus and equipment used by Buckeye’s Fire Department. The current inventory includes 29 units with a total replacement cost of approximately \$15.91 million. The replacement cost per unit is \$548,709 (\$15,912,566 / 29 units).

Figure F7: Existing Fire Apparatus and Equipment

Description	Units ¹	Unit Cost ¹	Total Cost
Regional Wireless (Fire Share)	1	\$1,181,466	\$1,181,466
Pumpers	10	\$886,000	\$8,860,000
Ladder Trucks	2	\$1,981,000	\$3,962,000
Haz Mat Truck	1	\$540,000	\$540,000
Driver Training Simulator	1	\$341,100	\$341,100
Small Pickup Trucks	10	\$72,000	\$720,000
Brush Trucks	2	\$72,000	\$144,000
Air and Light Trailer	1	\$82,000	\$82,000
Heavy Duty Pickup Truck	1	\$82,000	\$82,000
Total	29	\$548,709	\$15,912,566

1. Buckeye Fire-Medical Rescue Department, Buckeye, Arizona

As previously discussed, functional population is used to allocate the proportionate share of demand to residential and nonresidential development. Buckeye’s existing LOS for residential development is 0.0003 units per person (29 units X 82 percent residential share / 84,426 persons). The nonresidential level of service is 0.0004 units per job (29 units X 18 percent nonresidential share / 11,856 jobs). The cost is \$154.55 per person (0.0003 units per person X \$548,709 per unit) and \$241.59 per job (0.0004 units per job X \$548,709 per unit).

Figure F8: Existing Level of Service

Cost Allocation Factors	
Cost per Unit	\$548,709

Level-of-Service (LOS) Standards	
Existing Units	29
Residential	
Residential Share	82%
2018 Peak Population - City	84,426
Units per Person	0.0003
Cost per Person	\$154.55
Nonresidential	
Nonresidential Share	18%
2018 Jobs - City	11,856
Units per Job	0.0004
Cost per Job	\$241.59

IIP and Development Fee Report – Plan-Based

The cost to prepare the Fire Facilities IIP and development fees totals \$28,948. Buckeye plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of new residential and nonresidential development from the *Land Use Assumptions* document, the cost is \$0.97 per person and \$1.08 per job.

Figure F9: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Increase	Cost per Service Unit
Fire	\$28,948	Residential	82%	Peak Population	24,575	\$0.97
		Nonresidential	18%	Jobs	4,825	\$1.08
Library	\$28,948	Residential	94%	Peak Population	24,575	\$1.11
		Nonresidential	6%	Jobs	4,823	\$0.36
Parks and Recreational	\$28,948	Residential	94%	Peak Population	24,575	\$1.11
		Nonresidential	6%	Jobs	4,823	\$0.36
Police	\$28,948	Residential	82%	Peak Population	24,575	\$0.97
		Nonresidential	18%	Vehicle Trip	18,743	\$0.28
Street	\$28,948	All Development	100%	VMT	209,168	\$0.14
Total	\$144,740					

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(5) requires:

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

ARS § 9-463.05(E)(6) requires:

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

Fire Stations (Main)

Shown in Figure F10, Buckeye’s peak population in the Main Service Area, excluding development in the Festival Ranch Service Area and the Tartesso West Service Area, is projected to increase by 46,505 persons by 2028, and employment is projected to increase by 11,864 jobs during the same period. Using the 2018 LOS, future development will demand 24,921 additional square feet of fire facilities. Based on a capital cost of \$450 per square foot, the growth-related expenditure on fire facilities is \$11.21 million.

Figure F10: Projected Demand for Fire Facilities (Main)

Type of Infrastructure	Level of Service		Service Unit	Unit Cost
Fire Facilities	Residential	0.3904 Square Feet	per person	\$450
	Nonresidential	0.5701 Square Feet	per job	

Growth-Related Need for Fire Facilities						
Year	Peak Population	Jobs	Square Feet			Total
			Residential	Nonresidential		
Base 2018	76,027	11,429	29,684	6,516		36,200
Year 1 2019	79,809	12,216	31,161	6,965		38,125
Year 2 2020	83,755	13,071	32,701	7,452		40,153
Year 3 2021	87,888	13,999	34,315	7,981		42,296
Year 4 2022	92,206	15,011	36,001	8,558		44,559
Year 5 2023	96,717	16,115	37,762	9,188		46,950
Year 6 2024	101,434	17,313	39,604	9,871		49,475
Year 7 2025	106,366	18,621	41,530	10,616		52,146
Year 8 2026	111,512	20,048	43,539	11,430		54,969
Year 9 2027	116,903	21,601	45,644	12,315		57,959
Year 10 2028	122,532	23,293	47,841	13,280		61,121
10-Year Increase	46,505	11,864	18,157	6,764		24,921

Growth-Related Expenditures	\$8,170,840	\$3,043,803	\$11,214,643
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Fire Apparatus and Equipment (Main)

Shown in Figure F11, Buckeye’s peak population in the Main Service Area is projected to increase by 55,583 persons by 2028, and employment is projected to increase by 12,269 jobs during the same period. Using the 2018 LOS, future development will demand 21.0 additional units of fire apparatus and equipment. Based on the average cost of \$548,709 per unit, the growth-related expenditure on fire apparatus and equipment is \$11.55 million.

Figure F11: Projected Demand for Fire Apparatus and Equipment

Type of Infrastructure	Level of Service		Service Unit	Unit Cost
Fire Apparatus and Equipment	Residential	0.0003 Units	per person	\$548,709
	Nonresidential	0.0004 Units	per job	

Growth-Related Need for Fire Apparatus and Equipment						
Year	Peak Population	Jobs	Units			
			Residential	Nonresidential	Total	
Base 2018	84,426	11,856	23.8	5.2	29.0	
Year 1 2019	88,896	12,665	25.0	5.6	30.6	
Year 2 2020	93,575	13,546	26.4	6.0	32.3	
Year 3 2021	98,482	14,502	27.7	6.4	34.1	
Year 4 2022	103,621	15,543	29.2	6.8	36.0	
Year 5 2023	109,001	16,681	30.7	7.3	38.0	
Year 6 2024	114,637	17,919	32.3	7.9	40.2	
Year 7 2025	120,546	19,271	34.0	8.5	42.4	
Year 8 2026	126,731	20,749	35.7	9.1	44.8	
Year 9 2027	133,216	22,361	37.5	9.8	47.4	
Year 10 2028	140,009	24,125	39.4	10.6	50.1	
10-Year Increase	55,583	12,269	15.7	5.4	21.0	

Growth-Related Expenditures	\$8,590,528	\$2,964,038	\$11,554,565
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FIRE FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is not necessary for Fire Facilities development fees, because costs generated by projected development exceed revenues generated by projected development. Appendix A contains the forecast of revenues required by Arizona’s Enabling Legislation (ARS § 9-463.05(E)(7)).

Fire Facilities Development Fees – Main Service Area

Infrastructure components and cost factors for Fire Facilities in the Main Service Area are summarized in the upper portion of Figure F12. The cost per service unit for Fire Facilities is \$331.21 per person and \$499.22 per job.

Fire Facilities development fees for residential development are assessed according to the number of persons per household. The single-family fee of \$1,060 is calculated using a cost per service unit of \$331.21 per person multiplied by a demand unit of 3.20 persons per household.

Nonresidential development fees are calculated using jobs as the service unit. The fee of \$1,168 per 1,000 square feet of commercial development is derived from a cost per service unit of \$499.22 per job multiplied by a demand unit of 2.34 jobs per 1,000 square feet.

Figure F12: Schedule of Fire Facilities Development Fees – Main Service Area

Fee Component	Cost per Person	Cost per Job
Fire Facilities	\$175.70	\$256.56
Fire Apparatus and Equipment	\$154.55	\$241.59
Development Fee Report	\$0.97	\$1.08
Total	\$331.21	\$499.22

Residential Development		Development Fees per Unit		
Development Type	Persons per Household ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Single-Family Unit	3.20	\$1,060	\$1,022	\$38
Multi-Family Unit	2.50	\$828	\$798	\$30
Age-Restricted Unit	2.00	\$662	\$798	(\$136)

Nonresidential Development		Development Fees per 1,000 Square Feet		
Development Type	Jobs per 1,000 Sq Ft ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Industrial	0.34	\$170	\$159	\$11
Commercial	2.34	\$1,168	\$349	\$819
Institutional	0.93	\$464	\$175	\$289
Office & Other Services	2.97	\$1,483	\$582	\$901

1. TischlerBise Land Use Assumptions

2. Current Fees in Central East Service Area

Fire Facilities Development Fees – Festival Ranch Service Area

Infrastructure components and cost factors for Fire Facilities in the Festival Ranch Service Area are summarized in the upper portion of Figure F13. Since Festival Ranch currently has a fire station, but the developer has not yet been repaid for the cost of construction, development in the Festival Ranch Service Area will receive a credit for the cost of fire facilities until the developer recovers the cost of the Festival Ranch fire station. The cost per service unit for Fire Facilities is \$155.51 per person and \$242.66 per job.

Fire Facilities development fees for residential development are assessed according to the number of persons per household. The single-family fee of \$498 is calculated using a cost per service unit of \$155.51 per person multiplied by a demand unit of 3.20 persons per household.

Nonresidential development fees are calculated using jobs as the service unit. The fee of \$568 per 1,000 square feet of commercial development is derived from a cost per service unit of \$242.66 per job multiplied by a demand unit of 2.34 jobs per 1,000 square feet.

Figure F13: Schedule of Fire Facilities Development Fees – Festival Ranch Service Area

Fee Component	Cost per Person	Cost per Job
Fire Facilities	credit	credit
Fire Apparatus and Equipment	\$154.55	\$241.59
Development Fee Report	\$0.97	\$1.08
Total	\$155.51	\$242.66

Residential Development		Development Fees per Unit		
Development Type	Persons per Household ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Single-Family Unit	3.20	\$498	\$478	\$20
Multi-Family Unit	2.50	\$389	\$373	\$16
Age-Restricted Unit	2.00	\$311	\$373	(\$62)

Nonresidential Development		Development Fees per 1,000 Square Feet		
Development Type	Jobs per 1,000 Sq Ft ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Industrial	0.34	\$83	\$74	\$9
Commercial	2.34	\$568	\$163	\$405
Institutional	0.93	\$226	\$82	\$144
Office & Other Services	2.97	\$721	\$272	\$449

1. TischlerBise Land Use Assumptions

2. Current Fees in Festival Ranch (excludes "building cost" from 2014 study)

Fire Facilities Development Fees – Tartesso West Service Area

Infrastructure components and cost factors for Fire Facilities in the Tartesso West Service Area are summarized in the upper portion of Figure F14. The cost per service unit for Fire Facilities is \$270.55 per person and \$396.02 per job.

Fire Facilities development fees for residential development are assessed according to the number of persons per household. The single-family fee of \$866 is calculated using a cost per service unit of \$270.55 per person multiplied by a demand unit of 3.20 persons per household.

Nonresidential development fees are calculated using jobs as the service unit. The fee of \$927 per 1,000 square feet of commercial development is derived from a cost per service unit of \$396.02 per job multiplied by a demand unit of 2.34 jobs per 1,000 square feet.

Figure F14: Schedule of Fire Facilities Development Fees – Tartesso West Service Area

Fee Component	Cost per Person	Cost per Job
Fire Facilities	\$115.04	\$153.36
Fire Apparatus and Equipment	\$154.55	\$241.59
Development Fee Report	\$0.97	\$1.08
Total	\$270.55	\$396.02

Residential Development		Development Fees per Unit		
Development Type	Persons per Household ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Single-Family Unit	3.20	\$866	\$1,022	(\$156)
Multi-Family Unit	2.50	\$676	\$798	(\$122)
Age-Restricted Unit	2.00	\$541	\$798	(\$257)

Nonresidential Development		Development Fees per 1,000 Square Feet		
Development Type	Jobs per 1,000 Sq Ft ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Industrial	0.34	\$135	\$159	(\$24)
Commercial	2.34	\$927	\$349	\$578
Institutional	0.93	\$368	\$175	\$193
Office & Other Services	2.97	\$1,176	\$582	\$594

1. TischlerBise Land Use Assumptions
2. Current Fees in Central North Service Area

FIRE FACILITIES DEVELOPMENT FEE REVENUE

Appendix A contains the forecast of revenues required by Arizona’s Enabling Legislation (ARS § 9-463.05(E)(7)). Projected fee revenue shown in Figure F15 is based on the development projections for the Main Service Area in the *Land Use Assumptions* document and the updated Fire Facilities development fees. If development occurs faster than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs slower than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate. Projected development fee revenue is \$21.80 million over the next 10 years, and the projected growth-related cost of fire infrastructure is \$22.80 million. While demand generated by Verrado is included in the analysis, infrastructure costs generated by Verrado cannot be captured through development fees due to a development agreement.

Figure F15: Projected Fire Facilities Development Fee Revenue – Main Service Area

Fee Component	Growth Share	Existing Share	Total
Fire Facilities	\$11,214,643	\$0	\$11,214,643
Fire Apparatus and Equipment	\$11,554,565	\$0	\$11,554,565
Development Fee Report	\$28,948	\$0	\$28,948
Total	\$22,798,156	\$0	\$22,798,156

		Single Family \$1,060 per unit	Multi-Family \$828 per unit	Industrial \$170 per KSF	Commercial \$1,168 per KSF	Institutional \$464 per KSF	Office & Other \$1,483 per KSF
Year		Housing Units	Housing Units	KSF	KSF	KSF	KSF
Base	2018	22,999	1,210	3,938	1,734	1,678	1,403
Year 1	2019	24,170	1,272	3,967	1,913	1,710	1,513
Year 2	2020	25,394	1,337	3,994	2,110	1,743	1,630
Year 3	2021	26,675	1,404	4,023	2,327	1,777	1,757
Year 4	2022	28,015	1,474	4,053	2,566	1,810	1,893
Year 5	2023	29,415	1,548	4,082	2,830	1,846	2,040
Year 6	2024	30,879	1,625	4,114	3,121	1,880	2,197
Year 7	2025	32,410	1,706	4,144	3,440	1,917	2,367
Year 8	2026	34,010	1,790	4,176	3,793	1,953	2,550
Year 9	2027	35,685	1,878	4,203	4,181	1,990	2,746
Year 10	2028	37,436	1,970	4,235	4,607	2,026	2,957
10-Year Increase		14,437	760	297	2,873	348	1,554
Projected Revenue		\$15,303,220	\$629,280	\$50,497	\$3,355,496	\$161,611	\$2,304,444

Projected Fee Revenue	\$21,804,548
Total Expenditures	\$22,798,156
Verrado Deficit	\$993,608

LIBRARY FACILITIES IIP

ARS § 9-463.05 (T)(7)(d) defines the facilities and assets that can be included in the Library Facilities IIP:

“library facilities of up to ten thousand square feet that provide a direct benefit to development, not including equipment, vehicles or appurtenances.”

The Library Facilities IIP includes components for library facilities and the cost of preparing the Library Facilities IIP and Development Fees. The incremental expansion methodology is used for library facilities, and a plan-based methodology is used for the Development Fee Report.

Proportionate Share

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Library Facilities IIP and development fees will allocate the cost of public services between residential and nonresidential based on daytime population. Based on 2015 estimates from the U.S. Census Bureau’s OnTheMap web application applied to 2015 employment, 7,617 inflow commuters traveled to Buckeye for work in 2015. The proportionate share is based on cumulative impact days per year with residents potentially impacting library facilities 365 days per year. Inflow commuters potentially impact library facilities 200 days per year, assuming four workdays per week multiplied by 50 weeks per year. For library facilities, residential development generates 94 percent of demand and nonresidential development generates the remaining six percent of demand.

Figure L1: Daytime Population

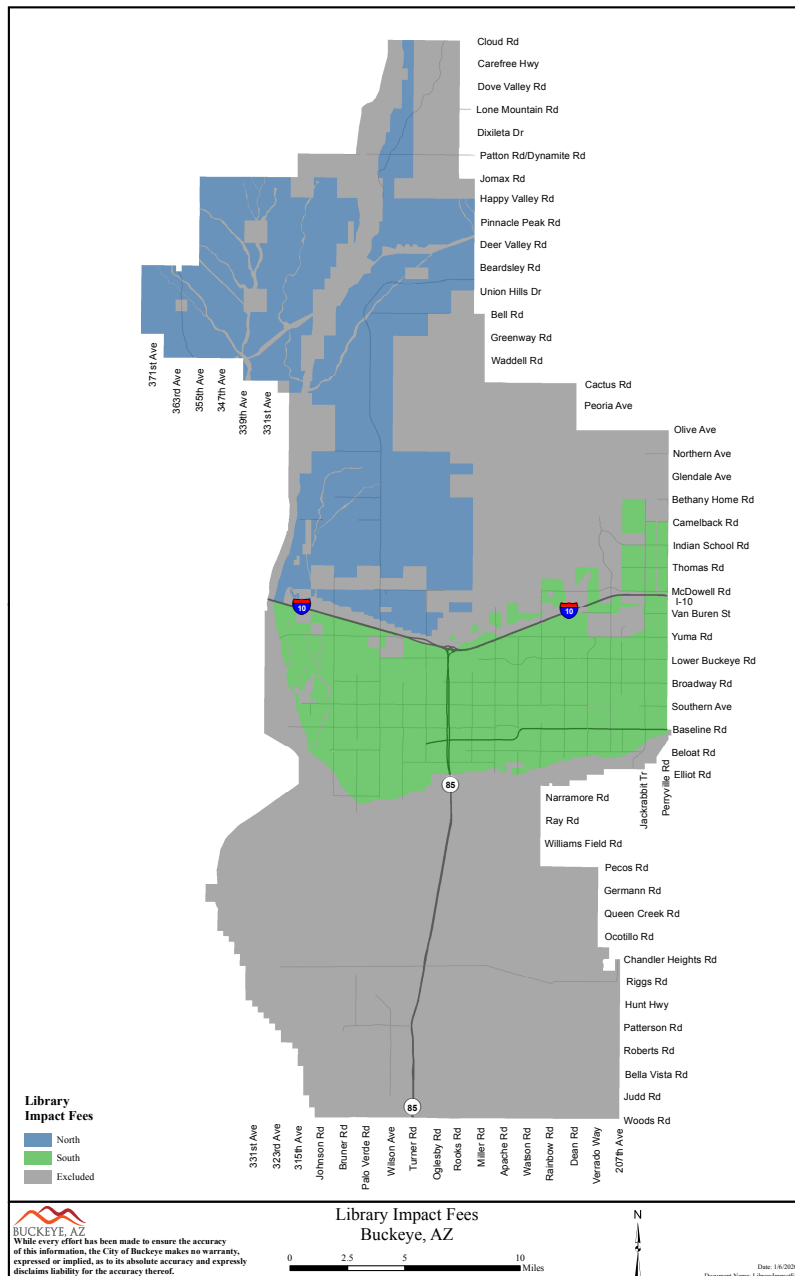
Development Type	Service Unit	Impact Days per Year	Total Impact Days per Year	Proportionate Share
Residential	67,029 residents	365 days	24,465,585	94%
Nonresidential	7,617 inflow commuters	200 days	1,523,356	6%
Total			25,988,941	100%

Nonresidential Impact Days = 4 days per week X 50 weeks per year

Service Area

Buckeye plans to provide a uniform level of service and equal access to library facilities within the city limits. The service areas for the Library Facilities IIP are shown in Figure L2. It is anticipated that in the future a detailed library facilities master plan may be generated for the City’s growth areas. In the event a future library facilities master plan determines that the libraries planned for the two services areas within the City are inadequate to insure that libraries provide a “direct benefit” as defined in the City Code, then a different methodology may be utilized by the City and the number of service areas may be modified.

Figure L2: Library Service Areas



RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT

ARS § 9-463.05(E)(4) requires:

“A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial.”

Figure L3 displays the demand indicators for residential and nonresidential land uses. For residential development, the table displays the number of persons per household. For nonresidential development, the table displays the number of employees per thousand square feet of floor area.

Figure L3: Ratio of Service Unit to Development Unit

Residential Development	
Development Type	Persons per Household ¹
Single-Family Unit	3.20
Multi-Family Unit	2.50
Age-Restricted Unit	2.00

Nonresidential Development	
Development Type	Jobs per 1,000 Sq Ft ¹
Industrial	0.34
Commercial	2.34
Institutional	0.93
Office & Other Services	2.97

1. TischlerBise Land Use Assumptions

ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES

ARS § 9-463.05(E)(1) requires:

“A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.”

ARS § 9-463.05(E)(2) requires:

“An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.”

Library Facilities – Incremental Expansion

The City of Buckeye has two libraries with a total floor area of 22,602 square feet. The Enabling Legislation limits library facilities to “ten thousand square feet that provide a direct benefit to development.” Since an average size library in Buckeye is 11,301 square feet, the analysis uses an adjustment factor of 88 percent to reduce the average size library to 10,000 square feet. When the adjustment factor is applied to the total square footage, Buckeye has 20,000 eligible square feet (22,602 total square feet X 88 percent adjustment factor) resulting in an average size library of 10,000 square feet (20,000 eligible square feet / two libraries).

Figure L4: Existing Library Facilities

Description	Square Feet
Coyote Branch	16,232
Downtown Library	6,370
Total	22,602

Average Size	11,301
Eligible (per Library)	10,000
Adjustment Factor (Eligible / Avg)	88%
Eligible Square Feet	20,000

To allocate the proportionate share of demand for library facilities to residential and nonresidential development, this analysis uses functional population. Buckeye’s eligible citywide level of service for residential development is 0.2227 square feet per person (20,000 eligible square feet X 94 percent residential share / 84,426 persons). The nonresidential level of service is 0.1012 eligible square feet per job (20,000 eligible square feet X 6 percent nonresidential share / 11,856 jobs). Based on estimates for the planned North Library, which excludes land, the capital cost is \$400 per square foot (\$4.00 million / 10,000 square feet). The analysis assumes future libraries built in the South Service Area will have a similar capital cost per square foot – locations for potential future libraries are dependent on where development occurs and may be identified in a future library facilities master plan. The cost is \$89.07 per person (0.2227 eligible square feet per person X \$400 per square foot) and \$40.49 per job (0.1012 square feet per job X \$400 per square foot).

Figure L5: Existing Level of Service

Cost Allocation Factors	
Cost per Square Foot ¹	\$400

Level-of-Service (LOS) Standards	
Eligible Square Feet	20,000
Residential	
Residential Share	94%
2018 Peak Population - City	84,426
Square Feet per Person	0.2227
Cost per Person	\$89.07
Nonresidential	
Nonresidential Share	6%
2018 Jobs - City	11,856
Square Feet per Job	0.1012
Cost per Job	\$40.49

1. Community Services Department, City of Buckeye, Arizona.

Development Fee Report – Plan-Based

The cost to prepare the Library Facilities IIP and related Development Fee Report totals \$28,948. Buckeye plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of new development from the *Land Use Assumptions* document, the cost is \$1.11 per person and \$0.36 per job.

Figure L6: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Increase	Cost per Service Unit
Fire	\$28,948	Residential	82%	Peak Population	24,575	\$0.97
		Nonresidential	18%	Jobs	4,825	\$1.08
Library	\$28,948	Residential	94%	Peak Population	24,575	\$1.11
		Nonresidential	6%	Jobs	4,823	\$0.36
Parks and Recreational	\$28,948	Residential	94%	Peak Population	24,575	\$1.11
		Nonresidential	6%	Jobs	4,823	\$0.36
Police	\$28,948	Residential	82%	Peak Population	24,575	\$0.97
		Nonresidential	18%	Vehicle Trip	18,743	\$0.28
Street	\$28,948	All Development	100%	VMT	209,168	\$0.14
Total	\$144,740					

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(5) requires:

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

ARS § 9-463.05(E)(6) requires:

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

Library Facilities (North)

Shown in Figure L7, Buckeye’s population in the North Service Area is projected to increase by 17,436 persons by 2028, and employment is projected to increase by 2,217 jobs during the same period. Using the 2018 citywide LOS, future development in the North Service Area will demand 4,107 additional square feet of library facilities. Based on the average cost of \$400 per square foot, the growth-related expenditure on library facilities is \$1.64 million in the North Service Area.

Figure L7: Projected Demand for Library Facilities (North)

Type of Infrastructure	Level of Service		Service Unit	Unit Cost
Library Facilities	Residential	0.2227 Square Feet	per person	\$400
	Nonresidential	0.1012 Square Feet	per job	

Growth-Related Need for Library Facilities						
Year	Peak Population	Jobs	Square Feet			
			Residential	Nonresidential	Total	
Base 2018	18,597	1,460	4,141	148	4,289	
Year 1 2019	19,925	1,581	4,437	160	4,597	
Year 2 2020	21,329	1,715	4,750	174	4,923	
Year 3 2021	22,819	1,865	5,081	189	5,270	
Year 4 2022	24,398	2,036	5,433	206	5,639	
Year 5 2023	26,069	2,228	5,805	226	6,031	
Year 6 2024	27,838	2,446	6,199	248	6,447	
Year 7 2025	29,715	2,695	6,617	273	6,890	
Year 8 2026	31,699	2,978	7,059	301	7,360	
Year 9 2027	33,804	3,303	7,527	334	7,862	
Year 10 2028	36,033	3,677	8,024	372	8,396	
10-Year Increase	17,436	2,217	3,883	224	4,107	

Growth-Related Expenditures	\$1,553,061	\$89,757	\$1,642,818
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Library Facilities (South)

Shown in Figure L8, Buckeye’s population in the South Service Area is projected to increase by 38,147 persons by 2028, and employment is projected to increase by 10,043 jobs during the same period. Using the 2018 citywide LOS, future development in the South Service Area will demand 9,511 additional square feet of library facilities. Based on the average cost of \$400 per square foot, the growth-related expenditure on library facilities is \$3.80 million in the South Service Area.

Figure L8: Projected Demand for Library Facilities (South)

Type of Infrastructure	Level of Service		Service Unit	Unit Cost
Library Facilities	Residential	0.2227 Square Feet	per person	\$400
	Nonresidential	0.1012 Square Feet	per job	

Growth-Related Need for Library Facilities						
Year	Peak Population	Jobs	Square Feet			
			Residential	Nonresidential	Total	
Base 2018	65,829	10,396	14,659	1,052	15,711	
Year 1 2019	68,971	11,083	15,358	1,122	16,480	
Year 2 2020	72,246	11,830	16,088	1,197	17,285	
Year 3 2021	75,663	12,637	16,849	1,279	18,128	
Year 4 2022	79,223	13,507	17,641	1,367	19,009	
Year 5 2023	82,932	14,451	18,467	1,463	19,930	
Year 6 2024	86,799	15,471	19,328	1,566	20,894	
Year 7 2025	90,831	16,573	20,226	1,677	21,904	
Year 8 2026	95,032	17,766	21,162	1,798	22,960	
Year 9 2027	99,412	19,051	22,137	1,928	24,065	
Year 10 2028	103,976	20,439	23,153	2,069	25,222	
10-Year Increase	38,147	10,043	8,495	1,016	9,511	

Growth-Related Expenditures	\$3,397,833	\$406,599	\$3,804,432
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LIBRARY FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is not necessary for Library Facilities development fees, because costs generated by projected development exceed revenues generated by projected development. Appendix A contains the forecast of revenues required by Arizona’s Enabling Legislation (ARS § 9-463.05(E)(7)).

Library Facilities Development Fees – North Service Area

Infrastructure components and cost factors for Library Facilities in the North Service Area are summarized in the upper portion of Figure L9. The cost per service unit for Library Facilities is \$90.17 per person and \$40.84 per job.

Library Facilities development fees for residential development are assessed according to the number of persons per household. The single-family fee of \$289 is calculated using a cost per service unit of \$90.17 per person multiplied by a demand unit of 3.20 persons per household.

Nonresidential development fees are calculated using jobs as the service unit. The fee of \$96 per 1,000 square feet of commercial development is derived from a cost per service unit of \$40.84 per job multiplied by a demand unit of 2.34 jobs per 1,000 square feet.

Figure L9: Schedule of Library Facilities Development Fees – North Service Area

Fee Component	Cost per Person	Cost per Job
Library Facilities	\$89.07	\$40.49
Development Fee Report	\$1.11	\$0.36
Total	\$90.17	\$40.84

Residential Development	Development Fees per Unit			
Development Type	Persons per Household ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Single-Family Unit	3.20	\$289	\$339	(\$50)
Multi-Family Unit	2.50	\$225	\$265	(\$40)
Age-Restricted Unit	2.00	\$180	\$265	(\$85)

Nonresidential Development	Development Fees per 1,000 Square Feet			
Development Type	Jobs per 1,000 Sq Ft ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Industrial	0.34	\$14	\$23	(\$9)
Commercial	2.34	\$96	\$52	\$44
Institutional	0.93	\$38	\$26	\$12
Office & Other Services	2.97	\$121	\$87	\$34

1. TischlerBise Land Use Assumptions
2. Current Fees in North Service Area

Library Facilities Development Fees – South Service Area

Infrastructure components and cost factors for Library Facilities in the South Service Area are summarized in the upper portion of Figure L10. The cost per service unit for Library Facilities is \$90.17 per person and \$40.84 per job.

Library Facilities development fees for residential development are assessed according to the number of persons per household. The single-family fee of \$289 is calculated using a cost per service unit of \$90.17 per person multiplied by a demand unit of 3.20 persons per household.

Nonresidential development fees are calculated using jobs as the service unit. The fee of \$96 per 1,000 square feet of commercial development is derived from a cost per service unit of \$40.84 per job multiplied by a demand unit of 2.34 jobs per 1,000 square feet.

Figure L10: Schedule of Library Facilities Development Fees – South Service Area

Fee Component	Cost per Person	Cost per Job
Library Facilities	\$89.07	\$40.49
Development Fee Report	\$1.11	\$0.36
Total	\$90.17	\$40.84

Residential Development		Development Fees per Unit		
Development Type	Persons per Household ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Single-Family Unit	3.20	\$289	\$622	(\$333)
Multi-Family Unit	2.50	\$225	\$486	(\$261)
Age-Restricted Unit	2.00	\$180	\$486	(\$306)

Nonresidential Development		Development Fees per 1,000 Square Feet		
Development Type	Jobs per 1,000 Sq Ft ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Industrial	0.34	\$14	\$19	(\$5)
Commercial	2.34	\$96	\$42	\$54
Institutional	0.93	\$38	\$21	\$17
Office & Other Services	2.97	\$121	\$70	\$51

1. TischlerBise Land Use Assumptions
2. Current Fees in Central East Service Area

LIBRARY FACILITIES DEVELOPMENT FEE REVENUE

Appendix A contains the forecast of revenues required by Arizona’s enabling legislation (ARS § 9-463.05(E)(7)).

North Service Area

In accordance with state law, this report includes an IIP for Library Facilities needed to accommodate new development in the North Service Area. Projected fee revenue shown in Figure L11 is based on the development projections in the *Land Use Assumptions* document and the updated development fees for Library Facilities. If development in the North Service Area occurs at a more rapid rate than projected, the demand for infrastructure will increase and development fee revenue will increase at a corresponding rate. If development occurs at a slower rate than is projected, the demand for infrastructure will also decrease, along with development fee revenue. Projected development fee revenue is \$1.65 million over the next 10 years, and the projected growth-related cost of library facilities is \$1.65 million.

Figure L11: Projected Library Facilities Development Fee Revenue – North Service Area

Fee Component	Growth Share	Existing Share	Total
Library Facilities	\$1,642,818	\$0	\$1,642,818
Development Fee Report	\$8,550	\$0	\$8,550
Total	\$1,651,368	\$0	\$1,651,368

		Single Family \$289 per unit	Multi-Family \$225 per unit	Industrial \$14 per KSF	Commercial \$96 per KSF	Institutional \$38 per KSF	Office & Other \$121 per KSF
Year		Housing Units	Housing Units	KSF	KSF	KSF	KSF
Base	2018	6,310	332	335	91	328	279
Year 1	2019	6,708	353	341	110	338	301
Year 2	2020	7,129	375	347	132	347	325
Year 3	2021	7,575	399	353	159	357	350
Year 4	2022	8,048	424	359	192	368	378
Year 5	2023	8,549	450	365	231	378	408
Year 6	2024	9,079	478	371	278	389	441
Year 7	2025	9,642	507	376	334	401	476
Year 8	2026	10,236	539	382	401	413	514
Year 9	2027	10,867	572	388	483	425	554
Year 10	2028	11,535	607	394	581	436	599
10-Year Increase		5,225	275	59	490	109	320
Projected Revenue		\$1,497,219	\$61,564	\$813	\$46,516	\$4,105	\$38,594

Projected Fee Revenue	\$1,648,811
Total Expenditures	\$1,651,368
Verrado Deficit	\$0

South Service Area

In accordance with state law, this report includes an IIP for Library Facilities needed to accommodate new development in the South Service Area. Projected fee revenue shown in Figure L12 is based on the development projections in the *Land Use Assumptions* document and the updated development fees for Library Facilities. If development in the South Service Area occurs at a more rapid rate than projected, the demand for infrastructure will increase and development fee revenue will increase at a corresponding rate. If development occurs at a slower rate than is projected, the demand for infrastructure will also decrease, along with development fee revenue. Projected development fee revenue is \$3.44 million over the next 10 years, and the projected growth-related cost of library facilities is \$3.82 million. While demand generated by Verrado is included in the analysis, infrastructure costs generated by Verrado cannot be captured through development fees due to a development agreement.

Figure L12: Projected Library Facilities Development Fee Revenue – South Service Area

Fee Component	Growth Share	Existing Share	Total
Library Facilities	\$3,804,432	\$0	\$3,804,432
Development Fee Report	\$20,398	\$0	\$20,398
Total	\$3,824,830	\$0	\$3,824,830

		Single Family \$289 per unit	Multi-Family \$225 per unit	Industrial \$14 per KSF	Commercial \$96 per KSF	Institutional \$38 per KSF	Office & Other \$121 per KSF
Year		Housing Units	Housing Units	KSF	KSF	KSF	KSF
Base	2018	17,572	925	3,612	1,646	1,404	1,181
Year 1	2019	18,416	969	3,635	1,807	1,430	1,268
Year 2	2020	19,295	1,016	3,659	1,983	1,456	1,363
Year 3	2021	20,212	1,064	3,682	2,174	1,484	1,465
Year 4	2022	21,167	1,114	3,706	2,383	1,509	1,574
Year 5	2023	22,162	1,166	3,729	2,610	1,537	1,692
Year 6	2024	23,198	1,221	3,756	2,857	1,565	1,818
Year 7	2025	24,277	1,278	3,779	3,124	1,593	1,954
Year 8	2026	25,402	1,337	3,806	3,414	1,622	2,100
Year 9	2027	26,573	1,399	3,829	3,727	1,651	2,257
Year 10	2028	27,794	1,463	3,856	4,064	1,681	2,425
10-Year Increase		10,222	538	244	2,418	277	1,244
Projected Revenue		\$2,929,847	\$120,469	\$3,375	\$229,896	\$10,487	\$150,154

Projected Fee Revenue	\$3,444,228
Total Expenditures	\$3,824,830
Verrado Deficit	\$380,602

Total

Total projected fee revenue shown in Figure L13 is based on the development projections for the North Service Area shown in Figure L11 and the South Service Area shown in Figure L12. If development occurs at a more rapid rate than projected, the demand for infrastructure will increase and development fee revenue will increase at a corresponding rate. If development occurs at a slower rate than is projected, the demand for infrastructure will also decrease, along with development fee revenue. Projected development fee revenue is \$5.09 million over the next 10 years, and the projected growth-related cost of library facilities is \$5.48 million. While demand generated by Verrado is included in the analysis, infrastructure costs generated by Verrado cannot be captured through development fees due to a development agreement.

Figure L13: Projected Library Facilities Development Fee Revenue – Total

Fee Component	Growth Share	Existing Share	Total
Library Facilities	\$5,447,250	\$0	\$5,447,250
Development Fee Report	\$28,948	\$0	\$28,948
Total	\$5,476,198	\$0	\$5,476,198

Year	Single Family	Multi-Family	Industrial	Commercial	Institutional	Office & Other
	Housing Units	Housing Units	KSF	KSF	KSF	KSF
Base 2018	23,882	1,257	3,947	1,737	1,732	1,459
Year 1 2019	25,124	1,322	3,976	1,917	1,767	1,569
Year 2 2020	26,424	1,391	4,006	2,115	1,803	1,688
Year 3 2021	27,787	1,463	4,035	2,334	1,840	1,816
Year 4 2022	29,215	1,538	4,064	2,574	1,877	1,953
Year 5 2023	30,711	1,616	4,094	2,840	1,916	2,101
Year 6 2024	32,277	1,699	4,126	3,134	1,954	2,259
Year 7 2025	33,919	1,785	4,156	3,458	1,994	2,430
Year 8 2026	35,638	1,876	4,188	3,815	2,035	2,613
Year 9 2027	37,440	1,971	4,217	4,210	2,076	2,811
Year 10 2028	39,329	2,070	4,250	4,645	2,118	3,023
10-Year Increase	15,447	813	303	2,908	386	1,564
Projected Revenue	\$4,427,066	\$182,033	\$4,188	\$276,412	\$14,592	\$188,748

Projected Fee Revenue	\$5,093,039
Total Expenditures	\$5,476,198
Verrado Deficit	\$380,602

PARKS AND RECREATIONAL FACILITIES IIP

ARS § 9-463.05 (T)(7)(g) defines the facilities and assets that can be included in the Parks and Recreational Facilities IIP:

“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.”

The Parks and Recreational Facilities IIP includes components for community park improvements, community park land, pools, regional parks, regional trails, community centers, and the cost of preparing the Parks and Recreational Facilities IIP and related Development Fee Report. The incremental expansion methodology, based on the current level of service, is used for community park improvements south of I-10, regional parks, regional trails, and community centers components. A plan-based methodology is used for community park land north of I-10, pools, and the Development Fee Report.

Proportionate Share

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Parks and Recreational Facilities IIP and development fees will allocate the cost of public services between residential and nonresidential based on daytime population. Based on 2015 estimates from the U.S. Census Bureau’s OnTheMap web application applied to 2015 employment, 7,617 inflow commuters traveled to Buckeye for work in 2015. The proportionate share is based on cumulative impact days per year with residents potentially impacting parks and recreational facilities 365 days per year. Inflow commuters potentially impact parks and recreational facilities 200 days per year, assuming four workdays per week multiplied by 50 weeks per year. For parks and recreational facilities, residential development generates 94 percent of demand and nonresidential development generates the remaining six percent of demand.

Figure PR1: Daytime Population

Development Type	Service Unit	Impact Days per Year	Total Impact Days per Year	Proportionate Share
Residential	67,029 residents	365 days	24,465,585	94%
Nonresidential	7,617 inflow commuters	200 days	1,523,356	6%
Total			25,988,941	100%

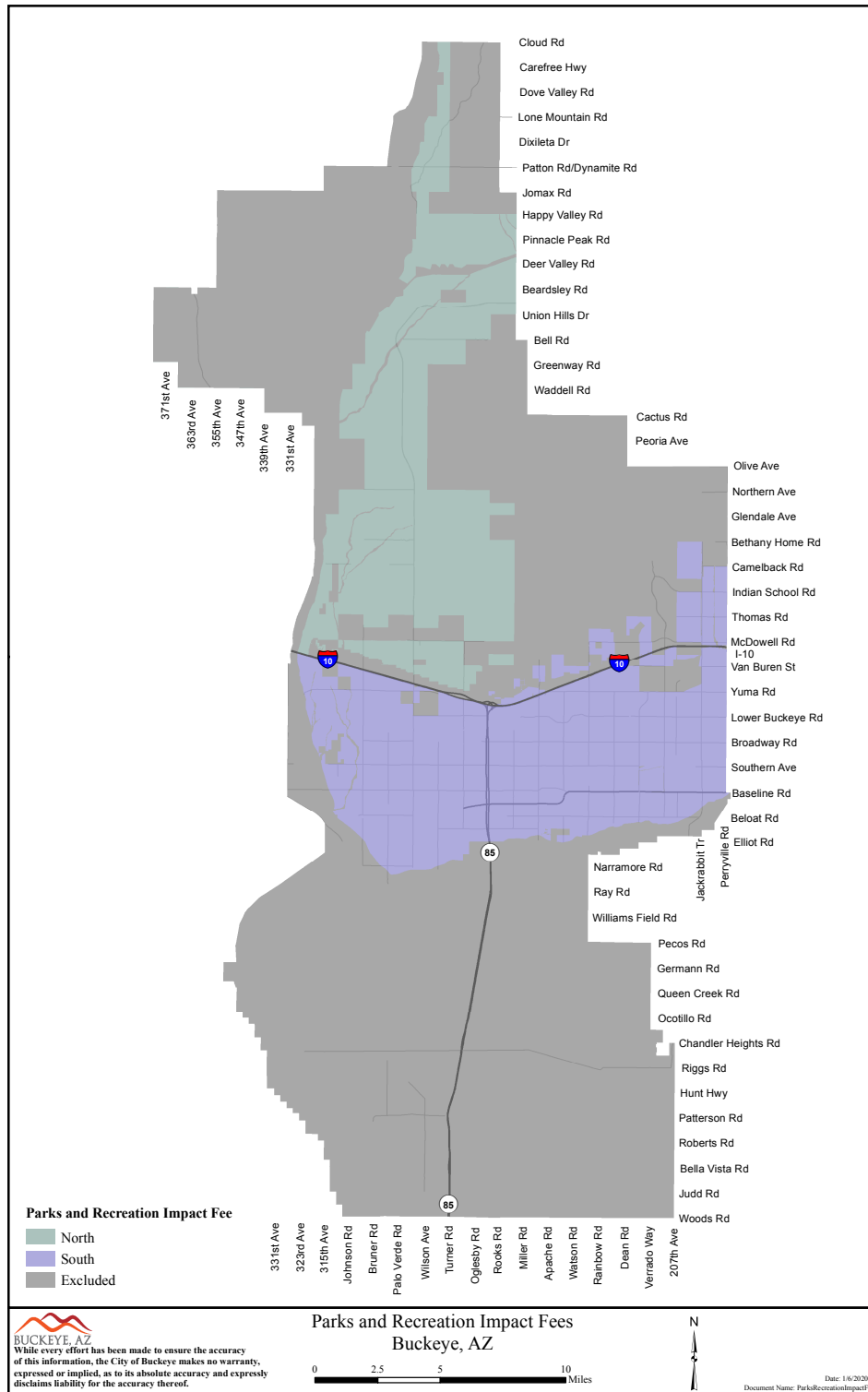
Nonresidential Impact Days = 4 days per week X 50 weeks per year

Service Area

Buckeye currently provides community parks and pools in the South Service Area, but it does not provide community parks or pools in the North Service Area. Any parks and recreational facilities in the North Service Area are owned and operated by home owners associations or private interests and provide no public benefit. Within the next 10 years, Buckeye plans to acquire 30 acres of land for a community park in the North Service Area, and it plans to construct additional community park improvements and a pool in the South Service Area. Buckeye plans to provide a uniform level of service and equal access to regional parks, regional trails, and community centers within the city limits – these components are included in both the North Service Area and the South Service Area.

Service areas for the Parks and Recreational Facilities IIP are shown in Figure PR2. It is anticipated that in the future a detailed community center facilities master plan may be generated for the City’s growth areas. In the event a future community center facilities master plan determines that the community centers planned for the two services areas within the City are inadequate to insure that community centers provide a “direct benefit” as defined in the City Code, then a different methodology may be utilized by the City and the number of service areas may be modified.

Figure PR2: Parks and Recreational Service Areas



RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT

ARS § 9-463.05(E)(4) requires:

“A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial.”

Figure PR3 displays the demand indicators for residential and nonresidential land uses. For residential development, the table displays the number of persons per household. For nonresidential development, the table displays the number of employees per thousand square feet of floor area.

Figure PR3: Ratio of Service Unit to Development Unit

Residential Development	
Development Type	Persons per Household ¹
Single-Family Unit	3.20
Multi-Family Unit	2.50
Age-Restricted Unit	2.00

Nonresidential Development	
Development Type	Jobs per 1,000 Sq Ft ¹
Industrial	0.34
Commercial	2.34
Institutional	0.93
Office & Other Services	2.97

1. TischlerBise Land Use Assumptions

ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES

ARS § 9-463.05(E)(1) requires:

“A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.”

ARS § 9-463.05(E)(2) requires:

“An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.”

Community Park Land (North) – Plan-Based

Buckeye currently provides no community parks in the North Service Area. Any community or neighborhood park facilities in the North Service Area are owned and operated by home owners associations or private interests and provide no public benefit. Within the next 10 years, Buckeye plans to acquire 30 acres of land for a community park in the North Service Area. To ensure future development does not pay for a higher level of service than provided to existing development, costs for the community park land are allocated to all development in 2028.

To allocate the proportionate share of demand for community park land to residential and nonresidential development in the North Service Area, this analysis uses daytime population shown in Figure PR1. Buckeye’s planned LOS for residential development is approximately 0.0008 acres per person (30.0 acres X 94 percent residential share / 36,033 persons in 2028). For nonresidential development, the planned LOS is approximately 0.0005 acres per job (30.0 acres X 6.0 percent nonresidential share / 3,677 jobs in 2028).

The cost to acquire land is \$80,000 per acre. For community park land in the North service area, the cost is \$62.61 per person (0.0008 acres per person X \$80,000 per acre) and \$39.16 per job (0.0005 acres per job X \$80,000 per acre). This component of the Parks and Recreational Facilities IIP will be assessed only in the North Service Area.

Figure PR4: Planned Level of Service

Description	Acres ¹
Future Community Park	30

Cost Allocation Factors	
Cost per Acre - Land Acquisition ¹	\$80,000
Cost per Acre - Improvements ²	\$0
Cost per Acre - Total	\$80,000

Level-of-Service (LOS) Standards	
Planned Acres	30
Residential	
Proportionate Share	94%
2028 Peak Population - North	36,033
Acres per Person	0.0008
Cost per Person	\$62.61
Nonresidential	
Proportionate Share	6%
2028 Jobs - North	3,677
Acres per Job	0.0005
Cost per Job	\$39.16

1. Community Services Department, City of Buckeye, Arizona.
2. No park improvements are included in the North Service Area.

Community Park Improvements (South) – Incremental Expansion

Shown in Figure PR5, Buckeye’s existing park inventory in the South Service Area includes 56.0 acres of community park improvements. The definition of necessary public services for Parks and Recreational Facilities includes parks or facilities on real property up to 30 acres in area, or parks and facilities larger than 30 acres if the facilities provide a direct benefit to the development. Sundance Park currently includes 30 improved acres, and Buckeye plans to expand this park since it will provide a direct benefit to development. To allocate the proportionate share of demand for community park improvements to residential and nonresidential development in the South Service Area, this analysis uses daytime population. Buckeye’s existing LOS for residential development is 0.0008 improved acres per person (56.0 acres X 94 percent residential share / 65,829 persons). For nonresidential development, the existing LOS is 0.0003 improved acres per job (56.0 acres X 6.0 percent nonresidential share / 10,396 jobs).

Since Buckeye owns undeveloped park land, the analysis excludes land acquisition costs. Buckeye’s Community Services Department provided a cost of \$410,000 per improved acre. For community parks in the South Service Area, the cost is \$327.86 per person (0.0008 improved acres per person X \$410,000 per improved acre) and \$132.51 per job (0.0003 improved acres per job X \$410,000 per improved acre). This component of the Parks and Recreational Facilities IIP will be assessed only in the South Service Area.

Figure PR5: Existing Level of Service

Description	Acres ¹
Earl Edgar Park	26
Sundance Park	30
Total	56

Cost Allocation Factors	
Cost per Acre - Land Acquisition ¹	\$0
Cost per Acre - Improvements ²	\$410,000
Cost per Acre - Total	\$410,000

Level-of-Service (LOS) Standards	
Existing Improved Acres	56
Residential	
Proportionate Share	94%
2018 Peak Population - South	65,829
Improved Acres per Person	0.0008
Cost per Person	\$327.86
Nonresidential	
Proportionate Share	6%
2018 Jobs - South	10,396
Improved Acres per Job	0.0003
Cost per Job	\$132.51

1. Buckeye will use existing, undeveloped park land.
2. Community Services Department, City of Buckeye, Arizona.

Pools (South) – Plan-Based

Buckeye currently provides one pool in the South Service Area. As shown in the 2014 Infrastructure Improvements Plan, Buckeye plans to construct an additional pool by 2023 to accommodate growth. The existing pool in downtown Buckeye has increased demand due to growth and is often at capacity with swim lesson classes full with waitlists to participate. During open swim, residents are turned away once the bathing capacity reaches 450 people.

To allocate the proportionate share of demand for pools to residential and nonresidential development in the South Service Area, this analysis uses daytime population shown in Figure PR1. To ensure future development does not pay for a higher level of service than provided to existing development, costs for the planned pool are allocated to all development in 2023. Buckeye’s planned LOS for residential development is approximately 0.000023 pools per person (2.0 pools X 94 percent residential share / 82,932 persons in 2023). For nonresidential development, the planned LOS is approximately 0.000008 pools per job (2.0 pools X 6.0 percent nonresidential share / 14,451 jobs in 2023).

Based on recent projects and estimates provided by the City's Construction & Procurement Division, the City uses a cost of \$5,275,152 for construction – this excludes land acquisition costs. For pools in the South Service Area, the cost is \$119.58 per person (0.000023 pools per person X \$5,275,152 per pool) and \$43.80 per job (0.000008 pools per job X \$5,275,152 per pool). This component of the Parks and Recreational Facilities IIP will be assessed only in the South Service Area.

Figure PR6: Planned Level of Service

Description	Units
Planned Pool	1
Cost Allocation Factors	
Planned Pool Cost ¹	\$5,275,152
Level-of-Service (LOS) Standards	
Pools in 2023	2
Residential	
Proportionate Share	94%
2023 Peak Population - South	82,932
Pools per Person	0.000023
Cost per Person	\$119.58
Nonresidential	
Proportionate Share	6%
2023 Jobs - South	14,451
Pools per Job	0.000008
Cost per Job	\$43.80

1. Community Services Department, City of Buckeye, Arizona.

The legislation for Senate Bill 1525 prohibits aquatic centers but allows swimming pools, however no definition is provided in the Enabling Legislation. The City of Chandler’s System Development Fee Update (2018) references the Arizona League of Cities and Towns proposed definition of an aquatic center to provide clarification:

“An aquatic center is a facility designed to host non-recreational competitive functions generally occurring within water; including, 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.”

The pool will be constructed in Town Park, adjacent to Buckeye’s current pool, to keep costs as low as possible. The pool will service the South Service Area and will be designed and built to be in alignment with the Arizona League of Cities and Towns language above. As a necessary function of the pool, the construction of a new building could be needed that may include changing rooms, restrooms, storage for pool equipment and chemicals, concession area, parking, etc.

Regional Parks – Incremental Expansion

Buckeye will use development fees collected in the North Service Area and the South Service Area to expand Skyline Regional Park which currently includes 15.0 improved acres. As previously discussed, daytime population is used to allocate the proportionate share of demand to residential and nonresidential development. Buckeye’s existing level of service for residential development is 0.0002 improved acres per person (15.0 improved acres X 94 percent residential share / 84,426 persons). The nonresidential level of service is 0.0001 improved acres per job (15.0 improved acres X 6.0 percent nonresidential share / 11,856 jobs).

The cost to develop regional parks is \$480,000 per improved acre and includes two components: land acquisition and improvements. Buckeye’s Community Services Department uses a land acquisition cost of \$80,000 per acre and an improvement cost of \$400,000 per acre. For regional parks, the cost is \$80.16 per person (0.0002 improved acres per person X \$480,000 per improved acre) and \$36.44 per job (0.0001 improved acres per job X \$480,000 per improved acre).

Figure PR7: Existing Level of Service

Cost Allocation Factors	
Cost per Acre - Land Acquisition ¹	\$80,000
Cost per Acre - Improvements ¹	\$400,000
Cost per Acre - Total	\$480,000

Level-of-Service (LOS) Standards	
Existing Improved Acres	15
Residential	
Proportionate Share	94%
2018 Peak Population - City	84,426
Improved Acres per Person	0.0002
Cost per Person	\$80.16
Nonresidential	
Proportionate Share	6%
2018 Jobs - City	11,856
Improved Acres per Job	0.0001
Cost per Job	\$36.44

1. Community Services Department, City of Buckeye, Arizona.

Regional Trails – Incremental Expansion

Buckeye will use development fees collected in the North and South service areas to expand its network of regional trails. Currently, Buckeye has 22.0 miles of regional trails located in Skyline Regional Park. This analysis uses daytime population to allocate the proportionate share of demand to residential and nonresidential development. Buckeye’s existing level of service for residential development is 0.0002 miles per person (22.0 miles X 94 percent residential share / 84,426 persons). The nonresidential level of service is 0.0001 miles per job (22.0 miles X 6.0 percent nonresidential share / 11,856 jobs).

Buckeye’s Community Services Department uses a regional trail cost of \$75,000 per mile. For regional trails, the cost is \$18.37 per person (0.0002 miles per person X \$75,000 per mile) and \$8.35 per job (0.0001 miles per job X \$75,000 per mile).

Figure PR8: Existing Level of Service

Cost Allocation Factors	
Cost per Mile ¹	\$75,000

Level-of-Service (LOS) Standards	
Total Miles	22
Residential	
Proportionate Share	94%
2018 Peak Population - City	84,426
Miles per Person	0.0002
Cost per Person	\$18.37
Nonresidential	
Proportionate Share	6%
2018 Jobs - City	11,856
Miles per Job	0.0001
Cost per Job	\$8.35

1. Community Services Department, City of Buckeye, Arizona.

Community Centers – Incremental Expansion

Shown below in Figure PR9, Buckeye’s existing Parks and Recreational Facilities include 17,124 square feet of community centers. The Enabling Legislation limits park facilities to three thousand square feet. Since an average size community center in Buckeye is 5,708 square feet, the analysis uses an adjustment factor of 53 percent to reduce the average size community center to 3,000 square feet. When the adjustment factor is applied to the total square footage, Buckeye has 9,000 eligible square feet (17,124 total square feet X 53 percent adjustment factor) resulting in an average size community center of 3,000 square feet (9,000 eligible square feet / three community centers).

Figure PR9: Existing Community Centers

Description	Square Feet
Buckeye Community Center	7,976
Dr. Saide Community Center	8,013
Sundance Crossings	1,135
Total	17,124

Average Size	5,708
Eligible (per Community Center)	3,000
Adjustment Factor (Eligible / Avg)	53%
Eligible Square Feet	9,000

Land Use Assumptions, Infrastructure Improvements Plan, and Development Fee Report

Buckeye, Arizona

This analysis uses daytime population to allocate the proportionate share of demand to residential and nonresidential development. Buckeye’s eligible citywide LOS for residential development is 0.1002 square feet per person (9,000 eligible square feet X 94 percent residential share / 84,426 persons). For nonresidential development, the existing LOS is 0.0455 eligible square feet per job (9,000 eligible square feet X 6.0 percent nonresidential share / 11,856 jobs).

Buckeye’s Community Services Department provided a cost factor of \$513 per square foot – this excludes the cost of land. The analysis assumes future community centers built in the North service Area and the South Service Area will have a similar capital cost per square foot – locations for potential future community centers are dependent on where development occurs and may be identified in a future community center facilities master plan. For community centers, the cost is \$51.41 per person (0.1002 eligible square feet per person X \$513 per square foot) and \$23.37 per job (0.0455 eligible square feet per job X \$513 per square foot).

Figure PR10: Existing Level of Service

Cost Allocation Factors	
Cost per Square Foot ¹	\$513

Level-of-Service (LOS) Standards	
Eligible Square Feet	9,000
Residential	
Proportionate Share	94%
2018 Peak Population - City	84,426
Square Feet per Person	0.1002
Cost per Person	\$51.41
Nonresidential	
Proportionate Share	6%
2018 Jobs - City	11,856
Square Feet per Job	0.0455
Cost per Job	\$23.37

1. Community Services Department, City of Buckeye, Arizona.

Development Fee Report – Plan-Based

The cost to prepare the Parks and Recreational Facilities IIP and development fees totals \$28,948. Buckeye plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of new development from the *Land Use Assumptions* document, the cost is \$1.11 per person and \$0.36 per job.

Figure PR11: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Increase	Cost per Service Unit
Fire	\$28,948	Residential	82%	Peak Population	24,575	\$0.97
		Nonresidential	18%	Jobs	4,825	\$1.08
Library	\$28,948	Residential	94%	Peak Population	24,575	\$1.11
		Nonresidential	6%	Jobs	4,823	\$0.36
Parks and Recreational	\$28,948	Residential	94%	Peak Population	24,575	\$1.11
		Nonresidential	6%	Jobs	4,823	\$0.36
Police	\$28,948	Residential	82%	Peak Population	24,575	\$0.97
		Nonresidential	18%	Vehicle Trip	18,743	\$0.28
Street	\$28,948	All Development	100%	VMT	209,168	\$0.14
Total	\$144,740					

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(5) requires:

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

ARS § 9-463.05(E)(6) requires:

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

As shown in the *Land Use Assumptions* document, Buckeye’s citywide peak population is expected to increase by an additional 55,583 persons and employment is expected to increase by 12,260 jobs over the next 10 years. In the North Service Area, population is expected to increase by 17,436 persons and employment is expected to increase by 2,217 jobs during the same period. In the South Service Area, population is expected to increase by 38,147 persons and employment is expected to increase by 10,043 jobs during the same period.

Community Park Land (North)

Within the next 10 years, Buckeye plans to acquire land for a 30-acre community park in the North Service Area. Based on a projected peak population increase of 17,436 persons, Buckeye’s future residential development demands 13.6 acres of community park land (17,436 additional persons X 0.0008 acres per person). Future nonresidential development demands 1.1 acre of community park land (2,217 additional jobs X 0.0005 acres per job) over the next 10 years. Future development in the North Service Area demands approximately 14.7 acres of land for the planned community park at a cost of approximately \$1.18 million (14.7 acres X \$80,000 per acre).

Existing residential development demands 14.6 acres (18,597 persons X 0.0008 acres per person) of community park land and existing nonresidential development demands less than one acre (1,460 jobs X 0.0005 acres per job). Existing development’s share of land for the planned community park is approximately \$1.22 million (15.3 acres X \$80,000 per acre).

Figure PR12: Projected Demand for Community Park Land (North)

Type of Infrastructure	Level of Service		Service Unit	Unit Cost
Community Park Land	Residential	0.0008 Acres	per Person	\$80,000
	Nonresidential	0.0005 Acres	per Job	

Growth-Related Need for Community Park Land						
Year		Peak Population	Jobs	Acres		
				Residential	Nonresidential	Total
Base	2018	18,597	1,460	14.6	0.7	15.3
Year 1	2019	19,925	1,581	15.6	0.8	16.4
Year 2	2020	21,329	1,715	16.7	0.8	17.5
Year 3	2021	22,819	1,865	17.9	0.9	18.8
Year 4	2022	24,398	2,036	19.1	1.0	20.1
Year 5	2023	26,069	2,228	20.4	1.1	21.5
Year 6	2024	27,838	2,446	21.8	1.2	23.0
Year 7	2025	29,715	2,695	23.3	1.3	24.6
Year 8	2026	31,699	2,978	24.8	1.5	26.3
Year 9	2027	33,804	3,303	26.5	1.6	28.1
Year 10	2028	36,033	3,677	28.2	1.8	30.0
10-Year Increase		17,436	2,217	13.6	1.1	14.7

Growth-Related Expenditures	\$1,091,655	\$86,823	\$1,178,478
Existing Share of Expenditures	\$1,164,345	\$57,177	\$1,221,522
Total Expenditures	\$2,256,000	\$144,000	\$2,400,000

Community Park Improvements (South)

Buckeye plans to maintain its current level of service for community park improvements in the South Service Area. Based on a projected peak population increase of 38,147 persons, Buckeye’s future residential development demands 30.5 additional acres of community park improvements (38,147 additional persons X 0.0008 improved acres per person). Future nonresidential development demands 3.2 additional acres of community park improvements (10,043 additional jobs X 0.0003 improved acres per job) over the next 10 years. Future development in the South Service Area demands approximately 33.8 additional acres of community park improvements over the next 10 years at a cost of approximately \$13.84 million.

Figure PR13: Projected Demand for Community Park Improvements (South)

Type of Infrastructure	Level of Service			Service Unit	Unit Cost
Community Park Improvements	Residential	0.0008	Improved Acres	per Person	\$410,000
	Nonresidential	0.0003	Improved Acres	per Job	

Growth-Related Need for Community Park Improvements						
Year		Peak Population	Jobs	Improved Acres		
				Residential	Nonresidential	Total
Base	2018	65,829	10,396	52.6	3.4	56.0
Year 1	2019	68,971	11,083	55.2	3.6	58.7
Year 2	2020	72,246	11,830	57.8	3.8	61.6
Year 3	2021	75,663	12,637	60.5	4.1	64.6
Year 4	2022	79,223	13,507	63.4	4.4	67.7
Year 5	2023	82,932	14,451	66.3	4.7	71.0
Year 6	2024	86,799	15,471	69.4	5.0	74.4
Year 7	2025	90,831	16,573	72.6	5.4	78.0
Year 8	2026	95,032	17,766	76.0	5.7	81.7
Year 9	2027	99,412	19,051	79.5	6.2	85.7
Year 10	2028	103,976	20,439	83.1	6.6	89.8
10-Year Increase		38,147	10,043	30.5	3.2	33.8

Growth-Related Expenditures	\$12,506,704	\$1,330,823	\$13,837,527
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Pools (South)

Within the next five years, Buckeye plans to construct an additional pool in the South Service Area. Based on a projected peak population increase of 17,103 persons, Buckeye’s future residential development demands 0.39 additional pools (17,103 additional persons X 0.000023 pools per person). Future nonresidential development demands 0.03 additional pools (4,055 additional jobs X 0.000008 pools per job) over the next five years. Future development in the South Service Area demands approximately 42 percent of the planned pool with a growth-related cost of approximately \$2.22 million.

Existing residential development demands 1.49 pools (65,829 persons X 0.000023 pools per person) and existing nonresidential development demands approximately 0.09 pools (10,396 jobs X 0.000008 pools per job). Since Buckeye currently has one pool, existing development currently demands 0.58 additional pools (1.58 pools demanded by existing development – 1.0 pool available to existing development). Existing development’s share of the planned pool is approximately \$3.05 million (0.58 pools X \$5,275,152 per pool). After deducting the existing fund balance collected for pools, existing development’s share is approximately \$2.14 million.

Figure PR14: Projected Demand for Pools (South)

Type of Infrastructure	Level of Service		Service Unit	Unit Cost
Pools	Residential	0.000023 Pools	per Person	\$5,275,152
	Nonresidential	0.000008 Pools	per Job	

Growth-Related Need for Pools						
Year		Peak Population	Jobs	Pools		
				Residential	Nonresidential	Total
Base	2018	65,829	10,396	1.49	0.09	1.58
Year 1	2019	68,971	11,083	1.56	0.09	1.66
Year 2	2020	72,246	11,830	1.64	0.10	1.74
Year 3	2021	75,663	12,637	1.72	0.10	1.82
Year 4	2022	79,223	13,507	1.80	0.11	1.91
Year 5	2023	82,932	14,451	1.88	0.12	2.00
5-Year Increase		17,103	4,055	0.39	0.03	0.42

Growth-Related Expenditures	\$2,045,234	\$177,627	\$2,222,861
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Growth-Related Expenditures	\$2,222,861
Fund Balance March 2019	\$913,517
Existing Share of Expenditures	\$2,138,774
Total Expenditures	\$5,275,152

Regional Parks

Buckeye plans to maintain its current level of service for regional parks over the next 10 years. Based on a projected citywide peak population increase of 55,583 persons, Buckeye’s future residential development demands 9.3 additional acres of regional parks (55,583 additional persons X 0.0002 improved acres per person). Future nonresidential development demands 0.9 additional acres of regional parks (12,260 additional jobs X 0.0001 improved acres per job) over the next 10 years. Future development citywide demands approximately 10.2 additional improved acres of regional parks over the next 10 years at a cost of approximately \$4.90 million.

Figure PR15: Projected Demand for Regional Parks

Type of Infrastructure	Level of Service		Service Unit	Unit Cost
Regional Parks	Residential	0.0002 Improved Acres	per Person	\$480,000
	Nonresidential	0.0001 Improved Acres	per Job	

Growth-Related Need for Regional Parks						
Year		Peak Population	Jobs	Improved Acres		
				Residential	Nonresidential	Total
Base	2018	84,426	11,856	14.1	0.9	15.0
Year 1	2019	88,896	12,664	14.8	1.0	15.8
Year 2	2020	93,575	13,545	15.6	1.0	16.7
Year 3	2021	98,482	14,502	16.4	1.1	17.5
Year 4	2022	103,621	15,543	17.3	1.2	18.5
Year 5	2023	109,001	16,679	18.2	1.3	19.5
Year 6	2024	114,637	17,917	19.1	1.4	20.5
Year 7	2025	120,546	19,268	20.1	1.5	21.6
Year 8	2026	126,731	20,744	21.2	1.6	22.7
Year 9	2027	133,216	22,354	22.2	1.7	23.9
Year 10	2028	140,009	24,116	23.4	1.8	25.2
10-Year Increase		55,583	12,260	9.3	0.9	10.2

Growth-Related Expenditures	\$4,455,804	\$446,721	\$4,902,525
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Regional Trails

Buckeye plans to maintain its current level of service for regional trails over the next 10 years. Based on a projected citywide peak population increase of 55,583 persons, Buckeye’s future residential development demands 13.6 additional miles of regional trails (55,583 additional persons X 0.0002 miles per person). Future nonresidential development demands 1.4 additional miles of regional trails (12,260 additional jobs X 0.0001 miles per job) over the next 10 years. Future development citywide demands approximately 15.0 additional miles of regional trails over the next 10 years at a cost of approximately \$1.12 million.

Figure PR16: Projected Demand for Regional Trails

Type of Infrastructure	Level of Service		Service Unit	Unit Cost
Regional Trails	Residential	0.0002 Miles	per Person	\$75,000
	Nonresidential	0.0001 Miles	per Job	

Growth-Related Need for Regional Trails						
Year		Peak Population	Jobs	Miles		
				Residential	Nonresidential	Total
Base	2018	84,426	11,856	20.7	1.3	22.0
Year 1	2019	88,896	12,664	21.8	1.4	23.2
Year 2	2020	93,575	13,545	22.9	1.5	24.4
Year 3	2021	98,482	14,502	24.1	1.6	25.7
Year 4	2022	103,621	15,543	25.4	1.7	27.1
Year 5	2023	109,001	16,679	26.7	1.9	28.6
Year 6	2024	114,637	17,917	28.1	2.0	30.1
Year 7	2025	120,546	19,268	29.5	2.1	31.7
Year 8	2026	126,731	20,744	31.0	2.3	33.4
Year 9	2027	133,216	22,354	32.6	2.5	35.1
Year 10	2028	140,009	24,116	34.3	2.7	37.0
10-Year Increase		55,583	12,260	13.6	1.4	15.0

Growth-Related Expenditures	\$1,021,122	\$102,373	\$1,123,495
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Community Centers (North)

Buckeye plans to maintain its citywide level of service for community centers over the next 10 years. Based on a projected peak population increase of 17,436 persons in the North Service Area, Buckeye’s future residential development demands 1,747 additional square feet of community centers (17,436 additional persons X 0.1002 eligible square feet per person). Future nonresidential development demands 101 additional square feet of community centers (2,217 additional jobs X 0.0455 eligible square feet per job) over the next 10 years. Future development in the North Service Area demands 1,848 additional square feet of community centers over the next 10 years at a cost of approximately \$0.95 million.

Figure PR17: Projected Demand for Community Centers (North)

Type of Infrastructure	Level of Service			Service Unit	Unit Cost
Community Centers	Residential	0.1002	Square Feet	per Person	\$513
	Nonresidential	0.0455	Square Feet	per Job	

Growth-Related Need for Community Centers						
Year		Peak Population	Jobs	Square Feet		
				Residential	Nonresidential	Total
Base	2018	18,597	1,460	1,864	66	1,930
Year 1	2019	19,925	1,581	1,997	72	2,069
Year 2	2020	21,329	1,715	2,137	78	2,215
Year 3	2021	22,819	1,865	2,287	85	2,372
Year 4	2022	24,398	2,036	2,445	93	2,538
Year 5	2023	26,069	2,228	2,612	101	2,714
Year 6	2024	27,838	2,446	2,790	111	2,901
Year 7	2025	29,715	2,695	2,978	123	3,100
Year 8	2026	31,699	2,978	3,176	136	3,312
Year 9	2027	33,804	3,303	3,387	150	3,538
Year 10	2028	36,033	3,677	3,611	167	3,778
10-Year Increase		17,436	2,217	1,747	101	1,848

Growth-Related Expenditures	\$896,310	\$51,801	\$948,111
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Community Centers (South)

Buckeye plans to maintain its citywide level of service for community centers over the next 10 years. Based on a projected peak population increase of 38,147 persons in the South Service Area, Buckeye’s future residential development demands 3,823 additional square feet of community centers (38,147 additional persons X 0.1002 eligible square feet per person). Future nonresidential development demands 457 additional square feet of community centers (10,043 additional jobs X 0.0455 eligible square feet per job) over the next 10 years. Future development in the South Service Area demands 4,280 additional square feet of community centers over the next 10 years at a cost of approximately \$2.20 million.

Figure PR18: Projected Demand for Community Centers (South)

Type of Infrastructure	Level of Service			Service Unit	Unit Cost
Community Centers	Residential	0.1002	Square Feet	per Person	\$513
	Nonresidential	0.0455	Square Feet	per Job	

Growth-Related Need for Community Centers						
Year		Peak Population	Jobs	Square Feet		
				Residential	Nonresidential	Total
Base	2018	65,829	10,396	6,596	474	7,070
Year 1	2019	68,971	11,083	6,911	505	7,416
Year 2	2020	72,246	11,830	7,239	539	7,778
Year 3	2021	75,663	12,637	7,582	576	8,157
Year 4	2022	79,223	13,507	7,939	615	8,554
Year 5	2023	82,932	14,451	8,310	658	8,968
Year 6	2024	86,799	15,471	8,698	705	9,402
Year 7	2025	90,831	16,573	9,102	755	9,857
Year 8	2026	95,032	17,766	9,523	809	10,332
Year 9	2027	99,412	19,051	9,962	868	10,829
Year 10	2028	103,976	20,439	10,419	931	11,350
10-Year Increase		38,147	10,043	3,823	457	4,280

Growth-Related Expenditures	\$1,960,974	\$234,659	\$2,195,633
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PARKS AND RECREATIONAL FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is not necessary for Parks and Recreational Facilities development fees, because costs generated by projected development exceed revenues generated by projected development. Appendix A contains the forecast of revenues required by Arizona’s Enabling Legislation (ARS § 9-463.05(E)(7)).

Parks and Recreational Facilities Development Fees - North Service Area

Infrastructure components and cost factors for Parks and Recreational Facilities in the North Service Area are summarized in the upper portion of Figure PR19. The cost per service unit for Parks and Recreational Facilities is \$213.65 per person and \$107.67 per job.

Parks and Recreational Facilities development fees for residential development are assessed according to the number of persons per household. For example, the single-family fee of \$684 is calculated using a cost per service unit of \$213.65 per person multiplied by a demand unit of 3.20 persons per household.

Nonresidential development fees are calculated using jobs as the service unit. The fee of \$252 per 1,000 square feet of commercial development is derived from a cost per service unit of \$107.67 per job multiplied by a demand unit of 2.34 jobs per 1,000 square feet.

Figure PR19: Schedule of Parks and Recreational Facilities Development Fees – North Service Area

Fee Component	Cost per Person	Cost per Job
Community Park Land	\$62.61	\$39.16
Regional Parks	\$80.16	\$36.44
Regional Trails	\$18.37	\$8.35
Community Centers	\$51.41	\$23.37
Development Fee Report	\$1.11	\$0.36
Total	\$213.65	\$107.67

Residential Development	Development Fees per Unit			
Development Type	Persons per Household ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Single-Family Unit	3.20	\$684	\$0	\$684
Multi-Family Unit	2.50	\$534	\$0	\$534
Age-Restricted Unit	2.00	\$427	\$0	\$427

Nonresidential Development	Development Fees per 1,000 Square Feet			
Development Type	Jobs per 1,000 Sq Ft ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Industrial	0.34	\$37	\$0	\$37
Commercial	2.34	\$252	\$0	\$252
Institutional	0.93	\$100	\$0	\$100
Office & Other Services	2.97	\$320	\$0	\$320

1. TischlerBise Land Use Assumptions
2. Current Fees in North Service Area

Parks and Recreational Facilities Development Fees - South Service Area

Infrastructure components and cost factors for Parks and Recreational Facilities in the South Service Area are summarized in the upper portion of Figure PR20. The cost per service unit for Parks and Recreational Facilities is \$598.48 per person and \$244.82 per job.

Parks and Recreational Facilities development fees for residential development are assessed according to the number of persons per household. For example, the single-family fee of \$1,915 is calculated using a cost per service unit of \$598.48 per person multiplied by a demand unit of 3.20 persons per household.

Nonresidential development fees are calculated using jobs as the service unit. The fee of \$573 per 1,000 square feet of commercial development is derived from a cost per service unit of \$244.82 per job multiplied by a demand unit of 2.34 jobs per 1,000 square feet.

Figure PR20: Schedule of Parks and Recreational Facilities Development Fees – South Service Area

Fee Component	Cost per Person	Cost per Job
Community Park Improvements	\$327.86	\$132.51
Pools	\$119.58	\$43.80
Regional Parks	\$80.16	\$36.44
Regional Trails	\$18.37	\$8.35
Community Centers	\$51.41	\$23.37
Development Fee Report	\$1.11	\$0.36
Total	\$598.48	\$244.82

Residential Development	Development Fees per Unit			
Development Type	Persons per Household ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Single-Family Unit	3.20	\$1,915	\$1,374	\$541
Multi-Family Unit	2.50	\$1,496	\$1,074	\$422
Age-Restricted Unit	2.00	\$1,197	\$1,074	\$123

Nonresidential Development	Development Fees per 1,000 Square Feet			
Development Type	Jobs per 1,000 Sq Ft ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Industrial	0.34	\$83	\$49	\$34
Commercial	2.34	\$573	\$109	\$464
Institutional	0.93	\$228	\$54	\$174
Office & Other Services	2.97	\$727	\$182	\$545

1. TischlerBise Land Use Assumptions
2. Current Fees in Central East Service Area

PARKS AND RECREATIONAL FACILITIES DEVELOPMENT FEE REVENUE

Appendix A contains the forecast of revenues required by Arizona’s Enabling Legislation (ARS § 9-463.05(E)(7)).

North Service Area

Projected fee revenue for the North service area shown in Figure PR21 is based on the development projections in the *Land Use Assumptions* document and the updated development fees for Parks and Recreational Facilities shown in Figure PR19. If development occurs at a more rapid rate than projected, the demand for infrastructure will increase and development fee revenue will increase at a corresponding rate. If development occurs at a slower rate than projected, the demand for infrastructure will also decrease, along with development fee revenue. Projected development fee revenue in the North Service Area equals \$3.95 million, and projected expenditures equal \$5.17 million. Existing development’s share of \$1.22 million may not be funded with development fees.

Figure PR21: Projected Parks and Recreational Facilities Development Fee Revenue – North Service Area

Fee Component	Growth Share	Existing Share	Total
Community Park Land	\$1,178,478	\$1,221,522	\$2,400,000
Regional Parks	\$1,478,536	\$0	\$1,478,536
Regional Trails	\$338,831	\$0	\$338,831
Community Centers	\$948,111	\$0	\$948,111
Development Fee Report	\$8,550	\$0	\$8,550
Total	\$3,952,507	\$1,221,522	\$5,174,029

		Single Family \$684 per unit	Multi-Family \$534 per unit	Industrial \$37 per KSF	Commercial \$252 per KSF	Institutional \$100 per KSF	Office & Other \$320 per KSF
Year		Housing Units	Housing Units	KSF	KSF	KSF	KSF
Base	2018	6,310	332	335	91	328	279
Year 1	2019	6,708	353	341	110	338	301
Year 2	2020	7,129	375	347	132	347	325
Year 3	2021	7,575	399	353	159	357	350
Year 4	2022	8,048	424	359	192	368	378
Year 5	2023	8,549	450	365	231	378	408
Year 6	2024	9,079	478	371	278	389	441
Year 7	2025	9,642	507	376	334	401	476
Year 8	2026	10,236	539	382	401	413	514
Year 9	2027	10,867	572	388	483	425	554
Year 10	2028	11,535	607	394	581	436	599
10-Year Increase		5,225	275	59	490	109	320
Projected Revenue		\$3,561,786	\$146,455	\$2,150	\$123,107	\$10,853	\$102,072

Projected Fee Revenue	\$3,946,423
Existing Development Share	\$1,221,522
Total Expenditures	\$5,174,029
Verrado Deficit	\$0

South Service Area

Projected fee revenue for the South service area shown in Figure PR22 is based on the development projections in the *Land Use Assumptions* document and the updated development fees for Parks and Recreational Facilities shown in Figure PR20. If development occurs at a more rapid rate than projected, the demand for infrastructure will increase and development fee revenue will increase at a corresponding rate. If development occurs at a slower rate than is projected, the demand for infrastructure will also decrease, along with development fee revenue. If development occurs at a slower rate than projected, the demand for infrastructure will also decrease, along with development fee revenue. Projected development fee revenue in the South Service Area equals \$20.24 million – this excludes collection of the pools component of the fee beyond 2023. While demand generated by Verrado is included in the analysis, infrastructure costs generated by Verrado cannot be captured through development fees due to a development agreement. Existing development’s share of \$3.05 million may not be funded with development fees.

Figure PR22: Projected Parks and Recreational Facilities Development Fee Revenue – South Service Area

Fee Component	Growth Share	Existing Share	Total
Community Park Improvements	\$13,837,527	\$0	\$13,837,527
Pools	\$2,222,861	\$3,052,291	\$5,275,152
Regional Parks	\$3,423,989	\$0	\$3,423,989
Regional Trails	\$784,664	\$0	\$784,664
Community Centers	\$2,195,633	\$0	\$2,195,633
Development Fee Report	\$20,398	\$0	\$20,398
Total	\$22,485,072	\$3,052,291	\$25,537,363

		Single Family \$1,915 per unit	Multi-Family \$1,496 per unit	Industrial \$83 per KSF	Commercial \$573 per KSF	Institutional \$228 per KSF	Office & Other \$727 per KSF
Year		Housing Units	Housing Units	KSF	KSF	KSF	KSF
Base	2018	17,572	925	3,612	1,646	1,404	1,181
Year 1	2019	18,416	969	3,635	1,807	1,430	1,268
Year 2	2020	19,295	1,016	3,659	1,983	1,456	1,363
Year 3	2021	20,212	1,064	3,682	2,174	1,484	1,465
Year 4	2022	21,167	1,114	3,706	2,383	1,509	1,574
Year 5	2023	22,162	1,166	3,729	2,610	1,537	1,692
Year 6	2024	23,198	1,221	3,756	2,857	1,565	1,818
Year 7	2025	24,277	1,278	3,779	3,124	1,593	1,954
Year 8	2026	25,402	1,337	3,806	3,414	1,622	2,100
Year 9	2027	26,573	1,399	3,829	3,727	1,651	2,257
Year 10	2028	27,794	1,463	3,856	4,064	1,681	2,425
10-Year Increase		10,222	538	244	2,418	277	1,244
Projected Revenue		\$17,401,642	\$715,353	\$18,421	\$1,235,078	\$57,234	\$808,617

Projected Fee Revenue	\$20,236,345
Existing Development Share	\$3,052,291
Total Expenditures	\$25,537,363
Verrado Deficit	\$2,248,727

Total

Projected fee revenue for the North Service Area and the South Service Area shown in Figure PR23 is based on the development projections in the *Land Use Assumptions* document and the updated development fees for Parks and Recreational Facilities. If development occurs at a more rapid rate than projected, the demand for infrastructure will increase and development fee revenue will increase at a corresponding rate. If development occurs at a slower rate than is projected, the demand for infrastructure will also decrease, along with development fee revenue. Projected development fee revenue from both service areas is \$24.18 million, and the projected growth-related cost of Parks and Recreational Facilities is \$26.44 million. Existing development’s share of the planned community park land in the North Service Area and the planned pool in the South Service Area will require funding from sources other than development fees. While demand generated by Verrado is included in the analysis, infrastructure costs generated by Verrado cannot be captured through development fees due to a development agreement.

Figure PR23: Projected Parks and Recreational Facilities Development Fee Revenue – Total

Fee Component	Growth Share	Existing Share	Total
Community Park Improvements	\$13,837,527	\$0	\$13,837,527
Community Park Land	\$1,178,478	\$1,221,522	\$2,400,000
Pools	\$2,222,861	\$3,052,291	\$5,275,152
Regional Parks	\$4,902,525	\$0	\$4,902,525
Regional Trails	\$1,123,495	\$0	\$1,123,495
Community Centers	\$3,143,744	\$0	\$3,143,744
Development Fee Report	\$28,948	\$0	\$28,948
Total	\$26,437,579	\$4,273,813	\$30,711,392

Year	Single Family	Multi-Family	Industrial	Commercial	Institutional	Office & Other
	Housing Units	Housing Units	KSF	KSF	KSF	KSF
Base 2018	23,882	1,257	3,947	1,737	1,732	1,459
Year 1 2019	25,124	1,322	3,976	1,917	1,767	1,569
Year 2 2020	26,424	1,391	4,006	2,115	1,803	1,688
Year 3 2021	27,787	1,463	4,035	2,334	1,840	1,816
Year 4 2022	29,215	1,538	4,064	2,574	1,877	1,953
Year 5 2023	30,711	1,616	4,094	2,840	1,916	2,101
Year 6 2024	32,277	1,699	4,126	3,134	1,954	2,259
Year 7 2025	33,919	1,785	4,156	3,458	1,994	2,430
Year 8 2026	35,638	1,876	4,188	3,815	2,035	2,613
Year 9 2027	37,440	1,971	4,217	4,210	2,076	2,811
Year 10 2028	39,329	2,070	4,250	4,645	2,118	3,023
10-Year Increase	15,447	813	303	2,908	386	1,564
Projected Revenue	\$20,963,428	\$861,809	\$20,570	\$1,358,185	\$68,087	\$910,689

Projected Fee Revenue	\$24,182,768
Existing Development Share	\$4,273,813
Total Expenditures	\$30,711,392
Verrado Deficit	\$2,248,727

POLICE FACILITIES IIP

ARS § 9-463.05 (T)(7)(f) defines the facilities and assets that can be included in the Police Facilities IIP:

“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.”

The Police Facilities IIP includes components for police facilities, police vehicles and equipment, and the cost of preparing the Police Facilities IIP and related Development Fee Report. The incremental expansion methodology, based on the current level of service, is used to calculate the police facilities, and the police vehicles and equipment components. A plan-based methodology is used for the Development Fee Report.

Proportionate Share

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Police Facilities IIP and development fees are assessed on both residential and nonresidential development based on functional population shown in Figure P1. Based on 2015 functional population data, residential development accounts for approximately 82 percent of functional population and nonresidential development is responsible for the remaining 18 percent.

Figure P1: Functional Population

	Service Units in 2015	Demand Hours/Day	Person Hours
Residential			
Buckeye Residents ¹	67,029		
Residents Not Working	45,645	20	912,900
Employed Residents ²	21,384		
Employed in Buckeye ²	1,870	14	26,180
Employed Outside Buckeye ²	19,514	14	273,196
Residential Subtotal			1,212,276
			Residential Share 82%
Nonresidential			
Non-working Residents	45,645	4	182,580
Jobs in Buckeye ²	8,406		
Residents Working in Buckeye ²	1,870	10	18,700
Non-Resident Workers (inflow commuters) ²	6,536	10	65,360
Nonresidential Subtotal			266,640
			Nonresidential Share 18%
Total			1,478,916

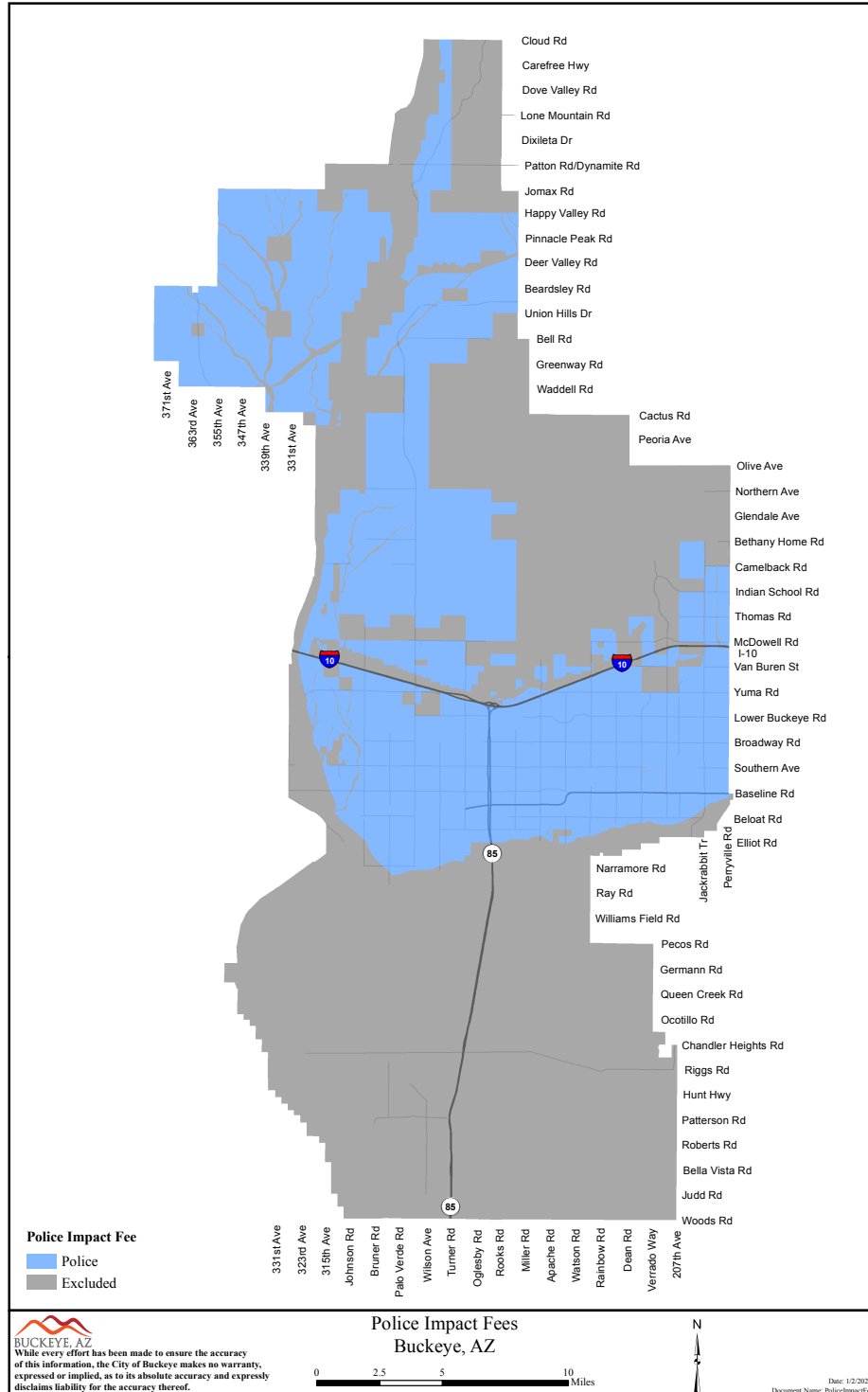
1. TischlerBise calculation using Maricopa Association of Governments Traffic Analysis Zone data

2. U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics, 2015, v6.6

Service Area

Buckeye’s Police Department strives to provide a uniform response time citywide. The service area for the Police Facilities IIP is shown below in Figure P2.

Figure P2: Police Service Area



RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT

ARS § 9-463.05(E)(4) requires:

“A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial.”

Figure P3 displays the demand indicators for residential and nonresidential land uses. For residential development, the table displays the persons per household. For nonresidential development, the table displays the number of vehicle trips generated per thousand square feet of floor area.

Figure P3: Ratio of Service Unit to Development Unit

Residential Development	
Development Type	Persons per Household ¹
Single-Family Unit	3.20
Multi-Family Unit	2.50
Age-Restricted Unit	2.00

Nonresidential Development	
Development Type	Avg Weekday Vehicle Trips ¹
Industrial	0.87
Commercial	12.46
Institutional	6.44
Office & Other Services	4.87

1. TischlerBise Land Use Assumptions

ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES

ARS § 9-463.05(E)(1) requires:

“A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.”

ARS § 9-463.05(E)(2) requires:

“An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.”

Police Facilities – Incremental Expansion

Buckeye plans to use development fees to expand its current inventory of police facilities. Shown below in Figure P4, Buckeye’s existing police facilities include 33,692 square feet. Functional population provides the proportionate share of demand for police facilities from residential and nonresidential development. Buckeye’s existing level of service for residential development is 0.3272 square feet per person (33,692 square feet X 82 percent residential share / 84,426 persons). The existing nonresidential level of service is 0.1323 square feet per vehicle trip (36,692 square feet X 18 percent / 45,854 vehicle trips).

Using cost estimates from planned facilities shown below, the weighted average cost for police facilities is \$417 per square foot. The residential cost is \$136.53 per person (0.3272 square feet per person X \$417 per square foot) and the nonresidential cost is \$55.18 per vehicle trip (0.1323 square feet per vehicle trip X \$417 per square foot).

Figure P4: Existing Police Facilities

Description	Square Feet
Headquarters	9,700
Sundance Crossings	15,400
Criminal Investigations	4,600
Sun City Festival Substation	3,992
Total	33,692

Cost Allocation Factors	
Cost per Square Foot	\$417

Level-of-Service (LOS) Standards	
Existing Square Feet	33,692
Residential	
Residential Share	82%
2018 Peak Population - City	84,426
Square Feet per Person	0.3272
Cost per Person	\$136.53
Nonresidential	
Nonresidential Share	18%
2018 Vehicle Trips - City	45,854
Square Feet per Vehicle Trip	0.1323
Cost per Vehicle Trip	\$55.18

Planned Facility	Total Cost	Units	Unit Cost
Evidence Building ¹	\$9,882,076	30,000 sq ft	\$329
Communications Center ¹	\$7,000,000	10,000 sq ft	\$700
Substation ²	\$1,497,000	3,992 sq ft	\$375
Report Writing ²	\$225,000	600 sq ft	\$375
Total	\$18,604,076	44,592 sq ft	\$417

1. CIP FY 19/20 - FY 24/25, City of Buckeye, Arizona.
2. Construction & Contracting Division, City of Buckeye, Arizona.

Police Vehicles and Equipment – Incremental Expansion

Development fees will be used to expand Buckeye’s inventory of police vehicles and equipment. Figure P5 lists the current vehicles and equipment used by Buckeye’s Police Department – 725 units with a replacement cost of approximately \$12.94 million, or \$17,844 per unit.

Figure P5: Existing Police Vehicles and Equipment

Description	Units ¹	Unit Cost ¹	Total Cost
Regional Wireless (Police Share)	1	\$3,194,334	\$3,194,334
Police Vehicles	99	\$60,000	\$5,940,000
Equipment per Sworn Officer	99	\$6,000	\$594,000
Bearcat	1	\$250,000	\$250,000
Portable Radios	120	\$8,000	\$960,000
Vehicle Radios	120	\$5,000	\$600,000
Dispatch Consoles	6	\$74,600	\$447,600
Automated Fingerprint System	1	\$38,600	\$38,600
Cisco Phone System	1	\$11,900	\$11,900
Mobile Data Terminals	84	\$5,000	\$420,000
Pole Cam	2	\$11,000	\$22,000
Desktops	73	\$1,000	\$73,000
Tablets	16	\$1,000	\$16,000
Laptops	45	\$1,300	\$58,500
Accident Trailer	1	\$30,000	\$30,000
Message Board	1	\$20,000	\$20,000
Radar Trailer	2	\$15,000	\$30,000
DUI Van	1	\$100,000	\$100,000
Automated External Defibrillators	50	\$1,800	\$90,000
Interview Room Equipment	1	\$24,000	\$24,000
Contraband Inspection Kit	1	\$17,200	\$17,200
Total	725	\$17,844	\$12,937,134

Functional population is used to allocate the proportionate share of demand to residential and nonresidential development. Buckeye’s existing level of service for residential development is 0.0070 units per person (725 units X 82 percent residential share / 84,426 persons). The nonresidential level of service is 0.0028 units per vehicle trip (725 units X 18 percent nonresidential share / 45,854 vehicle trips). The cost is \$125.65 per person (\$17,844 per unit X 0.0070 units per person) and \$50.78 per vehicle trip (\$17,844 per unit X 0.0028 units per vehicle trip).

Figure P6: Existing Level of Service

Cost Allocation Factors	
Cost per Unit	\$17,844

Level-of-Service (LOS) Standards	
Existing Units	725
Residential	
Residential Share	82%
2018 Peak Population - City	84,426
Units per Person	0.0070
Cost per Person	\$125.65
Nonresidential	
Nonresidential Share	18%
2018 Vehicle Trips - City	45,854
Units per Vehicle Trip	0.0028
Cost per Vehicle Trip	\$50.78

1. Buckeye Police Department, Buckeye, Arizona.

Development Fee Report – Plan-Based

The cost to prepare the Police Facilities IIP and related Development Fee Report totals \$28,948. Buckeye plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of new residential and nonresidential development from the *Land Use Assumptions* document, the cost is \$0.97 per person and \$0.28 per vehicle trip.

Figure P7: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Increase	Cost per Service Unit
Fire	\$28,948	Residential	82%	Peak Population	24,575	\$0.97
		Nonresidential	18%	Jobs	4,825	\$1.08
Library	\$28,948	Residential	94%	Peak Population	24,575	\$1.11
		Nonresidential	6%	Jobs	4,823	\$0.36
Parks and Recreational	\$28,948	Residential	94%	Peak Population	24,575	\$1.11
		Nonresidential	6%	Jobs	4,823	\$0.36
Police	\$28,948	Residential	82%	Peak Population	24,575	\$0.97
		Nonresidential	18%	Vehicle Trip	18,743	\$0.28
Street	\$28,948	All Development	100%	VMT	209,168	\$0.14
Total	\$144,740					

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(5) requires:

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

ARS § 9-463.05(E)(6) requires:

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

Police Facilities

Over the next 10 years, Buckeye’s peak population is projected to increase by 55,583 persons and nonresidential vehicle trips are projected to increase by 48,328. Using the existing LOS standards shown at the top of Figure P8, future residential development generates demand for 18,189 additional square feet of police facilities (0.3272 square feet per person X 55,583 additional persons), and future nonresidential development generates demand for 6,392 additional square feet of police facilities (0.1323 square feet per vehicle trip X 48,328 additional vehicle trips). The growth-related demand for additional police facilities equals 24,581 square feet at a cost of approximately \$10.26 million.

Figure P8: Projected Demand for Police Facilities

Type of Infrastructure	Level of Service			Service Unit	Unit Cost
Police Facilities	Residential	0.3272	Square Feet	per person	\$417
	Nonresidential	0.1323	Square Feet	per vehicle trip	

Growth-Related Need for Police Facilities						
Year	Peak Population	Vehicle Trips	Square Feet			Total
			Residential	Nonresidential		
Base 2018	84,426	45,854	27,627	6,065		33,692
Year 1 2019	88,896	48,966	29,090	6,476		35,566
Year 2 2020	93,575	52,372	30,621	6,927		37,548
Year 3 2021	98,482	56,089	32,227	7,418		39,645
Year 4 2022	103,621	60,145	33,909	7,955		41,863
Year 5 2023	109,001	64,597	35,669	8,543		44,213
Year 6 2024	114,637	69,471	37,514	9,188		46,702
Year 7 2025	120,546	74,815	39,447	9,895		49,342
Year 8 2026	126,731	80,678	41,471	10,670		52,141
Year 9 2027	133,216	87,111	43,593	11,521		55,114
Year 10 2028	140,009	94,183	45,816	12,456		58,273
10-Year Increase	55,583	48,328	18,189	6,392		24,581

Growth-Related Expenditures	\$7,588,528	\$2,666,688	\$10,255,217
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Police Vehicles and Equipment

Shown in Figure P9, peak population is projected to increase by 55,583 persons by 2028, and nonresidential vehicle trips will increase by 48,328 trips during the same period. Using the 2018 LOS standards shown in Figure P9, future residential development generates demand for approximately 391 additional units (0.0070 units per person X 55,583 additional persons), and future nonresidential development generates demand for approximately 138 additional units (0.0028 units per vehicle trip X 48,328 additional vehicle trips). The 10-year demand for additional police vehicles and equipment equals 529 units at a cost of approximately \$9.44 million.

Figure P9: Projected Demand for Police Vehicles and Equipment

Type of Infrastructure	Level of Service		Service Unit	Unit Cost
Police Vehicles and Equipment	Residential	0.0070 Units	per person	\$17,844
	Nonresidential	0.0028 Units	per vehicle trip	

Growth-Related Need for Police Vehicles and Equipment						
Year	Peak Population	Vehicle Trips	Vehicles and Equipment			
			Residential	Nonresidential	Total	
Base 2018	84,426	45,854	595	131	725	
Year 1 2019	88,896	48,966	626	139	765	
Year 2 2020	93,575	52,372	659	149	808	
Year 3 2021	98,482	56,089	693	160	853	
Year 4 2022	103,621	60,145	730	171	901	
Year 5 2023	109,001	64,597	768	184	951	
Year 6 2024	114,637	69,471	807	198	1,005	
Year 7 2025	120,546	74,815	849	213	1,062	
Year 8 2026	126,731	80,678	892	230	1,122	
Year 9 2027	133,216	87,111	938	248	1,186	
Year 10 2028	140,009	94,183	986	268	1,254	
10-Year Increase	55,583	48,328	391	138	529	

Growth-Related Expenditures	\$6,984,217	\$2,454,327	\$9,438,543
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POLICE FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is not necessary for Police Facilities development fees, because costs generated by projected development exceed revenues generated by projected development. Appendix A contains the forecast of revenues required by Arizona’s Enabling Legislation (ARS § 9-463.05(E)(7)).

Police Facilities Development Fees

Infrastructure components and cost factors for Police Facilities are summarized in the upper portion of Figure P10. The cost per service unit for Police Facilities is \$263.14 per person and \$106.24 per vehicle trip.

Police Facilities development fees for residential development are assessed according to the number of persons per household. For example, the single-family fee of \$842 is calculated using a cost per service unit of \$263.14 per person multiplied by a demand unit of 3.20 persons per household.

Nonresidential development fees are calculated using vehicle trips as the service unit. The fee of \$1,323 per 1,000 square feet of commercial development is derived from a cost per service unit of \$106.24 per vehicle trip multiplied by a demand unit of 12.46 vehicle trips per 1,000 square feet.

Figure P10: Schedule of Police Facilities Development Fees

Fee Component	Cost per Person	Cost per Vehicle Trip
Police Facilities	\$136.53	\$55.18
Police Vehicles and Equipment	\$125.65	\$50.78
Development Fee Report	\$0.97	\$0.28
Total	\$263.14	\$106.24

Residential Development		Development Fees per Unit		
Development Type	Persons per Household ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Single-Family Unit	3.20	\$842	\$1,076	(\$234)
Multi-Family Unit	2.50	\$658	\$841	(\$183)
Age-Restricted Unit	2.00	\$526	\$841	(\$315)

Nonresidential Development		Development Fees per 1,000 Square Feet		
Development Type	Avg Weekday Vehicle Trips ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Industrial	0.87	\$92	\$86	\$6
Commercial	12.46	\$1,323	\$679	\$644
Institutional	6.44	\$684	\$245	\$439
Office & Other Services	4.87	\$517	\$266	\$251

1. TischlerBise Land Use Assumptions
2. Police Share of Public Safety Fees

POLICE FACILITIES DEVELOPMENT FEE REVENUE

Appendix A contains revenue forecasts required by Arizona’s Enabling Legislation (ARS § 9-463.05(E)(7)). Projected fee revenue shown in Figure P11 is based on the development projections in the *Land Use Assumptions* document and the updated Police Facilities development fees. If development occurs faster than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs slower than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate. Projected development fee revenue is \$18.49 million over the next 10 years, and the projected growth-related cost of police infrastructure is \$19.72 million. While demand generated by Verrado is included in the analysis, infrastructure costs generated by Verrado cannot be captured through development fees due to a development agreement.

Figure P11: Projected Revenue from Police Facilities Development Fees

Fee Component	Growth Share	Existing Share	Total
Police Facilities	\$10,255,217	\$0	\$10,255,217
Police Vehicles and Equipment	\$9,438,543	\$0	\$9,438,543
Development Fee Report	\$28,948	\$0	\$28,948
Total	\$19,722,708	\$0	\$19,722,708

		Single Family \$842 per unit	Multi-Family \$658 per unit	Industrial \$92 per KSF	Commercial \$1,323 per KSF	Institutional \$684 per KSF	Office & Other \$517 per KSF
Year		Housing Units	Housing Units	KSF	KSF	KSF	KSF
Base	2018	23,882	1,257	3,947	1,737	1,732	1,459
Year 1	2019	25,124	1,322	3,976	1,917	1,767	1,569
Year 2	2020	26,424	1,391	4,006	2,115	1,803	1,688
Year 3	2021	27,788	1,463	4,035	2,334	1,840	1,816
Year 4	2022	29,215	1,538	4,064	2,574	1,877	1,953
Year 5	2023	30,711	1,616	4,094	2,840	1,916	2,101
Year 6	2024	32,277	1,699	4,126	3,134	1,954	2,259
Year 7	2025	33,919	1,785	4,156	3,458	1,994	2,430
Year 8	2026	35,638	1,876	4,188	3,815	2,035	2,613
Year 9	2027	37,440	1,971	4,217	4,210	2,076	2,811
Year 10	2028	39,329	2,070	4,250	4,645	2,118	3,023
10-Year Increase		15,447	813	303	2,908	386	1,564
Projected Revenue		\$13,006,374	\$534,954	\$27,869	\$3,847,112	\$263,973	\$808,597

Projected Fee Revenue	\$18,488,879
Existing Share	\$0
Total Expenditures	\$19,722,708
Verrado Deficit	\$1,233,829

STREET FACILITIES IIP

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

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

The Street Facilities IIP includes components for I-10 interchange improvements and the cost of professional services for preparing the Street Facilities IIP and related Development Fee Report. The plan-based methodology is used for I-10 interchange improvements and the related Development Fee Report.

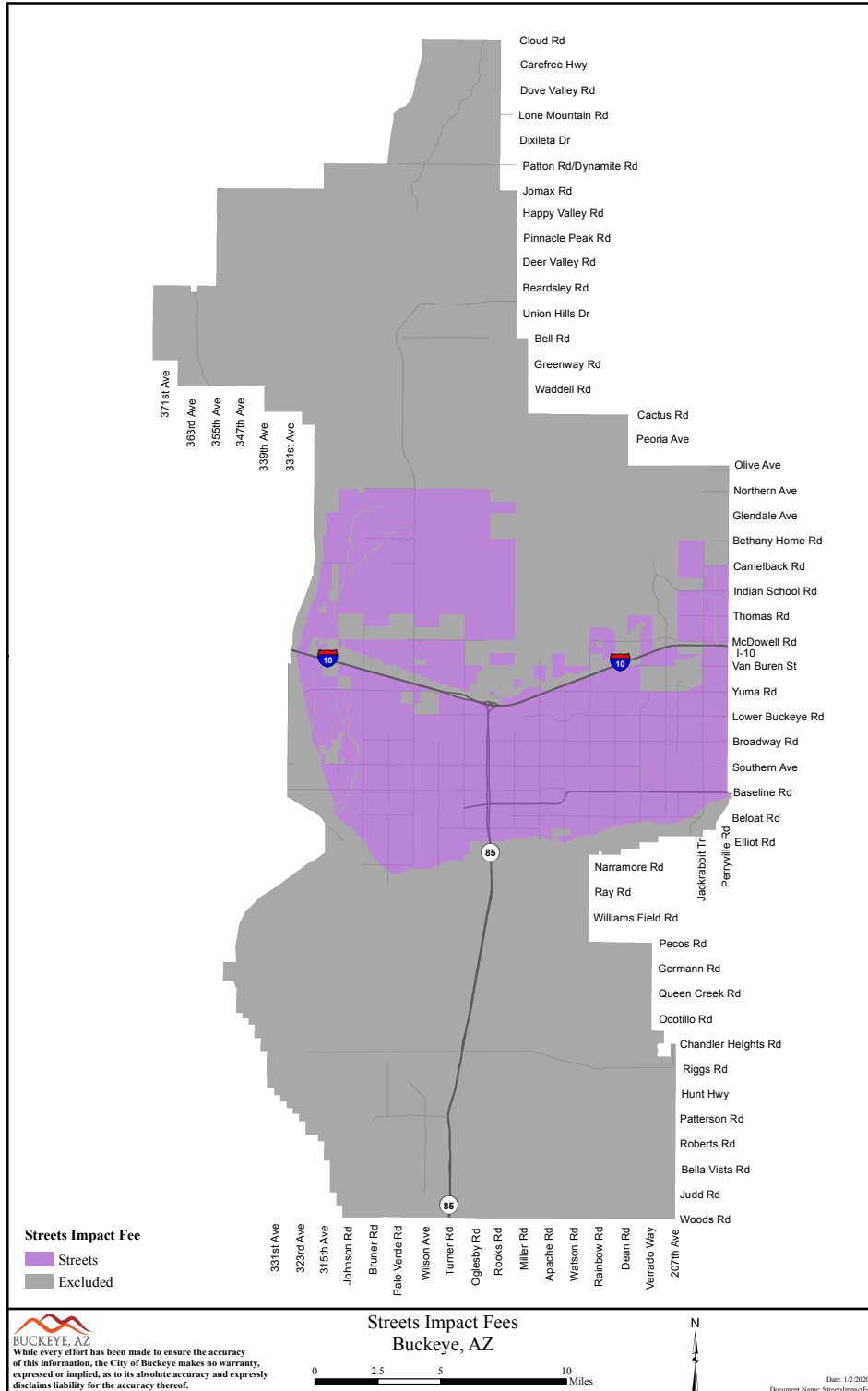
Proportionate Share

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to provide necessary public services to the development. Trip generation rates and trip adjustment factors are used to determine the proportionate impact of residential, commercial, office, and industrial land uses on Buckeye’s street network.

Service Area

The service area for the Street Facilities IIP is shown below in Figure S1.

Figure S1: Street Service Area



RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT

ARS § 9-463.05(E)(4) requires:

“A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial.”

Figure S2 displays the demand indicators for residential and nonresidential land uses. For residential development, the table displays VMT generated per household. For nonresidential development, the table displays VMT generated per thousand square feet of floor area.

Figure S2: Ratio of Service Unit to Development Unit

Residential Development		per Unit			
Development Type	Avg Weekday Veh Trip Ends ¹	Trip Rate Adjustment	Trip Length Adjustment	Avg Miles per Trip	Vehicle Miles of Travel
Single-Family Unit	9.44	64%	121%	3.41	24.93
Multi-Family Unit	5.44	64%	121%	3.41	14.37
Age-Restricted Unit	4.27	64%	121%	3.41	11.28

Nonresidential Development		per 1,000 square feet			
Development Type	Avg Weekday Veh Trip Ends ¹	Trip Rate Adjustment	Trip Length Adjustment	Avg Miles per Trip	Vehicle Miles of Travel
Industrial	1.74	50%	73%	3.41	2.17
Commercial	37.75	33%	66%	3.41	28.04
Institutional	19.52	33%	73%	3.41	16.04
Office & Other Services	9.74	50%	73%	3.41	12.12

1. TischlerBise Land Use Assumptions

ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES

ARS § 9-463.05(E)(1) requires:

“A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.”

The existing public services included in the Street Facilities IIP are 91.8 lane miles of arterials with four or more lanes, three I-10 interchanges, and 22 signalized intersections.

ARS § 9-463.05(E)(2) requires:

“An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.”

The daily lane capacity used in this analysis is 8,400, which is the roadway capacity of a four-lane arterial, found in the 2017 Maricopa Association of Governments Regional Transportation Model.

LEVEL OF SERVICE AND RATIO OF SERVICE UNIT TO LAND USE

Service Units

Buckeye will use vehicle miles of travel (VMT) as the service units for documenting existing level-of-service standards and allocating the costs of future improvements. Components used to determine the service units and input variables are discussed, including trip generation rates, adjustments for commuting patterns and pass-by trips, and trip length weighting factors.

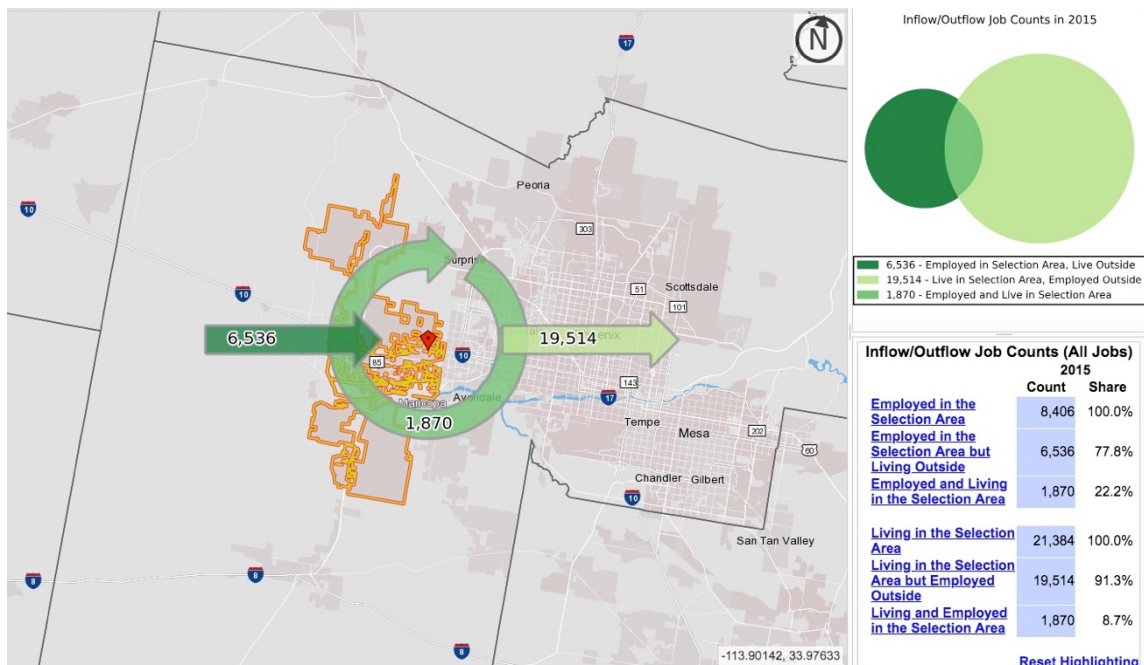
Trip Rate Adjustments

Buckeye’s Street Facilities Development Fees use average weekday trip generation rates from the reference book *Trip Generation* published by the Institute of Transportation Engineers (ITE 2017) as the basis for the VMT calculation. A vehicle trip end represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). To calculate Street Facilities Development Fees, trip generation rates require an adjustment factor to avoid double counting each trip at both the origin and destination points. Therefore, the basic trip adjustment factor is 50 percent. As discussed further below, the development fee methodology includes additional adjustments to make the fees proportionate to the infrastructure demand for particular types of development.

Adjustment for Commuting Patterns

Residential development has a trip adjustment factor of 64 percent to account for commuters leaving Buckeye for work. According to the 2009 National Household Travel Survey, weekday work trips are typically 31 percent of production trips (i.e., all out-bound trips, which are 50 percent of all trip ends). As shown in Figure S3, the Census Bureau’s web application OnTheMap indicates 91.3 percent of resident workers traveled outside Buckeye for work in 2015. In combination, these factors ($0.31 \times 0.50 \times 0.913 = 0.14$) support the additional 14 percent allocation of trips to residential development.

Figure S3: Inflow / Outflow Analysis



Adjustment for Pass-By Trips

For commercial and institutional development, the trip adjustment factor is less than 50 percent because these types of development attract vehicles as they pass by on arterial and collector roads. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For the average shopping center, ITE data indicate 34 percent of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66 percent of attraction trips have the commercial site as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 66 percent multiplied by 50 percent, or approximately 33 percent of the trip ends.

Trip Length Weighting Factor by Type of Land Use

The Street Facilities Development Fees methodology includes a percentage adjustment, or weighting factor, to account for trip length variation by type of land use. As documented in Table 6 of the 2009 National Household Travel Survey, vehicle trips from residential development are approximately 121 percent of the average trip length. The residential trip length adjustment factor includes data on home-based work trips, social, and recreational purposes. Conversely, shopping trips associated with commercial development are roughly 66 percent of the average trip length while other nonresidential development typically accounts for trips that are 73 percent of the average for all trips.

Average Trip Length

With 91.8 lane miles of arterials with four or more lanes and a lane capacity standard of 8,400 vehicles per lane per day, existing major arterials have approximately 771,120 vehicle miles of capacity (i.e. 8,400 vehicles per lane over the entire 91.8 lane miles). To derive the average utilization (i.e., average trip length expressed in miles) of the major streets, divide vehicle miles of capacity by vehicle trips attracted to development in Buckeye. As shown in Figure S5, citywide development in Buckeye currently attracts 206,255 average weekday vehicle trips. Dividing 771,120 vehicle miles of capacity by existing average weekday vehicle trips yields an unweighted-average trip length of approximately 3.74 miles. However, the calibration of average trip length includes the same adjustment factors used in the development fee calculations (i.e. journey-to-work commuting, commercial pass-by adjustment, and average trip length adjustment by type of land use). With these refinements, the weighted-average trip length is 3.41 miles.

PROJECTED DEMAND FOR SERVICES AND COSTS

TischlerBise created an aggregate travel model to convert development units within Buckeye to project vehicle trips and vehicle miles of travel. Figure S4 summarizes the input variables used in the aggregate travel demand model.

Figure S4: Input Variables for Travel Demand Model

Development Type	ITE Code	Weekday VTE	Dev Unit	Trip Adjustment	Trip Length Wt Factor
Single-Family Units	210	9.44	HU	64%	121%
Multi-Family Units	220	5.44	HU	64%	121%
Industrial	150	1.74	KSF	50%	73%
Commercial	820	37.75	KSF	33%	66%
Institutional	520	19.52	KSF	33%	73%
Office & Other Services	710	9.74	KSF	50%	73%
Avg Trip Length (miles)	3.41				
Capacity Per Lane	8,400				

ARS § 9-463.05(E)(5) requires:

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

Projected citywide development in Buckeye over the next 10 years, and the corresponding need for additional street facilities, is shown in Figure S5. Trip generation rates and trip adjustment factors convert projected development into vehicle miles of travel. As shown in Figure S5, future development in Buckeye will generate 539,212 additional vehicle miles of travel.

ARS § 9-463.05(E)(6) requires:

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

The travel demand model inputs are used to derive the level of service in vehicle miles of travel and future needs of street facilities. A vehicle mile of travel is a measurement unit equal to one vehicle traveling one mile. In the aggregate, VMT is the product of vehicle trips multiplied by the average trip length. Based on estimates shown in Figure S5, existing infrastructure standards using an average trip length of 3.41 miles are 1.19 lane miles per 10,000 VMT (91.8 arterial lane miles / (770,774 VMT / 10,000)) and 0.04 I-10 interchanges per 10,000 VMT (three I-10 interchanges / (770,774 VMT / 10,000)).

Citywide Travel Demand

As shown on the lower right side of Figure S5, future development citywide generates an additional 539,212 VMT over the next 10 years. To maintain the existing infrastructure standards, Buckeye needs 64.2 additional lane miles of arterials and 2.1 additional I-10 interchanges to accommodate projected development over the next 10 years.

Figure S5: Projected Travel Demand - Citywide

Development Type		ITE Code	Weekday VTE	Dev Unit	Trip Adjustment	Trip Length Wt Factor			
Single-Family Units		210	9.44	HU	64%	121%			
Multi-Family Units		220	5.44	HU	64%	121%			
Industrial		150	1.74	KSF	50%	73%			
Commercial		820	37.75	KSF	33%	66%			
Institutional		520	19.52	KSF	33%	73%			
Office & Other Services		710	9.74	KSF	50%	73%			
Avg Trip Length (miles)		3.41							
Capacity Per Lane		8,400							
		Base	1	2	3	4	5	10	10-Year Increase
		2018	2019	2020	2021	2022	2023	2028	
Development	Single-Family Units	25,768	27,107	28,510	29,980	31,520	33,132	42,425	16,657
	Multi-Family Units	1,356	1,427	1,501	1,578	1,659	1,744	2,233	877
	Industrial KSF	3,994	4,023	4,053	4,082	4,112	4,144	4,303	309
	Commercial KSF	1,749	1,932	2,134	2,357	2,603	2,876	4,749	3,000
	Institutional KSF	2,051	2,093	2,136	2,180	2,224	2,270	2,513	462
	Office & Other Services KSF	1,514	1,626	1,747	1,876	2,015	2,165	3,098	1,584
Avg Weekday Vehicle Trips	Single-Family Trips	155,680	163,770	172,246	181,127	190,431	200,170	256,315	100,635
	Multi-Family Trips	4,721	4,968	5,226	5,494	5,776	6,072	7,774	3,053
	Residential Trips	160,401	168,738	177,472	186,621	196,207	206,242	264,089	103,688
	Industrial Trips	3,475	3,500	3,526	3,551	3,577	3,605	3,743	269
	Commercial Trips	21,793	24,065	26,581	29,358	32,427	35,826	59,162	37,368
	Institutional Trips	13,212	13,482	13,759	14,043	14,327	14,625	16,190	2,978
	Office & Other Services Trips	7,374	7,919	8,506	9,137	9,814	10,541	15,087	7,714
	Nonresidential Trips	45,854	48,966	52,372	56,089	60,145	64,597	94,183	48,328
Total Vehicle Trips	206,255	217,704	229,844	242,710	256,353	270,840	358,272	152,017	
VMT	Vehicle Miles of Travel (VMT)	770,774	812,377	856,292	902,632	951,550	1,003,227	1,309,986	539,212
Demand	Lane Miles	91.8	96.7	101.9	107.5	113.3	119.4	156.0	64.2
	per 10,000 VMT	1.19	1.19	1.19	1.19	1.19	1.19	1.19	
	I-10 Interchanges	3.0	3.2	3.3	3.5	3.7	3.9	5.1	2.1
	per 10,000 VMT	0.04	0.04	0.04	0.04	0.04	0.04	0.04	
	Signalized Intersections	22.0	23.2	24.4	25.8	27.2	28.6	37.4	15.4
	per 10,000 VMT	0.29	0.29	0.29	0.29	0.29	0.29	0.29	

Street Service Area Travel Demand

Since Buckeye plans to collect development fees related to I-10 interchanges in areas near I-10, TischlerBise created a travel demand model based on the Street Service Area shown in Figure S1. To serve future development, Buckeye plans to construct an I-10 interchange at Jackrabbit Trail and acquire rights-of-way at Dean Road and Johnson Road over the next 10 years. The 10-year VMT increase equals 484,840 VMT in the Street Service Area.

Figure S6: Projected Travel Demand – Street Service Area

Development Type		ITE Code	Weekday VTE	Dev Unit	Trip Adjustment	Trip Length Wt Factor			
Single-Family Units		210	9.44	HU	64%	121%			
Multi-Family Units		220	5.44	HU	64%	121%			
Industrial		150	1.74	KSF	50%	73%			
Commercial		820	37.75	KSF	33%	66%			
Institutional		520	19.52	KSF	33%	73%			
Office & Other Services		710	9.74	KSF	50%	73%			
Avg Trip Length (miles)		3.41							
Capacity Per Lane		8,400							
		Base	1	2	3	4	5	10	10-Year Increase
		2018	2019	2020	2021	2022	2023	2028	
Development	Single-Family Units	23,213	24,400	25,641	26,940	28,300	29,722	37,898	14,685
	Multi-Family Units	1,222	1,284	1,350	1,418	1,489	1,564	1,995	773
	Industrial KSF	3,929	3,956	3,982	4,009	4,035	4,064	4,206	276
	Commercial KSF	1,730	1,907	2,103	2,320	2,559	2,823	4,627	2,896
	Institutional KSF	2,013	2,053	2,096	2,137	2,181	2,225	2,461	447
	Office & Other Services KSF	1,472	1,582	1,699	1,825	1,960	2,105	3,014	1,542
Avg Weekday Vehicle Trips	Single-Family Trips	140,244	147,415	154,913	162,761	170,977	179,568	228,965	88,721
	Multi-Family Trips	4,255	4,470	4,700	4,937	5,184	5,445	6,946	2,691
	Residential Trips	144,498	151,885	159,613	167,698	176,161	185,014	235,910	91,412
	Industrial Trips	3,418	3,441	3,464	3,487	3,510	3,536	3,659	241
	Commercial Trips	21,554	23,762	26,203	28,900	31,874	35,166	57,635	36,081
	Institutional Trips	12,970	13,226	13,503	13,766	14,050	14,334	15,851	2,881
	Office & Other Services Trips	7,170	7,702	8,273	8,885	9,545	10,253	14,679	7,508
	Nonresidential Trips	45,113	48,131	51,444	55,039	58,979	63,289	91,824	46,711
Total Vehicle Trips	189,611	200,017	211,057	222,737	235,141	248,303	327,734	138,123	
VMT	Vehicle Miles of Travel (VMT)	703,368	740,836	780,383	822,048	866,069	912,536	1,188,209	484,840
I-10 Interchanges	3.0	3.2	3.3	3.5	3.7	3.9	5.1	2.1	
per 10,000 VMT	0.04	0.04	0.04	0.04	0.04	0.04	0.04		

ARS § 9-463.05(E)(3) requires:

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

I-10 Interchange Improvements – Plan-Based

Shown below in Figure S7, Buckeye plans to construct the Jackrabbit Trail interchange improvement within the next five years at a cost of \$4.75 million. This improvement was included in Buckeye’s 2014 Development Fee Study with a growth share of 44 percent, so this update of Buckeye’s development fees also uses a growth share of 44 percent. This results in a growth cost of \$2.10 million. Deducting the March 2019 Street development fee balance of approximately \$1.01 million from the growth cost leaves approximately \$1.09 million in growth-related costs for the Jackrabbit Trail interchange improvement. Allocating this cost to the 5-year VMT increase results in a cost of \$5.23 per VMT (\$1,093,972 / 209,168 VMT).

Figure S7: I-10 Interchange Improvement – Jackrabbit Trail

Description	Project Cost	Growth Share ¹	Growth Cost
Jackrabbit Trail & I-10	\$4,750,000	44%	\$2,100,000
	March 2019 Fund Balance		(\$1,006,028)
	Growth-Related Cost		\$1,093,972
	5-Year VMT Increase		209,168
	Cost per VMT		\$5.23

1. Growth share from 2014 Development Fee Study

Shown below in Figure S8, Buckeye plans to acquire rights-of-way for I-10 interchanges at Dean Road and Johnson Road within the next 10 years at a cost of \$7.90 million. Based on the 10-year VMT increase shown in Figure S6, this improvement uses a growth share of 41 percent. This results in a growth cost of approximately \$3.23 million. Allocating the growth cost to the 10-year VMT increase results in a cost of \$6.65 per VMT (\$3,225,456 / 484,840 VMT).

Figure S8: I-10 Interchange Rights-of-Way

Description	Project Cost	Growth Share ¹	Growth Cost
Dean Rd & I-10 (ROW)	\$4,993,469	41%	\$2,037,551
Johnson Rd & I-10 (ROW)	\$2,911,224	41%	\$1,187,905
Total	\$7,904,694	41%	\$3,225,456
	10-Year VMT Increase		484,840
	Cost per VMT		\$6.65

1. Growth share based on 10-year VMT increase

Development Fee Report – Plan-Based

The cost to prepare the Street Facilities IIP and related Development Fee Report totals \$28,948. Buckeye plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of new development from the *Land Use Assumptions* document, the cost is \$0.14 per VMT.

Figure S9: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Increase	Cost per Service Unit
Fire	\$28,948	Residential	82%	Peak Population	24,575	\$0.97
		Nonresidential	18%	Jobs	4,825	\$1.08
Library	\$28,948	Residential	94%	Peak Population	24,575	\$1.11
		Nonresidential	6%	Jobs	4,823	\$0.36
Parks and Recreational	\$28,948	Residential	94%	Peak Population	24,575	\$1.11
		Nonresidential	6%	Jobs	4,823	\$0.36
Police	\$28,948	Residential	82%	Peak Population	24,575	\$0.97
		Nonresidential	18%	Vehicle Trip	18,743	\$0.28
Street	\$28,948	All Development	100%	VMT	209,168	\$0.14
Total	\$144,740					

STREET FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is not necessary for the Street Facilities development fees, because costs generated by projected development exceed revenues generated by projected development. Appendix A contains the forecast of revenues required by Arizona’s Enabling Legislation (ARS § 9-463.05(E)(7)).

Infrastructure standards and cost factors for Street Facilities are summarized in the upper portion of Figure S10. The cost per service unit is \$12.02 per vehicle mile of travel.

Street Facilities development fees for residential development are assessed according to VMT generated per unit. The single-family fee of \$300 is calculated using a cost per service unit of \$12.02 per VMT multiplied by 24.93 vehicle miles of travel.

Nonresidential development fees are calculated using VMT as the service unit. The fee of \$337 per 1,000 square feet of commercial development is derived from a cost per service unit of \$12.02 per VMT multiplied by 28.04 vehicle miles of travel.

Figure S10: Schedule of Street Facilities Development Fees

Fee Component	Cost per VMT
I-10 Interchange - Jackrabbit	\$5.23
I-10 Interchanges - ROW	\$6.65
Development Fee Report	\$0.14
Total	\$12.02

Residential Development		Development Fees per Unit		
Development Type	Vehicle Miles of Travel ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Single-Family Unit	24.93	\$300	\$252	\$48
Multi-Family Unit	14.37	\$173	\$176	(\$3)
Age-Restricted Unit	11.28	\$136	\$176	(\$40)

Nonresidential Development		Development Fees per 1,000 Square Feet		
Development Type	Vehicle Miles of Travel ¹	Proposed Fees	Current Fees ²	Increase / Decrease
Industrial	2.17	\$26	\$44	(\$18)
Commercial	28.04	\$337	\$318	\$19
Institutional	16.04	\$193	\$127	\$66
Office & Other Services	12.12	\$146	\$137	\$9

1. See Figure S2

2. Current Fees in Central East, Central West, and Central North Service Areas

STREET FACILITIES DEVELOPMENT FEE REVENUE

Appendix A contains the forecast of revenues required by Arizona’s Enabling Legislation (ARS § 9-463.05(E)(7)). Projected fee revenue shown in Figure S11 is based on the development projections in the *Land Use Assumptions* document and the updated Street Facilities development fees shown in Figure S10. If development occurs at a faster rate than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs at a slower rate than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate. Projected development fee revenue is \$4.03 million over the next 10 years, and the projected growth-related cost of street infrastructure is \$4.35 million. While demand generated by Verrado is included in the analysis, infrastructure costs generated by Verrado cannot be captured through development fees due to a development agreement. Existing development’s share of \$8.34 million may not be funded with development fees.

Figure S11: Projected Street Facilities Development Fee Revenue

Fee Component	Growth Share	Existing Share	Total
I-10 Interchange - Jackrabbit	\$1,093,972	\$3,656,028	\$4,750,000
I-10 Interchanges - ROW	\$3,225,456	\$4,679,237	\$7,904,694
Development Fee Report	\$28,948	\$0	\$28,948
Total	\$4,348,377	\$8,335,265	\$12,683,642

		Single Family \$300 per unit	Multi-Family \$173 per unit	Industrial \$26 per KSF	Commercial \$337 per KSF	Institutional \$193 per KSF	Office & Other \$146 per KSF
Year		Housing Units	Housing Units	KSF	KSF	KSF	KSF
Base	2018	21,328	1,123	3,882	1,718	1,694	1,417
Year 1	2019	22,416	1,180	3,909	1,892	1,728	1,525
Year 2	2020	23,555	1,240	3,935	2,085	1,763	1,640
Year 3	2021	24,748	1,303	3,962	2,297	1,797	1,764
Year 4	2022	25,995	1,368	3,988	2,530	1,834	1,898
Year 5	2023	27,300	1,437	4,014	2,787	1,871	2,041
Year 6	2024	28,666	1,509	4,044	3,071	1,908	2,196
Year 7	2025	30,097	1,584	4,070	3,383	1,946	2,362
Year 8	2026	31,594	1,663	4,097	3,726	1,986	2,540
Year 9	2027	33,162	1,745	4,123	4,105	2,025	2,732
Year 10	2028	34,802	1,832	4,153	4,522	2,065	2,939
10-Year Increase		13,474	709	271	2,805	371	1,522
Projected Revenue		\$3,033,720	\$91,973	\$5,437	\$684,095	\$54,740	\$163,336

Projected Fee Revenue	\$4,033,301
Existing Development Share	\$8,335,265
Total Expenditures	\$12,683,642
Verrado Deficit	\$315,076

WATER FACILITIES IIP

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

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

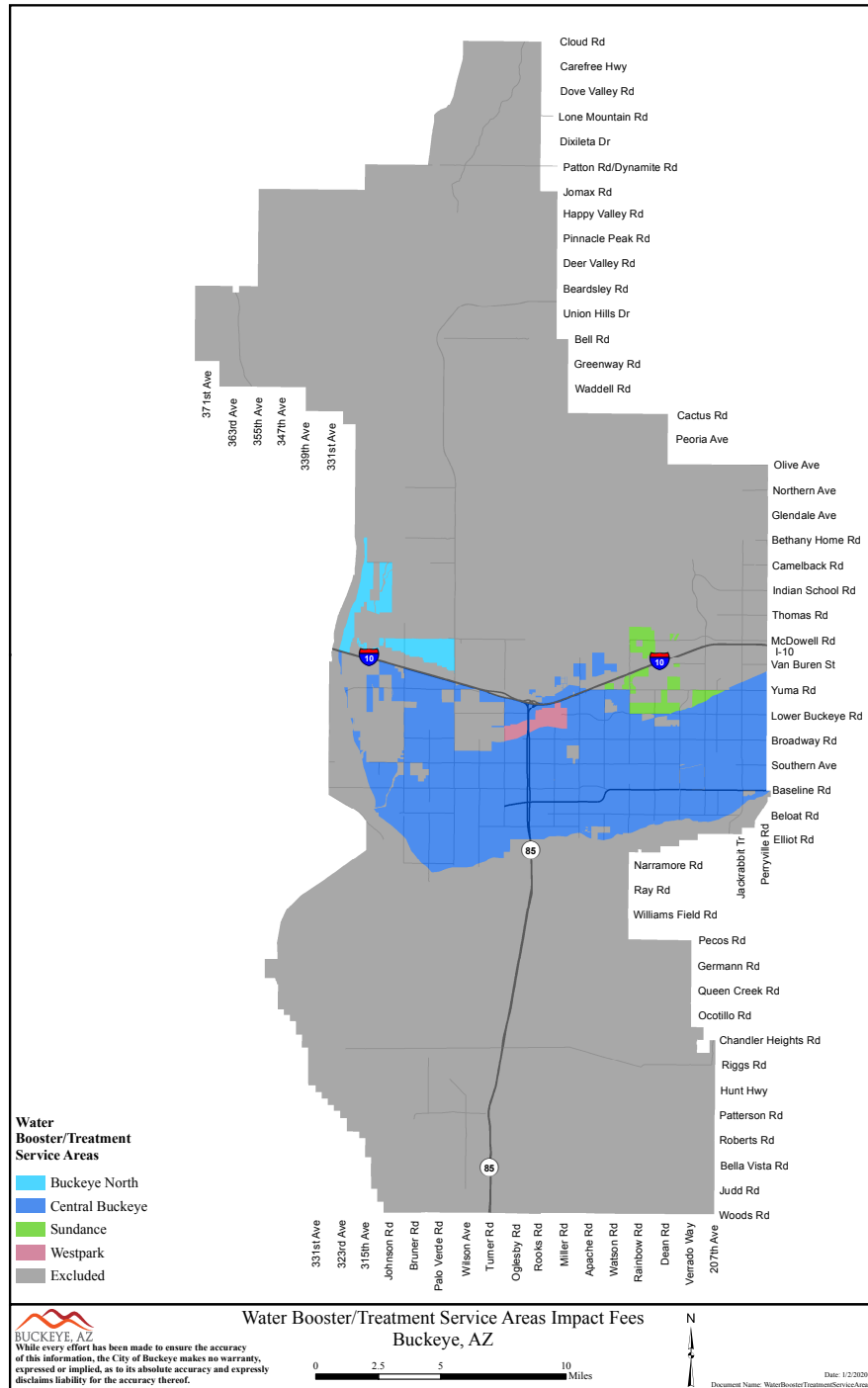
The Water Facilities IIP includes capital components for booster/treatment, distribution, production, and reimbursement. The plan-based methodology is used for booster/treatment, distribution, and production in the following service areas: Buckeye North, Central Buckeye, Sundance, and Westpark. The cost recovery methodology is used in the Tartesso West service area. Appendix F includes a detailed list of water capital components identified in Buckeye’s Integrated Water Master Plan (2017).

Service Areas

Booster/Treatment Service Areas

Shown below, Figure W1 includes the booster/treatment service areas.

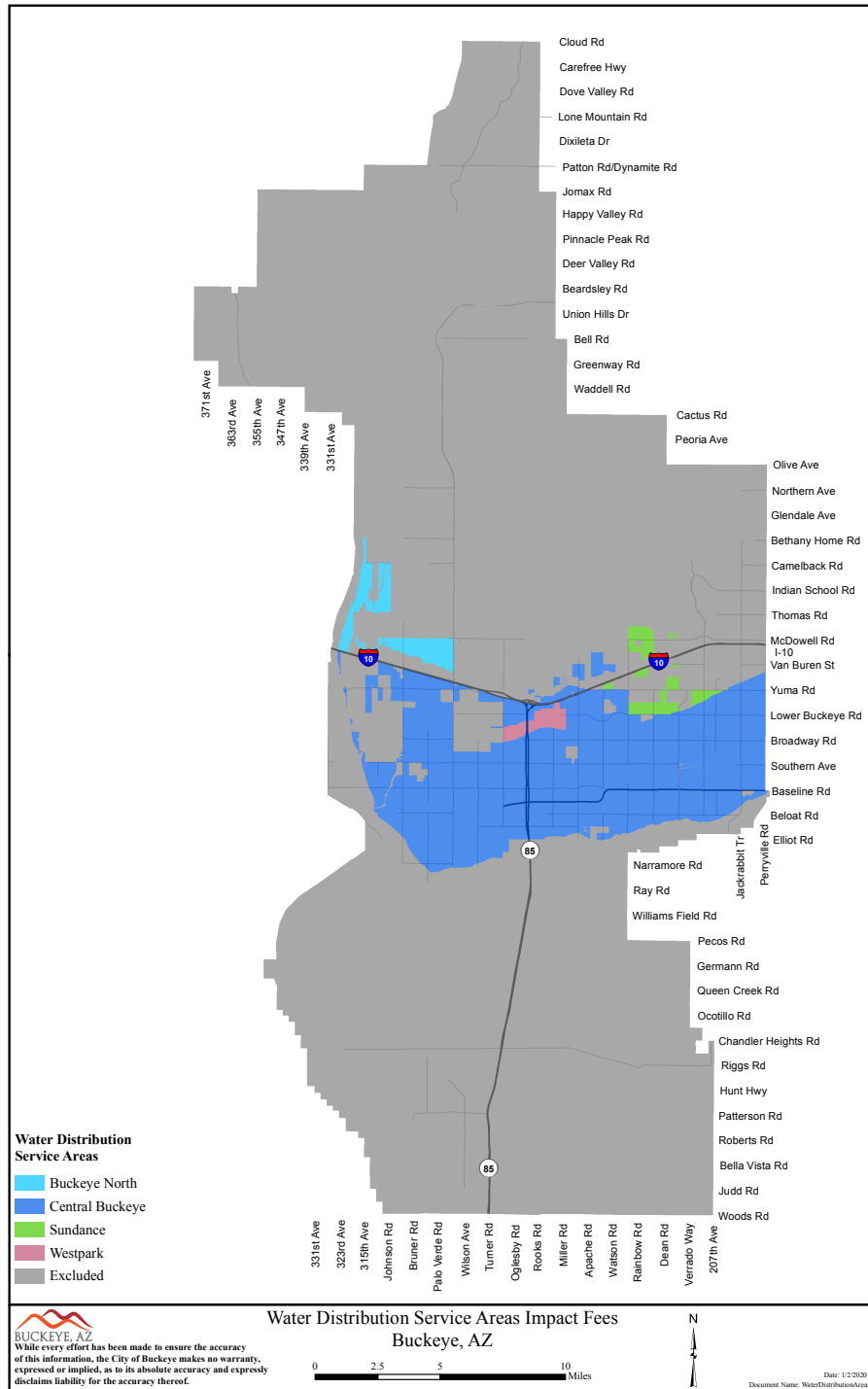
Figure W1: Booster/Treatment Service Areas



Distribution Service Areas

Shown below, Figure W2 includes the distribution service areas.

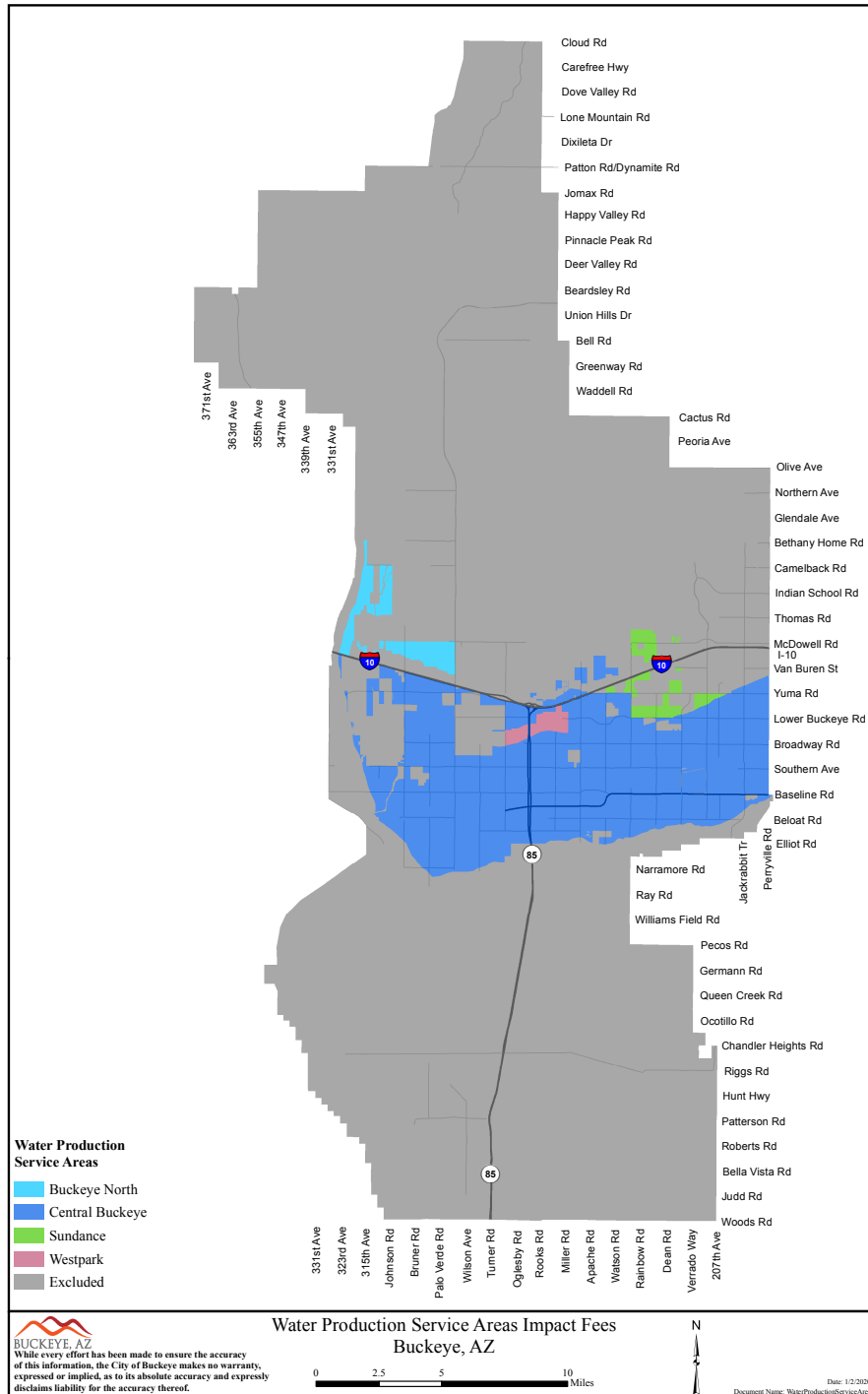
Figure W2: Distribution Service Areas



Production Service Areas

Shown below, Figure W3 includes the production service areas.

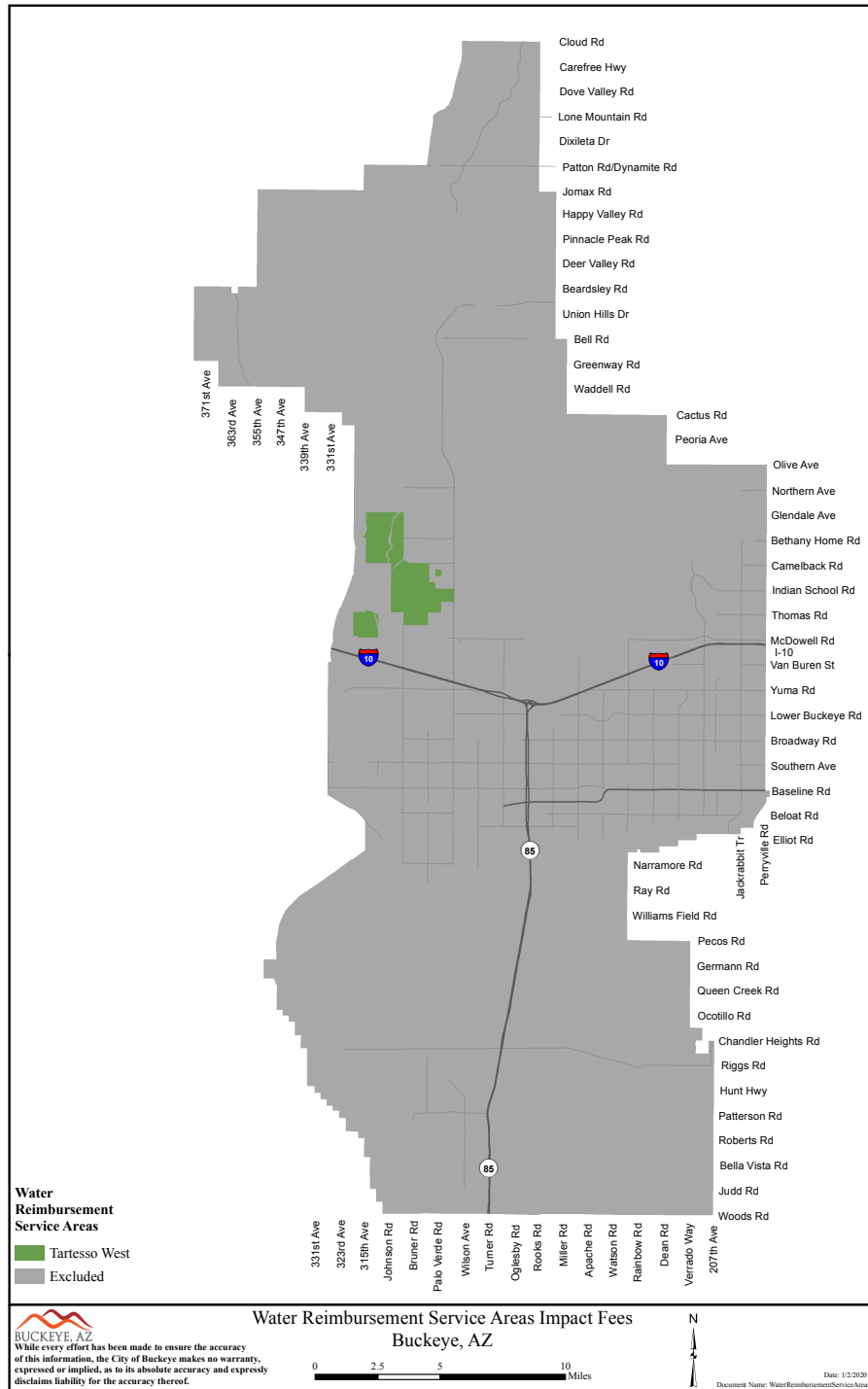
Figure W3: Production Service Areas



Reimbursement Service Area

Shown below, Figure W4 includes the reimbursement service area.

Figure W4: Reimbursement Service Area



RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT

ARS § 9-463.05(E)(4) requires:

“A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial.”

Figure W5 displays the demand indicators for residential land uses. Water Facilities development fees are calculated using max day gallons of water demand per single-family unit and the capital cost per gallon of system capacity – this represents an equivalent dwelling unit (EDU). Water Facilities development fees paid by nonresidential development are derived from capacity ratios, according to the size of the new customer’s water meter, applied to the equivalent dwelling unit. Capacity ratios were obtained from the Buckeye Engineering Standards (Section 3-1.206).

Figure W5: Water Demand Factors

Land Use	Persons	Per Capita	Average Day
Single-Family	3.2	113	362
Age-Restricted	2	113	226

Land Use	Persons	Per Capita	Max Day
Single-Family	3.2	203	651
Age-Restricted	2	203	407

Source: Engineering Department, City of Buckeye, Arizona.

According to Buckeye’s Engineering Department, average day demand from residential development equals 113 gallons of water per person. Based on 3.20 persons per single-family unit, average day demand from single-family units equals 362 gallons per day. Since Buckeye sizes its water infrastructure to meet max day demand, the analysis uses max day demand of 651 gallons (362 gallons per average day X 1.8 max day peaking factor) per equivalent dwelling unit. For age-restricted units, the analysis uses 2.0 persons per unit, average day demand of 113 gallons per day, and the max day peaking factor to calculate max day demand of 407 gallons per day (226 gallons per average day X 1.8 max day peaking factor).

ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES

ARS § 9-463.05(E)(1) requires:

“A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.”

ARS § 9-463.05(E)(2) requires:

“An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.”

Booster/Treatment

Within 10 years, Buckeye, or a development partner, plans to construct additional water booster/treatment facilities to serve future development. Figure W6 includes cumulative costs and cumulative capacities of planned booster/treatment facilities for each service area shown in Figure W1. To calculate the cost per service unit (gallons) for each service area, costs are allocated to the additional capacity of each booster/treatment facility. For example, booster/treatment facilities in Central Buckeye cost \$4.43 per gallon (\$73,363,689 / 16,574,400 gallons). Appendix F includes a detailed list of planned booster/treatment improvements identified in Buckeye’s Integrated Water Master Plan (2017).

Figure W6: Booster/Treatment Cost per Gallon

Component	Service Area	Cost	Capacity (Gallons)	Cost per Gallon
Booster/Treatment	Buckeye North	\$12,109,644	3,000,000	\$4.04
	Central Buckeye	\$73,363,689	16,574,400	\$4.43
	Sundance	\$8,757,250	1,872,000	\$4.68
	Tartesso West	n/a	n/a	n/a
	Westpark	\$14,593,069	2,518,560	\$5.79
Total		\$108,823,652	23,964,960	

Source: Buckeye Integrated Water Master Plan (2017)

Distribution

Within 10 years, Buckeye, or a development partner, plans to construct additional water distribution improvements to serve future development. Figure W7 includes cumulative costs and cumulative capacities of planned distribution improvements for each service area shown in Figure W2. To calculate the cost per service unit (gallons) for each service area, costs are allocated to the additional capacity of each distribution improvement. For example, distribution improvements in Central Buckeye cost \$0.66 per gallon (\$10,913,615 / 16,574,400 gallons). Appendix F includes a detailed list of planned distribution improvements identified in Buckeye’s Integrated Water Master Plan (2017).

Figure W7: Distribution Cost per Gallon

Component	Service Area	Cost	Capacity (Gallons)	Cost per Gallon
Distribution	Buckeye North	\$3,200,150	3,000,000	\$1.07
	Central Buckeye	\$10,913,615	16,574,400	\$0.66
	Sundance	\$281,888	1,872,000	\$0.15
	Tartesso West	n/a	n/a	n/a
	Westpark	\$1,518,650	2,518,560	\$0.60
Total		\$15,914,303	23,964,960	

Production

Within 10 years, Buckeye, or a development partner, plans to construct additional water production facilities to serve future development. Figure W8 includes cumulative costs and cumulative capacities of planned production facilities for each service area shown in Figure W3. To calculate the cost per service unit (gallons) for each service area, costs are allocated to the additional capacity of each production facility. For example, production facilities in Central Buckeye cost \$6.70 per gallon (\$26,059,938 / 3,888,000 gallons). Appendix F includes a detailed list of planned production improvements identified in Buckeye’s Integrated Water Master Plan (2017).

Figure W8: Production Cost per Gallon

Component	Service Area	Cost	Capacity (Gallons)	Cost per Gallon
Production	Buckeye North	\$3,108,588	540,000	\$5.76
	Central Buckeye	\$26,059,938	3,888,000	\$6.70
	Sundance	\$3,585,654	540,000	\$6.64
	Tartesso West	n/a	n/a	n/a
	Westpark	\$6,771,315	540,000	\$12.54
Total		\$39,525,495	5,508,000	

Source: Buckeye Integrated Water Master Plan (2017)

Reimbursement

Currently, excess capacity exists within the Tartesso West service area. Through a development agreement, Buckeye collects development fees within Tartesso West to repay the developer’s water facilities cost. Figure W9 includes the outstanding cost and the available capacity of existing water facilities in the Tartesso West service area, as shown in Figure W4. To calculate the cost per service unit (gallons), the cost is allocated to the available capacity. For water facilities in Tartesso West, the cost is \$5.71 per gallon (\$5,029,421 / 880,152 gallons). Appendix F includes a detailed list of components included in Buckeye’s existing water reimbursement agreement in Tartesso West.

Figure W9: Reimbursement Cost per Gallon

Component	Service Area	Cost	Capacity (Gallons)	Cost per Gallon
Reimbursement	Buckeye North	n/a	n/a	n/a
	Central Buckeye	n/a	n/a	n/a
	Sundance	n/a	n/a	n/a
	Tartesso West	\$5,029,421	880,152	\$5.71
	Westpark	n/a	n/a	n/a
Total		\$5,029,421	880,152	

Source: Buckeye Engineering Department

Summary

Shown below, the top of Figure W10 includes cumulative growth-related costs by service area and by fee component. The bottom of Figure W10 includes the cost per gallon by service area and by fee component. The total cost per gallon for each service area, shaded gray, is used to calculate the capacity fees discussed in the next section.

Figure W10: Total Cost per Gallon

Service Area	Booster / Treatment	Distribution	Production	Reimbursement	Total
Buckeye North	\$12,109,644	\$3,200,150	\$3,108,588	n/a	\$18,418,382
Central Buckeye	\$73,363,689	\$10,913,615	\$26,059,938	n/a	\$110,337,243
Sundance	\$8,757,250	\$281,888	\$3,585,654	n/a	\$12,624,792
Tartesso West	n/a	n/a	n/a	\$5,029,421	\$5,029,421
Westpark	\$14,593,069	\$1,518,650	\$6,771,315	n/a	\$22,883,034
Total	\$108,823,652	\$15,914,303	\$39,525,495	\$5,029,421	\$169,292,872

Service Area	Booster / Treatment	Distribution	Production	Reimbursement	Total
Buckeye North	\$4.04	\$1.07	\$5.76	n/a	\$10.87
Central Buckeye	\$4.43	\$0.66	\$6.70	n/a	\$11.79
Sundance	\$4.68	\$0.15	\$6.64	n/a	\$11.47
Tartesso West	n/a	n/a	n/a	\$5.71	\$5.71
Westpark	\$5.79	\$0.60	\$12.54	n/a	\$18.93

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(5) requires:

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

ARS § 9-463.05(E)(6) requires:

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

Water Demand

Based on recent permit data, Buckeye expects an additional 8,000 EDUs in the booster /treatment, distribution, and production service areas and 1,400 EDUs in the reimbursement service area over the next 10 years.

Figure W11: Projected Water Demand

Service Area	Booster / Treatment	Distribution	Production	Reimbursement
Buckeye North	100	100	100	0
Central Buckeye	7,700	7,700	7,700	0
Sundance	100	100	100	0
Tartesso West	0	0	0	1,400
Westpark	100	100	100	0
Total	8,000	8,000	8,000	1,400

WATER FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is not necessary for Water Facilities development fees, because costs generated by projected development exceed revenues generated by projected development. Appendix A contains the forecast of revenues required by Arizona’s Enabling Legislation (ARS § 9-463.05(E)(7)).

Water Facilities Development Fees

Infrastructure standards and cost factors for Water Facilities are summarized in the upper portion of Figure W12. Residential fees are calculated by multiplying the max day gallons per equivalent dwelling unit by the cost per gallon of capacity. For example, the calculation for a single-family unit (one-inch meter) in Central Buckeye is 651 max day gallons multiplied by \$11.79 per gallon of capacity. This results in a Central Buckeye Water Facilities development fee of \$7,675 per EDU.

Nonresidential fees are based on size and type of water meter. The capacity ratios by meter size and type are from the Buckeye Engineering Standards (Section 3-1.206). The max day water demands of an average single-family unit are used as the basis of the calculation. For future development in Central Buckeye with a two-inch disc meter, the Water Facilities development fee is \$24,561 (651 max day gallons X \$11.79 per gallon of capacity X 3.2 capacity ratio).

Figure W12: Schedule of Water Facilities Development Fees

Water Demand Factors	
Gallons per EDU	651
Gallons per Age-Restricted	407

Cost per Gallon of Capacity	
Buckeye North	\$10.87
Central Buckeye	\$11.79
Sundance	\$11.47
Tartesso West	\$5.71
Westpark	\$18.93

Fees per Meter						
Meter Type and Size (inches)	Capacity Ratio ¹	Buckeye North	Central Buckeye	Sundance	Tartesso West	Westpark
Age-Restricted	-	\$4,424	\$4,799	\$4,668	\$2,324	\$7,705
Disc Meter 1.0"	1.0	\$7,076	\$7,675	\$7,467	\$3,717	\$12,323
Disc Meter 1.5"	2.0	\$14,153	\$15,351	\$14,934	\$7,434	\$24,647
Disc Meter 2.0"	3.2	\$22,644	\$24,561	\$23,894	\$11,895	\$39,435
Compound 3.0"	6.4	\$45,289	\$49,122	\$47,789	\$23,790	\$78,870
Turbine 3.0"	7.2	\$50,950	\$55,262	\$53,762	\$26,764	\$88,729
Compound 4.0"	10.0	\$70,764	\$76,753	\$74,670	\$37,172	\$123,234
Turbine 4.0"	20.0	\$141,527	\$153,506	\$149,339	\$74,344	\$246,469
Compound 6.0"	20.0	\$141,527	\$153,506	\$149,339	\$74,344	\$246,469
Turbine 6.0"	40.0	\$283,055	\$307,012	\$298,679	\$148,688	\$492,937

1. Buckeye Engineering Standards, Section 3-1.206

WATER FACILITIES DEVELOPMENT FEE REVENUE

Appendix A contains the forecast of revenues required by Arizona’s Enabling Legislation (ARS § 9-463.05(E)(7)). Projected fee revenue shown in Figure W13 is based on recent building permit data and the updated Water Facilities development fees. If development occurs at a faster rate than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs at a slower rate than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate. Projected development fee revenue is \$66.99 million over the next 10 years, and the total cost of water infrastructure is \$169.29 million.

Figure W13: Projected Water Facilities Development Fee Revenue

Service Area	Fee per EDU	10-Year EDU Increase	Projected Fee Revenue
Buckeye North	\$7,076	100	\$707,637
Central Buckeye	\$7,675	7,700	\$59,099,733
Sundance	\$7,467	100	\$746,697
Tartesso West	\$3,717	1,400	\$5,204,094
Westpark	\$12,323	100	\$1,232,343

Projected Fee Revenue	\$66,990,504
Total Expenditures	\$169,292,872
Remaining Share	\$102,302,368

WASTEWATER FACILITIES IIP

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

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

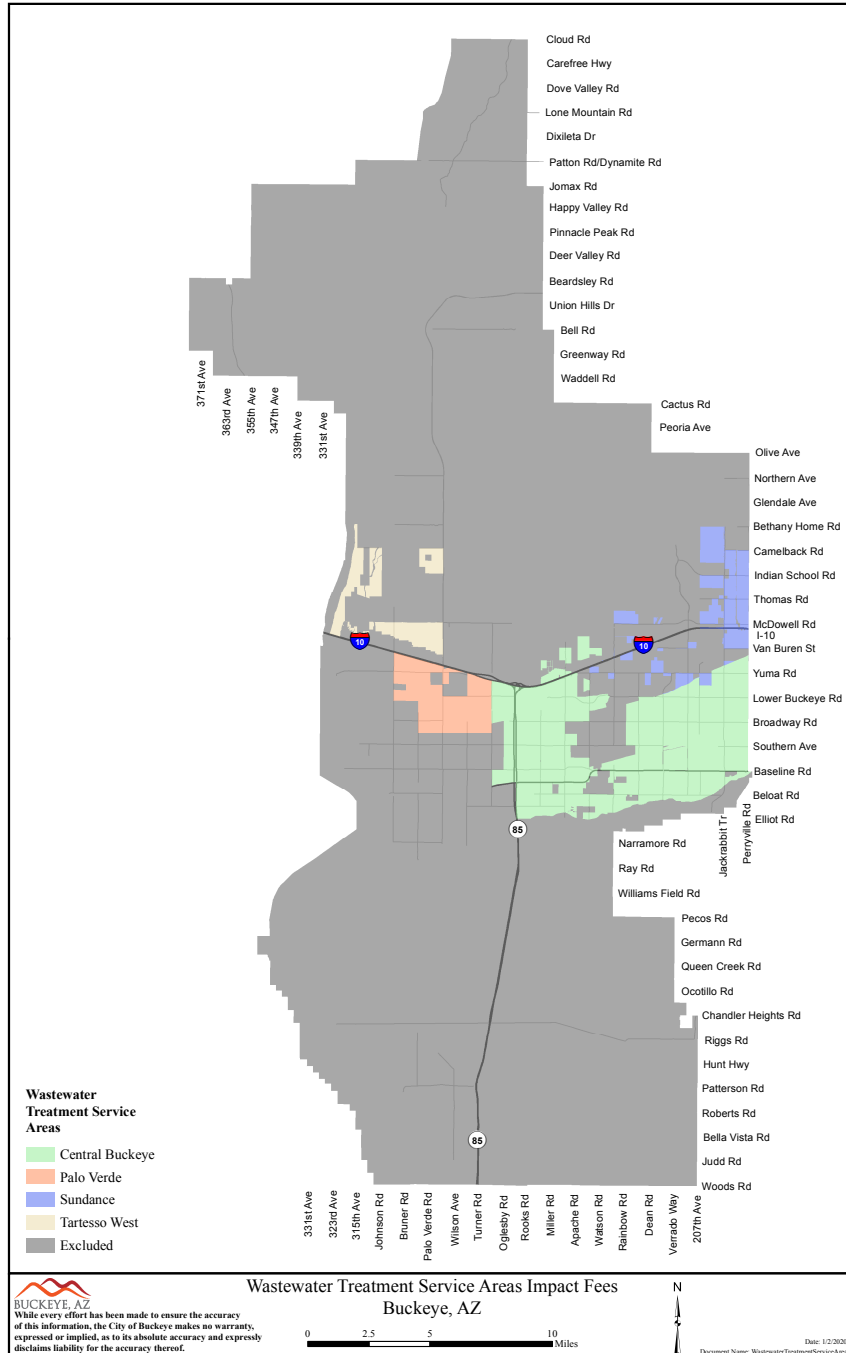
The Wastewater Facilities IIP include capital components for treatment, collection, reimbursement, and reclaimed water. The plan-based methodology is used for treatment, collection, and reclaimed water in the Central Buckeye and the Palo Verde service areas. The plan-based methodology is used for collection and reclaimed water in the Sundance service area. The cost recovery methodology is used in the Sundance, the Tartesso West, and the Watson Road CFD service areas. Appendix G includes a detailed list of wastewater capital components identified in Buckeye’s Integrated Water Master Plan (2017).

Service Areas

Treatment Service Areas

Shown below, Figure WW1 includes the treatment service areas.

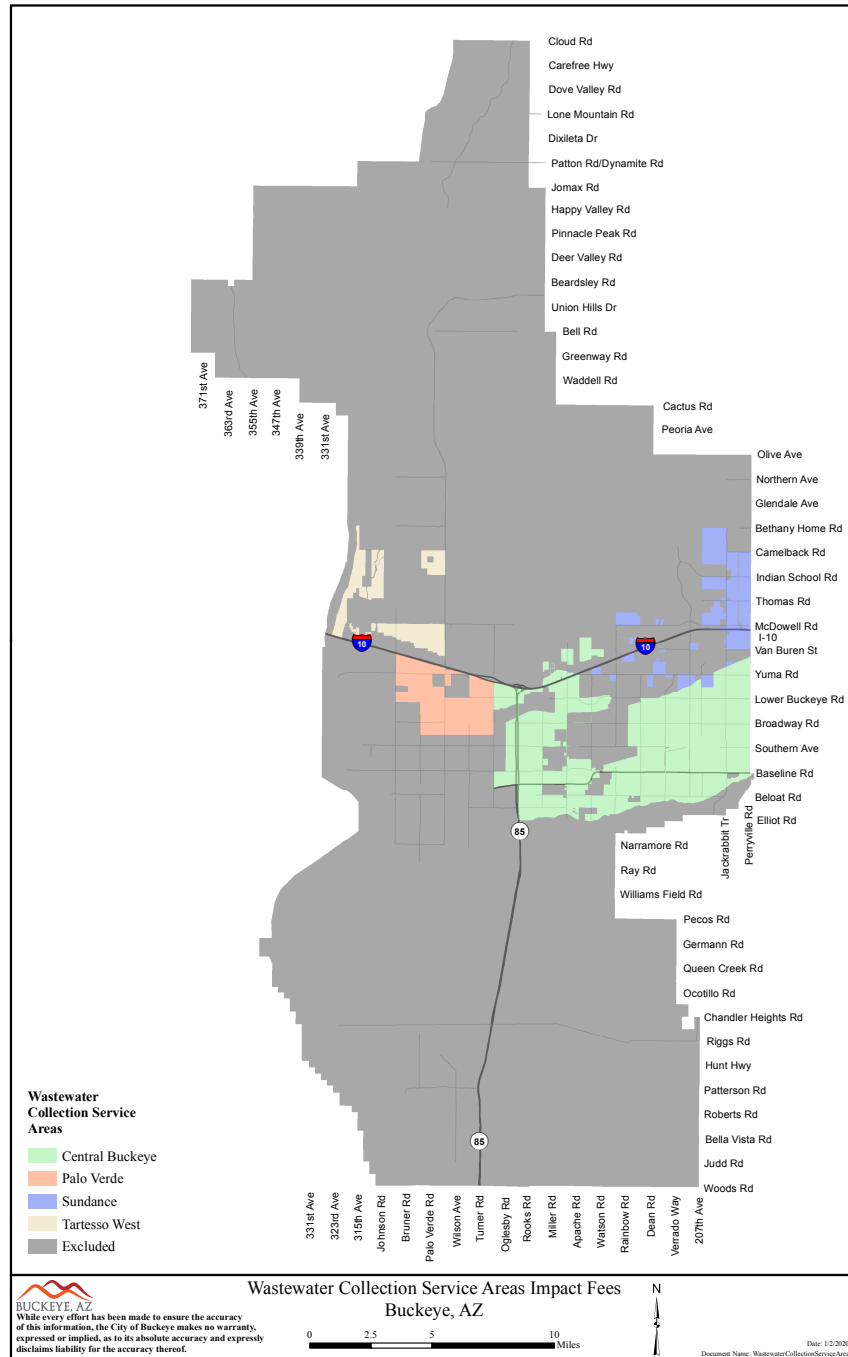
Figure WW1: Treatment Service Areas



Collection Service Areas

Shown below, Figure WW2 includes the collection service areas.

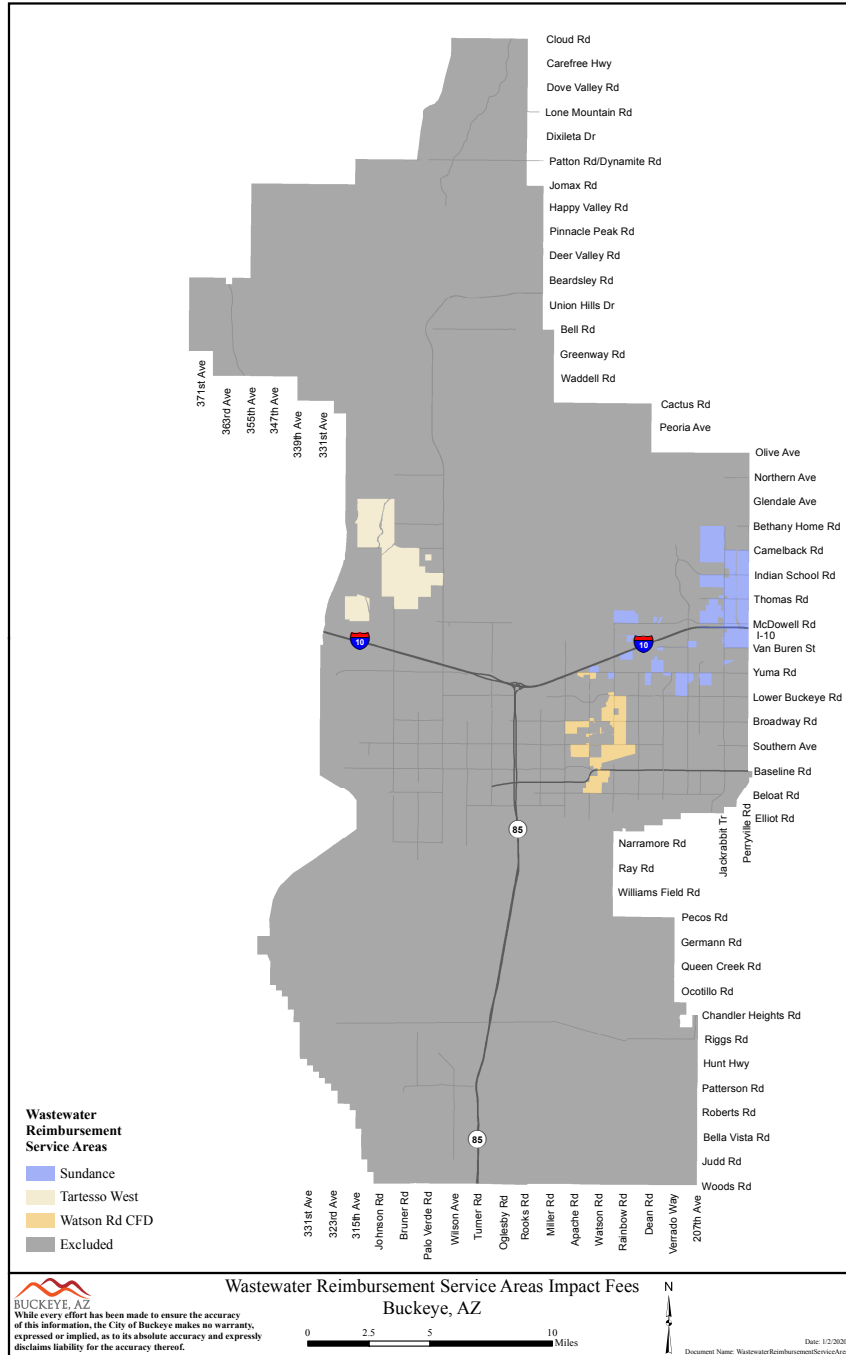
Figure WW2: Collection Service Areas



Reimbursement Service Areas

Shown below, Figure WW3 includes the reimbursement service areas.

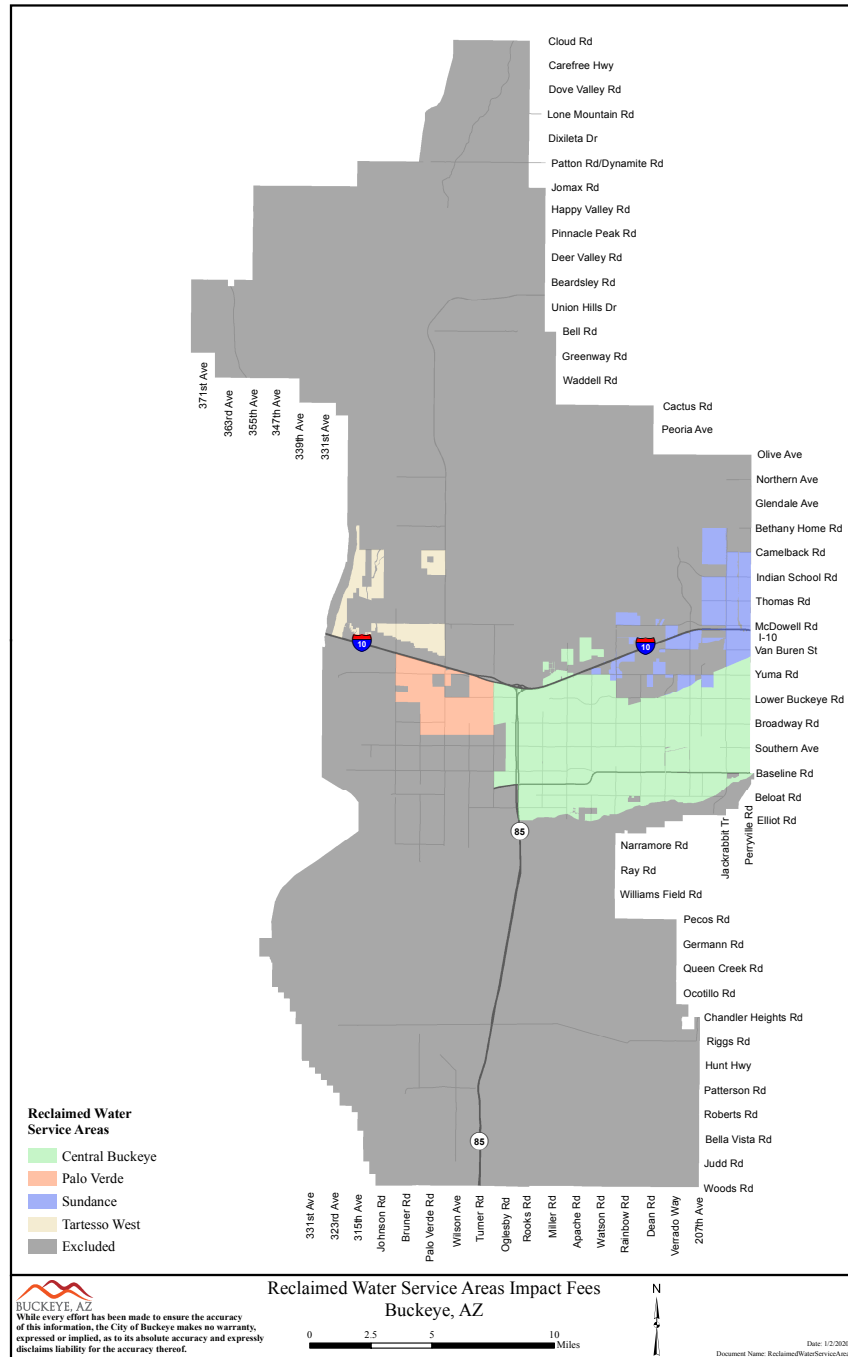
Figure WW3: Reimbursement Service Areas



Reclaimed Water Service Areas

Shown below, Figure WW4 includes the reclaimed water service areas.

Figure WW4: Reclaimed Water Service Areas



RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT

ARS § 9-463.05(E)(4) requires:

“A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial.”

Wastewater Flow Factors

Figure WW5 displays the demand indicators for residential land uses. Wastewater Facilities development fees are calculated using average day gallons of wastewater flows per single-family unit and the capital cost per gallon of system capacity – this represents an equivalent dwelling unit (EDU). Wastewater Facilities development fees paid by nonresidential development are derived from capacity ratios, according to the size of the new customer’s water meter, applied to the equivalent dwelling unit. Capacity ratios were obtained from the Buckeye Engineering Standards (Section 3-1.206).

Figure WW5: Wastewater Flow Factors

Land Use	Persons	Per Capita Flows	Treatment
Single-Family	3.2	75	240
Age-Restricted	2	75	150

Land Use	Persons	Per Capita Flows	Collection
Single-Family	3.2	80	256
Age-Restricted	2	80	160

Land Use	Persons	Per Capita Flows	Reclamation
Single-Family	3.2	67	214
Age-Restricted	2	67	134

Source: Engineering Department, City of Buckeye, Arizona.

Treatment Flow Factors

According to Buckeye’s Engineering Department, average day flows from residential development equal 75 gallons per person for treatment facilities. Based on 3.20 persons per single-family unit, average day flows from single-family units equal 240 gallons per day. A single-family unit represents an equivalent dwelling unit. For age-restricted units, the analysis uses 2.0 persons per unit and average day flows of 75 gallons per day to calculate average day flows of 150 gallons per day per age-restricted unit.

Collection Flow Factors

According to Buckeye’s Engineering Department, average day flows from residential development equal 80 gallons per person for collection facilities. Based on 3.20 persons per single-family unit, average day flows from single-family units equal 256 gallons per day. A single-family unit represents an equivalent dwelling unit. For age-restricted units, the analysis uses 2.0 persons per unit and average day flows of 80 gallons per day to calculate average day flows of 160 gallons per day per age-restricted unit.

Reclaimed Water Flow Factors

As explained in Buckeye’s Integrated Water Master Plan (2017), “The amount of reclaimed water available as a water resource is directly proportional to wastewater flows. A review of Buckeye’s flow records for the Central WWTP and Sundance WRF showed the reclaimed water produced is approximately 89 percent of the wastewater flow entering the plant.” Based on wastewater flows of 240 gallons per day per equivalent dwelling unit, and a reclaimed water conversion rate of 89 percent, single-family units generate approximately 214 gallons of reclaimed water flows per day (240 gallons of wastewater flows X 89 percent reclaimed water conversion rate). For age-restricted units, the analysis uses 134 gallons of reclaimed water flows per day (150 gallons of wastewater flows X 89 percent reclaimed water conversion rate).

ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES

ARS § 9-463.05(E)(1) requires:

“A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.”

ARS § 9-463.05(E)(2) requires:

“An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.”

Treatment

Within 10 years, Buckeye, or a development partner, plans to construct additional wastewater treatment facilities to serve future development. Figure WW6 includes cumulative costs and cumulative capacities of planned treatment facilities for each service area shown in Figure WW1. To calculate the cost per service unit (gallons) for each service area, costs are allocated to the additional capacity of each treatment facility. For example, treatment facilities in Central Buckeye cost \$13.80 per gallon (\$14,352,000 / 1,040,000 gallons). Appendix G includes a detailed list of planned wastewater treatment improvements identified in Buckeye’s Integrated Water Master Plan (2017).

Figure WW6: Treatment Cost per Gallon

Component	Service Area	Cost	Capacity (Gallons)	Cost per Gallon
Treatment	Central Buckeye	\$14,352,000	1,040,000	\$13.80
	Palo Verde	\$10,212,000	680,000	\$15.02
	Sundance	n/a	n/a	n/a
	Tartesso West	n/a	n/a	n/a
	Watson Road CFD	n/a	n/a	n/a
Total		\$24,564,000	1,720,000	

Source: Buckeye Integrated Water Master Plan (2017)

Collection

Within 10 years, Buckeye, or a development partner, plans to construct additional wastewater collection improvements to serve future development. Figure WW7 includes cumulative costs and cumulative capacities of planned collection improvements for each service area shown in Figure WW2. To calculate the cost per service unit (gallons) for each service area, costs are allocated to the additional capacity of each collection improvement. For example, collection improvements in Central Buckeye cost \$2.46 per gallon (\$12,307,406 / 5,000,000 gallons). Appendix G includes a detailed list of planned wastewater collection improvements identified in Buckeye’s Integrated Water Master Plan (2017).

Figure WW7: Collection Cost per Gallon

Component	Service Area	Cost	Capacity (Gallons)	Cost per Gallon
Collection	Central Buckeye	\$12,307,406	5,000,000	\$2.46
	Palo Verde	\$4,518,538	680,000	\$6.64
	Sundance	\$1,696,710	1,850,000	\$0.92
	Tartesso West	n/a	n/a	n/a
	Watson Road CFD	n/a	n/a	n/a
Total		\$18,522,653	7,530,000	

Source: Buckeye Integrated Water Master Plan (2017)

Reimbursement

Currently, excess capacity exists within the Sundance, Tartesso West, and Watson Road CFD service areas. Through development agreements, Buckeye collects development fees within these service areas to repay wastewater facility costs paid by developers. Figure WW8 includes outstanding costs and available capacities of existing water facilities for each service area shown in Figure WW3. To calculate the cost per service unit (gallons) for each service area, costs are allocated to the capacity of each wastewater facility.

In Sundance, the reimbursement includes expansion of the Sundance WRF and the associated sewer lines and lift station – this results in a cost of \$17.06 per gallon (\$36,854,775 / 2,160,000 gallons). For existing wastewater treatment and collection facilities in Tartesso West, the cost is \$23.97 per gallon (\$10,370,400 / 432,640 gallons). In the Watson Road CFD, there are two components to the reimbursement. The first component includes 3,000,000 gallons of treatment capacity at a cost of \$36,790,000 – \$12.26 per gallon. The second component includes collection improvements totaling 3,000,000 gallons of capacity and a cost of \$12,210,000 – \$4.07 per gallon. The Watson Road CFD components are shown separately since future development, based on the development agreement, may be required to pay one or both components. Appendix G includes a detailed list of Buckeye’s existing wastewater reimbursement agreements.

Figure WW8: Reimbursement Cost per Gallon

Component	Service Area	Cost	Capacity (Gallons)	Cost per Gallon
Reimbursement	Central Buckeye	n/a	n/a	n/a
	Palo Verde	n/a	n/a	n/a
	Sundance ¹	\$36,854,775	2,160,000	\$17.06
	Tartesso West	\$10,370,400	432,640	\$23.97
	Watson Road CFD ²	\$49,000,000	3,000,000	\$16.33
Total		\$96,225,175	5,592,640	

1. Sundance Expansion Owners do not pay this fee (Sundance Amendment #4)

2. Treatment is \$12.26 per gallon (\$36,790,000/3.0 MGD); Collection is \$4.07 per gallon (\$12,210,000/3.0 MGD)

Reclaimed Water

Within 10 years, Buckeye, or a development partner, plans to construct additional reclaimed water facilities to serve future development. Figure WW9 includes cumulative costs and cumulative capacities of planned reclaimed water facilities for each service area shown in Figure WW4. To calculate the cost per service unit (gallons) for each service area, costs are allocated to the additional capacity of each reclaimed water facility. For example, reclaimed water facilities in Central Buckeye cost \$1.27 per gallon (\$1,826,200 / 1,440,000 gallons). Appendix G includes a detailed list of planned reclaimed water facilities identified in Buckeye’s Integrated Water Master Plan (2017).

Figure WW9: Reclaimed Water Cost per Gallon

Component	Service Area	Cost	Capacity (Gallons)	Cost per Gallon
Reclaimed Water	Central Buckeye	\$1,826,200	1,440,000	\$1.27
	Palo Verde	\$2,657,880	576,000	\$4.61
	Sundance	\$1,030,630	1,000,000	\$1.03
	Tartesso West	n/a	n/a	n/a
	Watson Road CFD	n/a	n/a	n/a
Total		\$5,514,710	3,016,000	

Source: Buckeye Integrated Water Master Plan (2017)

Summary

Shown below, the top of Figure WW10 includes cumulative growth-related costs by service area and by fee component. The bottom of Figure WW10 includes the cost per gallon by service area and by fee component. The total cost per gallon for each service area, shaded gray, is used to calculate the capacity fees discussed in the next section.

Figure WW10: Total Cost per Gallon

Service Area	Treatment	Collection	Reimbursement	Reclaimed Water	Total
Central Buckeye	\$14,352,000	\$12,307,406	n/a	\$1,826,200	\$28,485,606
Palo Verde	\$10,212,000	\$4,518,538	n/a	\$2,657,880	\$17,388,418
Sundance	n/a	\$1,696,710	\$36,854,775	\$1,030,630	\$39,582,115
Tartesso West	n/a	n/a	\$10,370,400	n/a	\$10,370,400
Watson Rd CFD	n/a	n/a	\$49,000,000	n/a	\$49,000,000
Total	\$24,564,000	\$18,522,653	\$96,225,175	\$5,514,710	\$144,826,539

Service Area	Treatment	Collection	Reimbursement	Reclaimed Water	Total
Central Buckeye	\$13.80	\$2.46	n/a	\$1.27	\$17.53
Palo Verde	\$15.02	\$6.64	n/a	\$4.61	\$26.27
Sundance	n/a	\$0.92	\$17.06	\$1.03	\$19.01
Tartesso West	n/a	n/a	\$23.97	n/a	\$23.97
Watson Rd CFD	n/a	n/a	\$16.33	n/a	\$16.33

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(5) requires:

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

ARS § 9-463.05(E)(6) requires:

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

Wastewater Flows

Based on recent permit data, Buckeye expects an additional 1,900 EDUs in the treatment service areas, 1,800 EDUs in the collection service areas, 4,800 EDUs in the reimbursement service areas, and 4,100 EDUs in the reclaimed water service areas over the next 10 years.

Figure WW11: Projected Wastewater EDUs

Service Area	Treatment	Collection	Reimbursement	Reclaimed Water
Central Buckeye	1,700	1,600	0	3,900
Palo Verde	100	100	0	100
Sundance	100	100	100	100
Tartesso West	0	0	1,400	0
Watson Rd CFD	0	0	3,300	0
Total	1,900	1,800	4,800	4,100

WASTEWATER FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is not necessary for Wastewater Facilities development fees, because costs generated by projected development exceed revenues generated by projected development. Appendix A contains the forecast of revenues required by Arizona’s Enabling Legislation (ARS § 9-463.05(E)(7)).

Wastewater Treatment Facilities Development Fees

Infrastructure standards and cost factors for Wastewater Treatment Facilities are summarized in the upper portion of Figure WW12. Residential fees are calculated by multiplying the average day wastewater flows per equivalent dwelling unit by the cost per gallon of capacity. For example, the calculation for a single-family unit (one-inch meter) in Central Buckeye is 240 average day gallons multiplied by \$13.80 per gallon of capacity. This results in a Central Buckeye Wastewater Treatment Facilities development fee of \$3,312 per EDU.

Nonresidential fees are based on size and type of water meter. The capacity ratios by meter size and type are from the Buckeye Engineering Standards (Section 3-1.206). The average day wastewater flows of an average single-family unit are used as the basis of the calculation. For future development in Central Buckeye with a two-inch disc meter, the Wastewater Treatment Facilities development fee is \$10,598 (240 average day gallons X \$13.80 per gallon of capacity X 3.2 capacity ratio).

Figure WW12: Schedule of Wastewater Treatment Facilities Development Fees

Wastewater Treatment Flow Factors	
Gallons per EDU	240
Gallons per Age-Restricted	150

Cost per Gallon of Capacity	
Central Buckeye	\$13.80
Palo Verde	\$15.02
Sundance	n/a
Tartesso West	n/a
Watson Rd CFD	n/a

Fees per Meter						
Meter Type and Size (inches)	Capacity Ratio ¹	Central Buckeye	Palo Verde	Sundance	Tartesso West	Watson Road CFD
Age-Restricted	-	\$2,070	\$2,253	n/a	n/a	n/a
Disc Meter 1.0"	1.0	\$3,312	\$3,605	n/a	n/a	n/a
Disc Meter 1.5"	2.0	\$6,624	\$7,210	n/a	n/a	n/a
Disc Meter 2.0"	3.2	\$10,598	\$11,535	n/a	n/a	n/a
Compound 3.0"	6.4	\$21,197	\$23,071	n/a	n/a	n/a
Turbine 3.0"	7.2	\$23,846	\$25,955	n/a	n/a	n/a
Compound 4.0"	10.0	\$33,120	\$36,048	n/a	n/a	n/a
Turbine 4.0"	20.0	\$66,240	\$72,096	n/a	n/a	n/a
Compound 6.0"	20.0	\$66,240	\$72,096	n/a	n/a	n/a
Turbine 6.0"	40.0	\$132,480	\$144,192	n/a	n/a	n/a

1. Buckeye Engineering Standards, Section 3-1.206

Wastewater Collection Facilities Development Fees

Infrastructure standards and cost factors for Wastewater Collection Facilities are summarized in the upper portion of Figure WW13. Residential fees are calculated by multiplying the average day wastewater flows per equivalent dwelling unit by the cost per gallon of capacity. For example, the calculation for a single-family unit (one-inch meter) in Central Buckeye is 256 average day gallons multiplied by \$2.46 per gallon of capacity. This results in a Central Buckeye Wastewater Collection Facilities development fee of \$630 per EDU.

Nonresidential fees are based on size and type of water meter. The capacity ratios by meter size and type are from the Buckeye Engineering Standards (Section 3-1.206). The average day wastewater flows of an average single-family unit are used as the basis of the calculation. For future development in Central Buckeye with a two-inch disc meter, the Wastewater Collection Facilities development fee is \$2,015 (256 average day gallons X \$2.46 per gallon of capacity X 3.2 capacity ratio).

Figure WW13: Schedule of Wastewater Collection Facilities Development Fees

Wastewater Collection Flow Factors	
Gallons per EDU	256
Gallons per Age-Restricted	160

Cost per Gallon of Capacity	
Central Buckeye	\$2.46
Palo Verde	\$6.64
Sundance	\$0.92
Tartesso West	n/a
Watson Rd CFD	n/a

Fees per Meter						
Meter Type and Size (inches)	Capacity Ratio ¹	Central Buckeye	Palo Verde	Sundance	Tartesso West	Watson Road CFD
Age-Restricted	-	\$394	\$1,062	\$147	n/a	n/a
Disc Meter 1.0"	1.0	\$630	\$1,700	\$236	n/a	n/a
Disc Meter 1.5"	2.0	\$1,260	\$3,400	\$471	n/a	n/a
Disc Meter 2.0"	3.2	\$2,015	\$5,439	\$754	n/a	n/a
Compound 3.0"	6.4	\$4,030	\$10,879	\$1,507	n/a	n/a
Turbine 3.0"	7.2	\$4,534	\$12,239	\$1,696	n/a	n/a
Compound 4.0"	10.0	\$6,298	\$16,998	\$2,355	n/a	n/a
Turbine 4.0"	20.0	\$12,595	\$33,997	\$4,710	n/a	n/a
Compound 6.0"	20.0	\$12,595	\$33,997	\$4,710	n/a	n/a
Turbine 6.0"	40.0	\$25,190	\$67,994	\$9,421	n/a	n/a

1. Buckeye Engineering Standards, Section 3-1.206

Wastewater Reimbursement Facilities Development Fees

Infrastructure standards and cost factors for Wastewater Reimbursement Facilities are summarized in the upper portion of Figure WW14. Residential fees are calculated by multiplying the average day wastewater flows per equivalent dwelling unit by the cost per gallon of capacity. For example, the calculation for a single-family unit (one-inch meter) in Tartesso West is 320 average day gallons multiplied by \$23.97 per gallon of capacity. This results in a Tartesso West Wastewater Reimbursement Facilities development fee of \$7,670 per EDU.

Nonresidential fees are based on size and type of water meter. The capacity ratios by meter size and type are from the Buckeye Engineering Standards (Section 3-1.206). The average day wastewater flows of an average single-family unit are used as the basis of the calculation. For future development in Tartesso West with a two-inch disc meter, the Wastewater Reimbursement Facilities development fee is \$24,545 (320 average day gallons X \$23.97 per gallon of capacity X 3.2 capacity ratio).

Figure WW14: Schedule of Wastewater Reimbursement Facilities Development Fees

Wastewater Reimbursement Flow Factors	
Gallons per EDU	320
Gallons per Age-Restricted	200

Cost per Gallon of Capacity	
Central Buckeye	n/a
Palo Verde	n/a
Sundance	\$17.06
Tartesso West	\$23.97
Watson Rd CFD	\$16.33

Fees per Meter						
Meter Type and Size (inches)	Capacity Ratio ¹	Central Buckeye	Palo Verde	Sundance	Tartesso West	Watson Road CFD ²
Age-Restricted	-	n/a	n/a	\$3,412	\$4,794	\$3,103
Disc Meter 1.0"	1.0	n/a	n/a	\$5,459	\$7,670	\$4,965
Disc Meter 1.5"	2.0	n/a	n/a	\$10,918	\$15,341	\$9,930
Disc Meter 2.0"	3.2	n/a	n/a	\$17,469	\$24,545	\$15,888
Compound 3.0"	6.4	n/a	n/a	\$34,939	\$49,091	\$31,777
Turbine 3.0"	7.2	n/a	n/a	\$39,306	\$55,227	\$35,749
Compound 4.0"	10.0	n/a	n/a	\$54,592	\$76,704	\$49,651
Turbine 4.0"	20.0	n/a	n/a	\$109,184	\$153,408	\$99,302
Compound 6.0"	20.0	n/a	n/a	\$109,184	\$153,408	\$99,302
Turbine 6.0"	40.0	n/a	n/a	\$218,368	\$306,816	\$198,605

1. Buckeye Engineering Standards, Section 3-1.206

2. Treatment component (\$12.26) of reimbursement uses 320 gallons, collection component (\$4.07) uses 256 gallons

Reclaimed Water Facilities Development Fees

Infrastructure standards and cost factors for Reclaimed Water Facilities are summarized in the upper portion of Figure WW15. Residential fees are calculated by multiplying the average day reclaimed water flows per equivalent dwelling unit by the cost per gallon of capacity. For example, the calculation for a single-family unit (one-inch meter) in Central Buckeye is 214 average day gallons multiplied by \$1.27 per gallon of capacity. This results in a Central Buckeye Reclaimed Water Facilities development fee of \$272 per EDU.

Nonresidential fees are based on size and type of water meter and their restrictive capacity. The capacity ratios by meter size and type are from the Buckeye Engineering Standards (Section 3-1.206). The average day reclaimed water flows of an average single-family unit are used as the basis of the calculation. For future development in Central Buckeye with a two-inch disc meter, the Reclaimed Water Facilities development fee is \$870 (214 average day gallons X \$1.27 per gallon of capacity X 3.2 capacity ratio).

Figure WW15: Schedule of Reclaimed Water Facilities Development Fees

Reclaimed Water Flow Factors	
Gallons per EDU	214
Gallons per Age-Restricted	134

Cost per Gallon of Capacity	
Central Buckeye	\$1.27
Palo Verde	\$4.61
Sundance	\$1.03
Tartesso West	n/a
Watson Rd CFD	n/a

Fees per Meter						
Meter Type and Size (inches)	Capacity Ratio ¹	Central Buckeye	Palo Verde	Sundance	Tartesso West	Watson Road CFD
Age-Restricted	-	\$170	\$618	\$138	n/a	n/a
Disc Meter 1.0"	1.0	\$272	\$987	\$220	n/a	n/a
Disc Meter 1.5"	2.0	\$544	\$1,973	\$441	n/a	n/a
Disc Meter 2.0"	3.2	\$870	\$3,157	\$705	n/a	n/a
Compound 3.0"	6.4	\$1,739	\$6,314	\$1,411	n/a	n/a
Turbine 3.0"	7.2	\$1,957	\$7,103	\$1,587	n/a	n/a
Compound 4.0"	10.0	\$2,718	\$9,865	\$2,204	n/a	n/a
Turbine 4.0"	20.0	\$5,436	\$19,731	\$4,408	n/a	n/a
Compound 6.0"	20.0	\$5,436	\$19,731	\$4,408	n/a	n/a
Turbine 6.0"	40.0	\$10,871	\$39,462	\$8,817	n/a	n/a

1. Buckeye Engineering Standards, Section 3-1.206

Total Wastewater Facilities Development Fees

Shown below, Figure WW16 includes the total proposed Wastewater Facilities development fees. These fees include the proposed Wastewater Treatment Facilities development fees shown in Figure WW12, the proposed Wastewater Collection Facilities development fees shown in Figure WW13, the proposed Wastewater Reimbursement Facilities development fees shown in Figure WW14, and the proposed Reclaimed Water Facilities development fees shown in Figure WW15.

Figure WW16: Schedule of Total Proposed Wastewater Facilities Development Fees

Fees per Meter						
Meter Type and Size (inches)	Capacity Ratio ¹	Central Buckeye	Palo Verde	Sundance	Tartesso West	Watson Road CFD
Age-Restricted		\$2,634	\$3,933	\$3,697	\$4,794	\$3,103
Disc Meter 1.0"	1.0	\$4,214	\$6,291	\$5,915	\$7,670	\$4,965
Disc Meter 1.5"	2.0	\$8,427	\$12,582	\$11,830	\$15,341	\$9,930
Disc Meter 2.0"	3.2	\$13,483	\$20,132	\$18,928	\$24,545	\$15,888
Compound 3.0"	6.4	\$26,967	\$40,264	\$37,857	\$49,091	\$31,777
Turbine 3.0"	7.2	\$30,337	\$45,296	\$42,589	\$55,227	\$35,749
Compound 4.0"	10.0	\$42,135	\$62,912	\$59,151	\$76,704	\$49,651
Turbine 4.0"	20.0	\$84,271	\$125,824	\$118,303	\$153,408	\$99,302
Compound 6.0"	20.0	\$84,271	\$125,824	\$118,303	\$153,408	\$99,302
Turbine 6.0"	40.0	\$168,542	\$251,647	\$236,606	\$306,816	\$198,605

1. Buckeye Engineering Standards, Section 3-1.206

WASTEWATER FACILITIES DEVELOPMENT FEE REVENUE

Appendix A contains the forecast of revenues required by Arizona’s Enabling Legislation (ARS § 9-463.05(E)(7)). Projected fee revenue shown in Figure WW17 is based on recent building permit data and the proposed Wastewater Facilities development fees. If development occurs at a faster rate than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs at a slower rate than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate. Projected development fee revenue is \$36.04 million over the next 10 years, and the total cost of wastewater infrastructure is \$144.83 million.

Figure WW17: Projected Wastewater Facilities Development Fee Revenue

Treatment			
Service Area	Fee per EDU	10-Year EDU Increase	Projected Fee Revenue
Central Buckeye	\$3,312	1,700	\$5,630,400
Palo Verde	\$3,605	100	\$360,480
Sundance	\$0	100	\$0
Tartesso West	\$0	0	\$0
Watson Rd CFD	\$0	0	\$0
Collection			
Service Area	Fee per EDU	10-Year EDU Increase	Projected Fee Revenue
Central Buckeye	\$630	1,600	\$1,007,616
Palo Verde	\$1,700	100	\$169,984
Sundance	\$236	100	\$23,552
Tartesso West	\$0	0	\$0
Watson Rd CFD	\$0	0	\$0
Reimbursement			
Service Area	Fee per EDU	10-Year EDU Increase	Projected Fee Revenue
Central Buckeye	\$0	0	\$0
Palo Verde	\$0	0	\$0
Sundance	\$5,459	100	\$545,920
Tartesso West	\$7,670	1,400	\$10,738,560
Watson Rd CFD	\$4,965	3,300	\$16,384,896
Reclaimed Water			
Service Area	Fee per EDU	10-Year EDU Increase	Projected Fee Revenue
Central Buckeye	\$272	3,900	\$1,059,942
Palo Verde	\$987	100	\$98,654
Sundance	\$220	100	\$22,042
Tartesso West	\$0	0	\$0
Watson Rd CFD	\$0	0	\$0

Projected Fee Revenue	\$36,042,046
Total Expenditures	\$144,826,539
Remaining Share	\$108,784,493

APPENDIX A: FORECAST OF REVENUES OTHER THAN FEES

ARS § 9-463.05(E)(7) requires:

“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.”

ARS § 9-463.05(B)(12) states,

“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.”

REVENUE PROJECTIONS

Buckeye does not have a higher than normal construction excise tax rate; therefore, the required offset described above is not applicable. The required forecast of non-development fee revenue that might be used for growth-related capital costs is shown in Figure A1. TischlerBise used Buckeye’s FY 19-20 Budget for estimates from FY 15-16 through FY 19-20 and projected revenues through FY 23-24 based on a trend analysis. These funds are available for capital investments; however, the City of Buckeye directs these revenues to non-development fee eligible capital needs including maintenance, repair, and replacement. Figure A2 includes operating revenues per person and job. Overall, General Fund revenues increase slightly per person and job while Special Revenue Fund revenues and Enterprise Fund Revenues decrease slightly per person and job.

Only revenue generated by future development that is dedicated to growth-related capital improvements needs to be considered in determining the extent of the burden imposed by future development. Offsets against development fees are warranted in the following cases: (1) future development will be paying taxes or fees used to retire debt on existing facilities serving existing development; (2) future development will be paying taxes or fees used to fund an existing deficiency, or (3) future development will be paying taxes or fees that are dedicated to be used for growth-related improvements. The analysis in this report did not identify the need for offsets against the fees. Projected revenues are shown in Figure A1.

Figure A1: Projected Non-Development Fee Revenue

City of Buckeye Schedule of Operating Revenues for FY 19-20									
General Fund Revenues	Actual			Budget FY 18-19	Proposed FY 19-20	Projected			
	FY 15-16	FY 16-17	FY 17-18			FY 20-21	FY 21-22	FY 22-23	FY 23-24
Local TPT - Less Construction	16,458,807	16,924,287	18,059,851	19,600,000	21,161,700	21,893,978	23,007,840	24,184,437	25,428,263
Local TPT - Construction	5,542,047	9,279,151	11,679,960	11,300,000	14,191,800	15,712,521	17,426,655	19,237,331	21,151,467
TPT Recoveries	30,994	13,826	4,474	7,000	5,000	(3,718)	(8,872)	(14,316)	(20,071)
Local TPT	22,031,848	26,217,264	29,744,285	30,907,000	35,358,500	37,602,781	40,425,623	43,407,452	46,559,658
State Shared Sales Tax	4,885,632	5,744,180	6,239,614	6,414,370	7,337,000	7,673,685	8,173,521	8,701,508	9,259,664
Urban Revenue Sharing	6,125,464	7,656,457	8,004,917	7,933,912	9,196,000	9,537,195	10,102,939	10,700,547	11,332,301
Auto Lieu Tax	2,130,796	2,465,452	2,685,444	2,856,034	3,172,000	3,355,162	3,578,775	3,814,983	4,064,687
State Shared Revenues	13,141,892	15,866,089	16,929,975	17,204,316	19,705,000	20,566,041	21,855,235	23,217,038	24,656,652
Property Tax	5,735,301	6,117,704	6,733,531	7,897,452	9,141,150	9,579,773	10,371,609	11,208,042	12,092,268
Franchise Fees & Leases	2,962,205	3,081,219	3,265,341	3,327,900	3,670,380	3,728,627	3,879,339	4,038,540	4,206,837
Building & Planning Fees	6,427,015	9,642,437	10,580,828	11,720,000	12,500,000	14,127,826	15,403,208	16,750,421	18,174,612
Licenses & Fees	714,731	804,093	929,852	953,200	960,300	1,051,776	1,109,626	1,170,735	1,235,335
Charges for Services	2,574,289	2,658,002	2,856,945	2,888,250	3,077,100	3,158,379	3,270,461	3,388,855	3,514,015
Interest Revenues	622,786	232,492	(61,804)	894,300	1,000,000	985,104	1,129,472	1,281,970	1,443,183
All Other Revenues	156,267	373,691	323,893	110,325	326,750	263,230	264,857	266,576	268,393
General Fund Revenues	54,366,334	64,992,991	71,302,846	75,902,743	85,739,180	91,063,536	97,709,430	104,729,630	112,150,953

Special Revenue Fund Revenues	Actual			Budget FY 18-19	Proposed FY 19-20	Projected			
	FY 15-16	FY 16-17	FY 17-18			FY 20-21	FY 21-22	FY 22-23	FY 23-24
CDBG Grant Contribution State	139,438	298,562	-	689,000	700,000	711,612	723,862	736,802	750,481
Highway Users Revenue Fund (HURF)	3,651,846	4,318,750	4,294,153	4,145,414	4,799,380	4,809,493	4,992,580	5,185,980	5,390,429
Special Revenue Fund Revenues	3,791,284	4,617,312	4,294,153	4,834,414	5,499,380	5,521,104	5,716,442	5,922,781	6,140,911

Enterprise Fund Revenues	Actual			Budget FY 18-19	Proposed FY 19-20	Projected			
	FY 15-16	FY 16-17	FY 17-18			FY 20-21	FY 21-22	FY 22-23	FY 23-24
Water User Fees	24,347,627	25,682,057	26,342,459	28,777,000	31,129,480	31,999,922	33,530,275	35,146,819	36,855,730
Wastewater User Fees	9,070,993	8,535,682	9,753,204	10,183,300	10,915,509	11,235,743	11,733,799	12,259,906	12,816,073
Enterprise Fund Revenues	33,418,620	34,217,739	36,095,663	38,960,300	42,044,989	43,235,665	45,264,073	47,406,725	49,671,804

Figure A2: Projected Non-Development Fee Revenue per Person and Job

City of Buckeye									
Operating Revenues per Person and Job									
General Fund Revenues	Actual			Budget FY 18-19	Proposed FY 19-20	Projected			
	FY 15-16	FY 16-17	FY 17-18			FY 20-21	FY 21-22	FY 22-23	FY 23-24
Local TPT - Less Construction	210	203	201	200	205	201	200	199	199
Local TPT - Construction	71	112	130	115	137	144	152	159	165
TPT Recoveries	0	0	0	0	0	(0)	(0)	(0)	(0)
Local TPT	281	315	331	315	342	345	352	358	364
State Shared Sales Tax	62	69	69	65	71	70	71	72	72
Urban Revenue Sharing	78	92	89	81	89	87	88	88	89
Auto Lieu Tax	27	30	30	29	31	31	31	31	32
State Shared Revenues	168	191	189	176	191	189	190	192	193
Property Tax	73	74	75	81	88	88	90	92	95
Franchise Fees & Leases	38	37	36	34	36	34	34	33	33
Building & Planning Fees	82	116	118	120	121	130	134	138	142
Licenses & Fees	9	10	10	10	9	10	10	10	10
Charges for Services	33	32	32	29	30	29	28	28	27
Interest Revenues	8	3	(1)	9	10	9	10	11	11
All Other Revenues	2	4	4	1	3	2	2	2	2
General Fund Revenues	693	781	794	774	830	835	850	864	877

Special Revenue Fund Revenues	Actual			Budget FY 18-19	Proposed FY 19-20	Projected			
	FY 15-16	FY 16-17	FY 17-18			FY 20-21	FY 21-22	FY 22-23	FY 23-24
CDBG Grant Contribution State	2	4	0	7	7	7	6	6	6
Highway Users Revenue Fund (HURF)	47	52	48	42	46	44	43	43	42
Special Revenue Fund Revenues	48	55	48	49	53	51	50	49	48

Enterprise Fund Revenues	Actual			Budget FY 18-19	Proposed FY 19-20	Projected			
	FY 15-16	FY 16-17	FY 17-18			FY 20-21	FY 21-22	FY 22-23	FY 23-24
Water User Fees	311	309	293	294	301	294	292	290	288
Wastewater User Fees	116	103	109	104	106	103	102	101	100
Enterprise Fund Revenues	426	411	402	397	407	397	394	391	388

APPENDIX B: PROFESSIONAL SERVICES

As stated in Arizona’s development fee enabling legislation, “a municipality may assess development fees to offset costs to the municipality associated with providing necessary public services to a development, including the costs of infrastructure, improvements, real property, engineering and architectural services, financing and professional services required for the preparation or revision of a development fee pursuant to this section, including the relevant portion of the infrastructure improvements plan” (see ARS § 9-463.05.A). Because development fees must be updated at least every five years, the cost of professional services is allocated to the projected increase in service units, over five years (see Figure B1). Qualified professionals must develop the IIP, using generally accepted engineering and planning practices. A qualified professional is defined as “a professional engineer, surveyor, financial analyst or planner providing services within the scope of the person's license, education or experience”.

Figure B1: Cost of Professional Services

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Increase	Cost per Service Unit
Fire	\$28,948	Residential	82%	Peak Population	24,575	\$0.97
		Nonresidential	18%	Jobs	4,825	\$1.08
Library	\$28,948	Residential	94%	Peak Population	24,575	\$1.11
		Nonresidential	6%	Jobs	4,823	\$0.36
Parks and Recreational	\$28,948	Residential	94%	Peak Population	24,575	\$1.11
		Nonresidential	6%	Jobs	4,823	\$0.36
Police	\$28,948	Residential	82%	Peak Population	24,575	\$0.97
		Nonresidential	18%	Vehicle Trip	18,743	\$0.28
Street	\$28,948	All Development	100%	VMT	209,168	\$0.14
Total	\$144,740					

APPENDIX C: LAND USE ASSUMPTIONS

The estimates and projections of residential and nonresidential development in this *Land Use Assumptions* document are for areas within the boundaries of the City of Buckeye. The maps in Appendix D illustrate the areas within the City of Buckeye Service Area boundaries.

Arizona's Development Fee Act requires the preparation of Land Use Assumptions, which are defined in Arizona Revised Statutes § 9-463.05(T)(6) 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.”

The City of Buckeye, Arizona retained TischlerBise to analyze the impacts of development on its capital facilities and to calculate development impact fees based on that analysis. TischlerBise prepared current demographic estimates and future development projections for both residential and nonresidential development that will be used in the Infrastructure Improvements Plan (IIP) and calculation of the development fees. Current demographic data estimates for 2018 are used in calculating levels of service (LOS) provided to existing development in the City of Buckeye. Arizona's Enabling Legislation requires fees to be updated at least every five years and limits the IIP to a maximum of 10 years.

SUMMARY OF GROWTH INDICATORS

Key land use assumptions for the City of Buckeye development fee study are population, housing units, and employment projections. Based on discussions with staff, TischlerBise estimates housing units by combining building permit data with Maricopa Association of Governments (MAG) 2015-2030 projections. TischlerBise derives population estimates by converting annual housing unit increases to population using persons per household factors. For nonresidential development, the base year employment estimate is calculated based on MAG 2015 and 2020 estimates. The MAG 2015-2030 average annual growth rates are applied to the base year employment estimate to project future employment by industry sector. The employment estimate is converted into floor area based on average square feet per job multipliers. Four nonresidential development prototypes are discussed further below (see Figure C4 and related text). The projections contained in this document provide the foundation for the Development Fee Report. These metrics are the service units and demand indicators used in the Development Fee Report.

Development projections and growth rates are summarized in Figure C9. These projections will be used to estimate development fee revenue and to indicate the anticipated need for growth-related infrastructure. However, development fee methodologies are designed to reduce sensitivity to development projections in the determination of the proportionate share fee amounts. If actual development is slower than projected, fee revenue will decline, but so will the need for growth-related infrastructure. In contrast, if development is faster than anticipated, Buckeye will receive an increase in fee revenue, but will also need to accelerate infrastructure improvements to keep pace with the actual rate of development.

During the next 10 years, citywide development projections indicate an average increase of approximately 1,800 housing units per year and approximately 548,000 square feet of nonresidential floor area per year.

RESIDENTIAL DEVELOPMENT

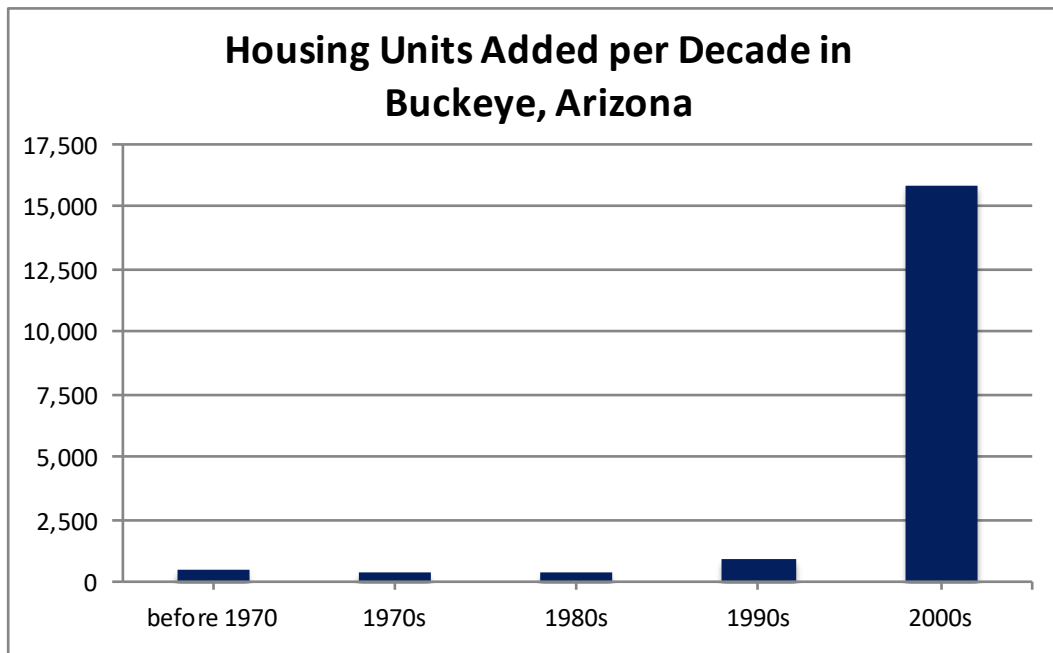
Current estimates and future projections of residential development are detailed in this section including population and housing units by type.

Recent Residential Construction

Development fees require an analysis of current levels of service. For residential development, current levels of service are determined using estimates of population and housing units. Shown below, Figure C1 indicates the estimated number of housing units added by decade according to data obtained from the U.S. Census Bureau. Buckeye experienced strong growth from 2000 to 2010, when housing inventory increased by an average of 1,586 units per year.

Figure C1: Housing Units by Decade

Census 2010 Population ¹	50,876	From 2000 to 2010, Buckeye's housing stock increased by an average of 1,586 housing units per year.
Census 2010 Housing Units ¹	18,207	
Total Housing Units in 2000 ²	2,344	
New Housing Units	15,863	



1. U.S. Census Bureau, Census 2010 Summary File 1.

2. Census Bureau, Census 2000 Summary File 1.

Source for 1990s and earlier is Table B25034, 2011-2015 ACS 5-Year Estimates, adjusted to total units in 20

Household Size

According to the U.S. Census Bureau, a household is a housing unit occupied by year-round residents. Development fees often use per capita standards and persons per housing unit (PPHU) or persons per household (PPH) to derive proportionate share fee amounts. When PPHU is used in the fee calculations, infrastructure standards are derived using year-round population. When PPH is used in the fee calculations, the development fee methodology assumes a higher percentage of housing units will be occupied, thus requiring seasonal or peak population to be used when deriving infrastructure standards. TischlerBise recommends that development fees for residential development in Buckeye be imposed according to the number of persons per household.

Occupancy calculations require data on population and the types of units by structure. The 2010 census did not obtain detailed information using a “long-form” questionnaire. Instead, the U.S. Census Bureau switched to a continuous monthly mailing of surveys, known as the American Community Survey (ACS), which has limitations due to sample-size constraints. For example, data on detached housing units are now combined with attached single units (commonly known as townhouses). For development fees in Buckeye, detached stick-built units and attached units (commonly known as townhouses, which share a common sidewall, but are constructed on an individual parcel of land) are included in the “Single-Family Unit” category. The second residential category includes duplexes and all other structures with two or more units on an individual parcel of land. This category is referred to as “Multi-Family Unit.”

Figure C2 below shows the occupancy estimates for Buckeye based on Buckeye’s Water and Sewer Design Guidelines. Single-family units average 3.20 persons per household and multi-family units average 2.50 persons per household. Based on American Community Survey 2012-2016 5-Year Estimates, Buckeye’s housing units were 95 percent single-family units and five percent multi-family units. Applying the housing unit mix to occupancy characteristics outlined in Buckeye’s Water and Sewer Design Guidelines results in a weighted average of 3.17 persons per household.

Figure C2: Persons per Household

Type of Structure	Persons per Household
Single-Family Units ¹	3.20
Multi-Family Units ¹	2.50
Weighted Average²	3.17

1. Buckeye Water and Sewer Design Guidelines

1. TischlerBise calculation based on ACS housing mix

Population Estimates

To determine current and future peak population in Buckeye, TischlerBise applies occupancy factors shown in Figure C2 to Maricopa Association of Governments (MAG) housing unit data. In 2016, MAG released projections through 2050 by Traffic Analysis Zone (TAZ), along with annual updates of housing unit and population estimates. TischlerBise uses MAG’s 2016 Socioeconomic Projections in conjunction with Buckeye staff-provided building permit data to derive the base year estimates of population and housing units. Recent building permit data is used to estimate the increase in housing units since the 2010 Census. This results in a base year estimate of 27,195 housing units. TischlerBise converts estimated housing units to peak population using persons per household factors detailed in Figure C2 – 3.17 persons per household – which results in a base year peak population of 84,644 persons.

Population Projections

Based on MAG projections by TAZ, TischlerBise projects an average annual increase of approximately 1,800 housing units over the next 10 years. TischlerBise projects housing growth using MAG’s 2015-2030 compound annual growth rates, which vary from of 2.0 percent to 6.0 percent depending on the service area. For this study, it is assumed that the household size will remain constant. Based on MAG’s housing unit projections, TischlerBise projects a 10-year peak population increase of 56,804 persons, or an average of 5,680 persons annually, and a corresponding 10-year increase of 17,920 housing units, or an average of 1,792 units annually.

Population and housing unit projections are used to illustrate the possible future pace of service demands, revenues, and expenditures. To the extent these factors change, the projected need for infrastructure will also change. If development occurs at a more rapid rate than projected, the demand for infrastructure will increase at a corresponding rate. If development occurs at a slower rate than is projected, the demand for infrastructure will also decrease.

Figure C3: Residential Development Projections

	2018	2019	2020	2021	2022	2023	2028	10-Year Increase
	Base	1	2	3	4	5	10	
Peak Population by Service Area								
Service Area	78,298	82,441	86,781	91,330	96,095	101,085	129,843	51,545
Verrado	6,128	6,455	6,794	7,152	7,526	7,916	10,166	4,038
Subtotal	84,426	88,896	93,575	98,482	103,621	109,001	140,009	55,583
Excluded	218	262	319	382	461	559	1,439	1,221
Total Peak Population	84,644	89,158	93,894	98,864	104,082	109,560	141,448	56,804
Dwelling Units by Service Area								
Service Area	25,139	26,446	27,815	29,250	30,753	32,327	41,399	16,260
Verrado	1,985	2,088	2,195	2,308	2,426	2,549	3,259	1,274
Subtotal	27,124	28,534	30,010	31,558	33,179	34,876	44,658	17,534
Excluded	71	85	103	123	148	179	457	386
Total Dwelling Units	27,195	28,619	30,113	31,681	33,327	35,055	45,115	17,920

NONRESIDENTIAL DEVELOPMENT

Current estimates and future projections of nonresidential development are detailed in this section including jobs and nonresidential floor area.

Employment Estimates

In addition to data on residential development, the calculation of development impact fees requires data on employment (number of jobs) and nonresidential square footage in Buckeye. TischlerBise uses the term “jobs” to refer to employment by place of work. TischlerBise uses Maricopa Association of Governments (MAG) 2016 Socioeconomic Projections to estimate current and future employment.

TischlerBise uses a three-step process to calculate base year employment estimates, and projections for 10 years beyond the base year. First, 2018 employment estimates are derived using 2015 and 2020 MAG employment estimates. Second, job estimates are organized by development type: Industrial, Commercial, Institutional, and Office/Other. Finally, MAG 2015-2030 annual employment growth rates, by development type, are applied to the 2015 MAG employment estimate to project future citywide employment. Shown below in Figure C4, Buckeye’s base year employment equals 13,375 jobs citywide.

Figure C4: Estimated Employment and Distribution by Industry Type

Development Type	2018 Jobs ¹	Share of Total Jobs	Sq Ft per Employee ²	2018 Estimated Floor Area ³	Jobs per 1,000 Sq Ft ²
Industrial ⁴	1,397	10%	2,941	4,108,577	0.34
Commercial ⁵	4,105	31%	427	1,752,835	2.34
Institutional ⁶	1,908	14%	1,075	2,051,100	0.93
Office/Other ⁷	5,965	45%	337	2,010,205	2.97
Total	13,375	100%		9,922,717	

1. Jobs in 2018 based on Maricopa Association of Governments (MAG) Socioeconomic Projections (June 2016).
2. Estimated from the number of jobs using square feet per employee multipliers derived from Trip Generation (Institute of Transportation Engineers, 2017).
3. MAG industrial.
4. MAG retail.
5. MAG public.
6. MAG office and other.

Nonresidential Square Footage Estimates

TischlerBise uses 2017 Institute of Transportation Engineers (ITE) employment multipliers as a proxy for future nonresidential floor area (Figure C5). The prototype for industrial development is warehousing (ITE 150) with an average of 2,941 square feet per employee. For commercial development, a shopping center (ITE 820) is a reasonable proxy with 427 square feet per employee. The prototype for institutional development is an elementary school (ITE 520), with an average of 1,075 square feet per job. Finally, the proxy for office/other development is general office (ITE 710) with an average of 337 square feet per job. TischlerBise estimates Buckeye has approximately 9.92 million square feet of nonresidential space.

Figure C5: The Institute of Transportation Engineers, Employee and Building Area Ratios

ITE Code	Land Use / Size	Demand Unit	Wkdy Trip Ends Per Dmd Unit ¹	Wkdy Trip Ends Per Employee ¹	Employees Per Dmd Unit	Sq Ft Per Employee
110	Light Industrial	1,000 Sq Ft	4.96	3.05	1.63	613
130	Industrial Park	1,000 Sq Ft	3.37	2.91	1.16	862
140	Manufacturing	1,000 Sq Ft	3.93	2.47	1.59	629
150	Warehousing	1,000 Sq Ft	1.74	5.05	0.34	2,941
254	Assisted Living	bed	2.60	4.24	0.61	na
310	Hotel	room	8.36	14.34	0.58	na
520	Elementary School	1,000 Sq Ft	19.52	21.00	0.93	1,075
530	High School	1,000 Sq Ft	14.07	22.25	0.63	1,587
540	Community College	student	1.15	14.61	0.08	na
565	Day Care	student	4.09	21.38	0.19	na
610	Hospital	1,000 Sq Ft	10.72	3.79	2.83	353
620	Nursing Home	bed	3.06	2.91	1.05	na
710	General Office (average size)	1,000 Sq Ft	9.74	3.28	2.97	337
720	Medical-Dental Office	1,000 Sq Ft	34.80	8.70	4.00	250
730	Government Office	1,000 Sq Ft	22.59	7.45	3.03	330
770	Business Park	1,000 Sq Ft	12.44	4.04	3.08	325
820	Shopping Center (average size)	1,000 Sq Ft	37.75	16.11	2.34	427

1. Trip Generation, Institute of Transportation Engineers, 10th Edition (2017).

Employment and Nonresidential Floor Area Projections

Future employment growth and nonresidential development in Buckeye are based on MAG data. To project employment, TischlerBise applies MAG 2015-2030 annual employment growth rates to the 2015 MAG employment estimate of 13,375 total jobs.

To project growth in nonresidential square footage, TischlerBise applies the previously discussed square feet per employee factors to the projected increase in employment. The results of these calculations are shown in Figure C6. Over the next 10 years, Buckeye is projected to gain 12,596 jobs and add an estimated 5.48 million square feet of nonresidential floor area.

Figure C6: Nonresidential Development Projections

	2018	2019	2020	2021	2022	2023	2028	10-Year Increase
	Base	1	2	3	4	5	10	
Industrial Jobs	1,397	1,407	1,417	1,427	1,437	1,448	1,502	105
Commercial Jobs	4,105	4,534	5,011	5,538	6,122	6,771	11,292	7,187
Institutional Jobs	1,908	1,947	1,987	2,028	2,069	2,112	2,338	430
Office/Other Jobs	5,965	6,314	6,689	7,089	7,519	7,980	10,839	4,874
Total Jobs	13,375	14,202	15,104	16,082	17,147	18,311	25,971	12,596
Nonresidential Floor Area (square feet in thousands within Service Areas)								
Industrial KSF	4,109	4,138	4,167	4,197	4,226	4,259	4,417	309
Commercial KSF	1,753	1,936	2,140	2,365	2,614	2,891	4,822	3,069
Institutional KSF	2,051	2,093	2,136	2,180	2,224	2,270	2,513	462
Office/Other KSF	2,010	2,128	2,254	2,389	2,534	2,689	3,653	1,643
Total KSF	9,923	10,295	10,697	11,131	11,598	12,109	15,405	5,482

AVERAGE WEEKDAY VEHICLE TRIPS

Average Weekday Vehicle Trips are used as a measure of demand by land use. Vehicle trips are estimated using average weekday vehicle trip ends from the reference book, *Trip Generation, 10th Edition*, published by the ITE in 2017. A vehicle trip end represents a vehicle entering or exiting a development (as if a traffic counter were placed across a driveway).

Trip Rate Adjustments

To calculate road development fees, trip generation rates require an adjustment factor to avoid double counting each trip at both the origin and destination points. Therefore, the basic trip adjustment factor is 50 percent. As discussed further below, the development impact fee methodology includes additional adjustments to make the fees proportionate to the infrastructure demand for particular types of development.

Commuter Trip Adjustment

Residential development has a larger trip adjustment factor of 64 percent to account for commuters leaving Buckeye for work. According to the 2009 National Household Travel Survey (see Table 30) weekday work trips are typically 31 percent of production trips (i.e., all out-bound trips, which are 50 percent of all trip ends). As shown in Figure C7, the U.S. Census Bureau’s OnTheMap web application indicates that 91 percent of resident workers traveled outside of Buckeye for work in 2015. In combination, these factors ($0.31 \times 0.50 \times 0.91 = 0.14$) support the additional 14 percent allocation of trips to residential development.

Figure C7: Commuter Trip Adjustment

Trip Adjustment Factor for Commuters ¹	
Employed Residents	21,384
Residents Working and Living in Buckeye	1,870
Residents Commuting Outside Buckeye for Work	19,514
Percent Commuting out of Buckeye	91%
Additional Production Trips ²	14%
Residential Trip Adjustment Factor	64%

1. U.S. Census Bureau, OnTheMap Application (version 6.1.1) and LEHD Origin-Destination Employment Statistics, 2015.

2. According to the National Household Travel Survey (2009)*, published in December 2011 (see Table 30), home-based work trips are typically 30.99 percent of “production” trips, in other words, out-bound trips (which are 50 percent of all trip ends). Also, LED OnTheMap data from 2015 indicate that 91 percent of Buckeye's workers travel outside the city for work. In combination, these factors ($0.3099 \times 0.50 \times 0.91 = 0.1413$) account for 14 percent of additional production trips. The total adjustment factor for residential includes attraction trips (50 percent of trip ends) plus the journey-to-work commuting adjustment (14 percent of production trips) for a total of 64 percent.

*<http://nhts.ornl.gov/publications.shtml> ; Summary of Travel Trends - Table "Daily Travel Statistics by Weekday vs. Weekend"

Adjustment for Pass-By Trips

For commercial and institutional development, the trip adjustment factor is less than 50 percent because these types of development attract vehicles as they pass by on arterial and collector roads. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For the average shopping center, ITE data indicate 34 percent of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66 percent of attraction trips have the commercial site as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 66 percent multiplied by 50 percent, or approximately 33 percent of the trip ends.

Estimated Residential Vehicle Trip Rates

ITE publishes vehicle trip generation rates for residential development. Based on the 10th Edition of Trip Generation (2017) the national average for single-family units is 9.44 (ITE 210) average weekday vehicle trip ends per dwelling. Multi-family residential development generates 5.44 (ITE 221) average weekday vehicle trip ends per dwelling.

Functional Population

TischlerBise recommends functional population to allocate the cost of certain facilities to residential and nonresidential development. As shown in Figure C8, functional population accounts for people living and working in a jurisdiction. OnTheMap is a web-based mapping and reporting application that shows where workers are employed and where they live. It describes geographic patterns of jobs by their employment locations and residential locations as well as the connections between the two locations. OnTheMap was developed through a unique partnership between the U.S. Census Bureau and its Local Employment Dynamics (LED) partner states.

Residents who do not work are assigned 20 hours per day to residential development and four hours per day to nonresidential development (annualized averages). Residents who work in Buckeye are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents who work outside Buckeye are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2015 functional population data for Buckeye, residential development accounts for 82 percent of functional population while nonresidential development accounts for the remaining 18 percent.

Figure C8: Functional Population

	Service Units in 2015	Demand Hours/Day	Person Hours
Residential			
Buckeye Residents ¹	67,029		
Residents Not Working	45,645	20	912,900
Employed Residents ²	21,384		
Employed in Buckeye ²	1,870	14	26,180
Employed Outside Buckeye ²	19,514	14	273,196
Residential Subtotal			1,212,276
Residential Share			82%
Nonresidential			
Non-working Residents	45,645	4	182,580
Jobs in Buckeye ²	8,406		
Residents Working in Buckeye ²	1,870	10	18,700
Non-Resident Workers (inflow commuters) ²	6,536	10	65,360
Nonresidential Subtotal			266,640
Nonresidential Share			18%
Total			1,478,916

1. TischlerBise calculation using Maricopa Association of Governments Traffic Analysis Zone data
 2. U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics, 2015, v6.6

DEVELOPMENT PROJECTIONS

Provided below is a summary of citywide development projections used in the development fee study. Base year estimates for 2018 are used in the development fee calculations. Development projections are used to illustrate a possible future pace of demand for service units and cash flows resulting from revenues and expenditures associated with those demands.

Figure C9: Development Projections Summary (Citywide)

Citywide Service Area	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	10-Year Increase
	Base	1	2	3	4	5	6	7	8	9	10	
Peak Population by Service Area												
Service Area	78,298	82,441	86,781	91,330	96,095	101,085	106,312	111,790	117,528	123,541	129,843	51,545
Verrado	6,128	6,455	6,794	7,152	7,526	7,916	8,325	8,756	9,203	9,675	10,166	4,038
Subtotal	84,426	88,896	93,575	98,482	103,621	109,001	114,637	120,546	126,731	133,216	140,009	55,583
Excluded	218	262	319	382	461	559	676	815	989	1,192	1,439	1,221
Total Peak Population	84,644	89,158	93,894	98,864	104,082	109,560	115,313	121,361	127,720	134,408	141,448	56,804
Dwelling Units by Service Area												
Service Area	25,139	26,446	27,815	29,250	30,753	32,327	33,976	35,704	37,514	39,411	41,399	16,260
Verrado	1,985	2,088	2,195	2,308	2,426	2,549	2,678	2,814	2,955	3,104	3,259	1,274
Subtotal	27,124	28,534	30,010	31,558	33,179	34,876	36,654	38,518	40,469	42,515	44,658	17,534
Excluded	71	85	103	123	148	179	216	260	315	379	457	386
Total Dwelling Units	27,195	28,619	30,113	31,681	33,327	35,055	36,870	38,778	40,784	42,894	45,115	17,920
Total Jobs												
Industrial Jobs	1,397	1,407	1,417	1,427	1,437	1,448	1,459	1,469	1,480	1,490	1,502	105
Commercial Jobs	4,105	4,534	5,011	5,538	6,122	6,771	7,492	8,293	9,185	10,181	11,292	7,187
Institutional Jobs	1,908	1,947	1,987	2,028	2,069	2,112	2,155	2,200	2,245	2,291	2,338	430
Office/Other Jobs	5,965	6,314	6,689	7,089	7,519	7,980	8,473	9,004	9,574	10,184	10,839	4,874
Total Jobs	13,375	14,202	15,104	16,082	17,147	18,311	19,579	20,966	22,484	24,146	25,971	12,596
Nonresidential Floor Area (square feet in thousands within Service Areas)												
Industrial KSF	4,109	4,138	4,167	4,197	4,226	4,259	4,291	4,320	4,353	4,382	4,417	309
Commercial KSF	1,753	1,936	2,140	2,365	2,614	2,891	3,199	3,541	3,922	4,347	4,822	3,069
Institutional KSF	2,051	2,093	2,136	2,180	2,224	2,270	2,317	2,365	2,413	2,463	2,513	462
Office/Other KSF	2,010	2,128	2,254	2,389	2,534	2,689	2,855	3,034	3,226	3,432	3,653	1,643
Total KSF	9,923	10,295	10,697	11,131	11,598	12,109	12,662	13,261	13,914	14,624	15,405	5,482

Fire Service Area Projections

Figure C10: Development Projections Summary (Fire)

Fire Service Areas	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	10-Year Increase
	Base	1	2	3	4	5	6	7	8	9	10	
Peak Population by Service Area												
Main	69,899	73,354	76,961	80,736	84,680	88,801	93,109	97,610	102,309	107,228	112,366	42,467
Verrado	6,128	6,455	6,794	7,152	7,526	7,916	8,325	8,756	9,203	9,675	10,166	4,038
Festival Ranch	5,536	5,989	6,465	6,966	7,492	8,044	8,621	9,230	9,870	10,539	11,243	5,707
Tartesso West	2,863	3,098	3,355	3,628	3,923	4,240	4,582	4,950	5,349	5,774	6,234	3,371
Subtotal	84,426	88,896	93,575	98,482	103,621	109,001	114,637	120,546	126,731	133,216	140,009	55,583
Excluded	218	262	319	382	461	559	676	815	989	1,192	1,439	1,221
Total Peak Population	84,644	89,158	93,894	98,864	104,082	109,560	115,313	121,361	127,720	134,408	141,448	56,804
Dwelling Units by Service Area												
Main	21,579	22,669	23,807	24,998	26,242	27,542	28,901	30,321	31,803	33,355	34,976	13,397
Verrado	1,985	2,088	2,195	2,308	2,426	2,549	2,678	2,814	2,955	3,104	3,259	1,274
Festival Ranch	2,630	2,773	2,923	3,081	3,247	3,421	3,603	3,795	3,997	4,208	4,430	1,800
Tartesso West	930	1,004	1,085	1,171	1,264	1,364	1,472	1,588	1,714	1,848	1,993	1,063
Subtotal	27,124	28,534	30,010	31,558	33,179	34,876	36,654	38,518	40,469	42,515	44,658	17,534
Excluded	71	85	103	123	148	179	216	260	315	379	457	386
Total Dwelling Units	27,195	28,619	30,113	31,681	33,327	35,055	36,870	38,778	40,784	42,894	45,115	17,920

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Fire Service Areas	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	10-Year Increase
	Base	1	2	3	4	5	6	7	8	9	10	
Employment by Service Area	27,195	1,410	1,476	1,548	1,621	1,697	1,778	1,864	1,951	2,046	2,143	
Industrial Jobs												
Main	1,318	1,327	1,335	1,344	1,353	1,362	1,372	1,380	1,390	1,398	1,408	90
Verrado	16	16	16	16	16	17	17	17	17	17	18	2
Festival Ranch	21	22	23	24	25	26	27	29	30	31	32	11
Tartesso West	3	3	4	4	4	4	4	4	4	5	5	2
Subtotal	1,358	1,368	1,378	1,388	1,398	1,409	1,420	1,430	1,441	1,451	1,463	105
Excluded	39	39	39	39	39	39	39	39	39	39	39	0
Total Industrial Jobs	1,397	1,407	1,417	1,427	1,437	1,448	1,459	1,469	1,480	1,490	1,502	105
Commercial Jobs												
Main	4,037	4,452	4,909	5,410	5,963	6,572	7,241	7,978	8,788	9,679	10,655	6,618
Verrado	29	35	44	54	67	83	103	128	159	197	244	215
Festival Ranch	24	28	33	40	47	56	67	79	94	112	134	110
Tartesso West	7	9	11	15	19	25	33	43	56	73	96	89
Subtotal	4,097	4,524	4,997	5,519	6,096	6,736	7,444	8,228	9,097	10,061	11,129	7,032
Excluded	8	10	14	19	26	35	48	65	88	120	163	155
Total Commercial Jobs	4,105	4,534	5,011	5,538	6,122	6,771	7,492	8,293	9,185	10,181	11,292	7,187
Institutional Jobs												
Main	1,526	1,555	1,583	1,614	1,644	1,676	1,706	1,739	1,771	1,804	1,836	310
Verrado	297	303	310	316	323	330	337	345	352	360	368	71
Festival Ranch	35	36	38	39	40	41	43	44	46	47	49	14
Tartesso West	50	53	56	59	62	65	69	72	76	80	85	35
Subtotal	1,908	1,947	1,987	2,028	2,069	2,112	2,155	2,200	2,245	2,291	2,338	430
Excluded	0	0	0	0	0	0	0	0	0	0	0	0
Total Institutional Jobs	1,908	1,947	1,987	2,028	2,069	2,112	2,155	2,200	2,245	2,291	2,338	430
Office/Other Jobs												
Main	4,043	4,360	4,700	5,066	5,460	5,885	6,341	6,832	7,362	7,931	8,542	4,499
Verrado	163	168	174	179	185	190	196	202	209	215	222	59
Festival Ranch	121	129	138	147	157	168	179	191	204	218	233	112
Tartesso West	166	169	172	175	178	181	184	188	191	194	198	32
Subtotal	4,493	4,826	5,184	5,567	5,980	6,424	6,900	7,413	7,966	8,558	9,195	4,702
Excluded	1,472	1,488	1,505	1,522	1,539	1,556	1,573	1,591	1,608	1,626	1,644	172
Total Office/Other Jobs	5,965	6,314	6,689	7,089	7,519	7,980	8,473	9,004	9,574	10,184	10,839	4,874

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Fire Service Areas	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	10-Year Increase
	Base	1	2	3	4	5	6	7	8	9	10	
Nonresidential Floor Area (square feet in thousands)												
Industrial KSF												
Main	3,876	3,903	3,926	3,953	3,979	4,006	4,035	4,059	4,088	4,112	4,141	265
Verrado	47	47	47	47	47	50	50	50	50	50	53	6
Festival Ranch	62	65	68	71	74	76	79	85	88	91	94	32
Tartesso West	9	9	12	12	12	12	12	12	12	15	15	6
Subtotal	3,994	4,023	4,053	4,082	4,112	4,144	4,176	4,206	4,238	4,267	4,303	309
Excluded	115	115	115	115	115	115	115	115	115	115	115	0
Total Industrial KSF	4,109	4,138	4,167	4,197	4,226	4,259	4,291	4,320	4,353	4,382	4,417	309
Commercial KSF												
Main	1,724	1,901	2,096	2,310	2,546	2,806	3,092	3,407	3,752	4,133	4,550	2,826
Verrado	12	15	19	23	29	35	44	55	68	84	104	92
Festival Ranch	10	12	14	17	20	24	29	34	40	48	57	47
Tartesso West	3	4	5	6	8	11	14	18	24	31	41	38
Subtotal	1,749	1,932	2,134	2,357	2,603	2,876	3,179	3,513	3,884	4,296	4,752	3,003
Excluded	3	4	6	8	11	15	20	28	38	51	70	66
Total Commercial KSF	1,753	1,936	2,140	2,365	2,614	2,891	3,199	3,541	3,922	4,347	4,822	3,069
Institutional KSF												
Main	1,640	1,672	1,702	1,735	1,767	1,802	1,834	1,869	1,904	1,939	1,974	333
Verrado	319	326	333	340	347	355	362	371	378	387	396	76
Festival Ranch	38	39	41	42	43	44	46	47	49	51	53	15
Tartesso West	54	57	60	63	67	70	74	77	82	86	91	38
Subtotal	2,051	2,093	2,136	2,180	2,224	2,270	2,317	2,365	2,413	2,463	2,513	462
Excluded	0	0	0	0	0	0	0	0	0	0	0	0
Total Institutional KSF	2,051	2,093	2,136	2,180	2,224	2,270	2,317	2,365	2,413	2,463	2,513	462
Office/Other KSF												
Main	1,362	1,469	1,584	1,707	1,840	1,983	2,137	2,302	2,481	2,673	2,879	1,516
Verrado	55	57	59	60	62	64	66	68	70	72	75	20
Festival Ranch	41	43	47	50	53	57	60	64	69	73	79	38
Tartesso West	56	57	58	59	60	61	62	63	64	65	67	11
Subtotal	1,514	1,626	1,747	1,876	2,015	2,165	2,325	2,498	2,685	2,884	3,099	1,585
Excluded	496	501	507	513	519	524	530	536	542	548	554	58
Total Office/Other KSF	2,010	2,128	2,254	2,389	2,534	2,689	2,855	3,034	3,226	3,432	3,653	1,643

Parks and Recreational, and Library Service Area Projections

Figure C11: Development Projections Summary (Parks and Recreational, and Library)

Parks and Library Service Areas	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	10-Year Increase
	Base	1	2	3	4	5	6	7	8	9	10	
Peak Population by Service Area												
North	18,597	19,925	21,329	22,819	24,398	26,069	27,838	29,715	31,699	33,804	36,033	17,436
Verrado	6,128	6,455	6,794	7,152	7,526	7,916	8,325	8,756	9,203	9,675	10,166	4,038
Central	59,701	62,516	65,452	68,511	71,697	75,016	78,474	82,075	85,829	89,737	93,810	34,109
Subtotal	84,426	88,896	93,575	98,482	103,621	109,001	114,637	120,546	126,731	133,216	140,009	55,583
Excluded	218	262	319	382	461	559	676	815	989	1,192	1,439	1,221
Total Peak Population	84,644	89,158	93,894	98,864	104,082	109,560	115,313	121,361	127,720	134,408	141,448	56,804
Dwelling Units by Service Area												
North	6,642	7,061	7,504	7,974	8,472	8,999	9,557	10,149	10,775	11,439	12,142	5,500
Verrado	1,985	2,088	2,195	2,308	2,426	2,549	2,678	2,814	2,955	3,104	3,259	1,274
Central	18,497	19,385	20,311	21,276	22,281	23,328	24,419	25,555	26,739	27,972	29,257	10,760
Subtotal	27,124	28,534	30,010	31,558	33,179	34,876	36,654	38,518	40,469	42,515	44,658	17,534
Excluded	71	85	103	123	148	179	216	260	315	379	457	386
Total Dwelling Units	27,195	28,619	30,113	31,681	33,327	35,055	36,870	38,778	40,784	42,894	45,115	17,920

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Parks and Library Service Areas	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	10-Year Increase
	Base	1	2	3	4	5	6	7	8	9	10	
Employment by Service Area												
Industrial Jobs												
North	114	116	118	120	122	124	126	128	130	132	134	20
Verrado	16	16	16	16	16	17	17	17	17	17	18	2
Central	1,228	1,236	1,244	1,252	1,260	1,268	1,277	1,285	1,294	1,302	1,311	83
Subtotal	1,358	1,368	1,378	1,388	1,398	1,409	1,420	1,430	1,441	1,451	1,463	105
Excluded	39	39	39	39	39	39	39	39	39	39	39	0
Total Industrial Jobs	1,397	1,407	1,417	1,427	1,437	1,448	1,459	1,469	1,480	1,490	1,502	105
Commercial Jobs												
North	214	258	310	373	449	540	650	782	940	1,131	1,361	1,147
Verrado	29	35	44	54	67	83	103	128	159	197	244	215
Central	3,854	4,231	4,643	5,092	5,580	6,112	6,690	7,316	7,995	8,728	9,517	5,663
Subtotal	4,097	4,524	4,997	5,519	6,096	6,735	7,443	8,226	9,094	10,056	11,122	7,025
Excluded	8	10	14	19	26	36	49	67	91	125	170	162
Total Commercial Jobs	4,105	4,534	5,011	5,538	6,122	6,771	7,492	8,293	9,185	10,181	11,292	7,187
Institutional Jobs												
North	305	314	323	332	342	352	362	373	384	395	406	101
Verrado	297	303	310	316	323	330	337	345	352	360	368	71
Central	1,306	1,330	1,354	1,380	1,404	1,430	1,456	1,482	1,509	1,536	1,564	258
Subtotal	1,908	1,947	1,987	2,028	2,069	2,112	2,155	2,200	2,245	2,291	2,338	430
Excluded	0	0	0	0	0	0	0	0	0	0	0	0
Total Institutional Jobs	1,908	1,947	1,987	2,028	2,069	2,112	2,155	2,200	2,245	2,291	2,338	430
Office/Other Jobs												
North	827	893	964	1,040	1,123	1,212	1,308	1,412	1,524	1,645	1,776	949
Verrado	163	168	174	179	185	190	196	202	209	215	222	59
Central	3,503	3,764	4,045	4,348	4,672	5,021	5,395	5,798	6,231	6,696	7,195	3,692
Subtotal	4,493	4,825	5,183	5,567	5,980	6,423	6,899	7,412	7,964	8,556	9,193	4,700
Excluded	1,472	1,489	1,506	1,522	1,539	1,557	1,574	1,592	1,610	1,628	1,646	174
Total Office/Other Jobs	5,965	6,314	6,689	7,089	7,519	7,980	8,473	9,004	9,574	10,184	10,839	4,874

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Parks and Library Service Areas	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	10-Year Increase
	Base	1	2	3	4	5	6	7	8	9	10	
Nonresidential Floor Area (square feet in thousands)												
Industrial KSF												
North	335	341	347	353	359	365	371	376	382	388	394	59
Verrado	47	47	47	47	47	50	50	50	50	50	53	6
Central	3,612	3,635	3,659	3,682	3,706	3,729	3,756	3,779	3,806	3,829	3,856	244
Subtotal	3,994	4,023	4,053	4,082	4,112	4,144	4,176	4,206	4,238	4,267	4,303	309
Excluded	115	115	115	115	115	115	115	115	115	115	115	0
Total Industrial KSF	4,109	4,138	4,167	4,197	4,226	4,259	4,291	4,320	4,353	4,382	4,417	309
Commercial KSF												
North	91	110	132	159	192	231	278	334	401	483	581	490
Verrado	12	15	19	23	29	35	44	55	68	84	104	92
Central	1,646	1,807	1,983	2,174	2,383	2,610	2,857	3,124	3,414	3,727	4,064	2,418
Subtotal	1,749	1,932	2,134	2,357	2,603	2,876	3,178	3,513	3,883	4,294	4,749	3,000
Excluded	3	4	6	8	11	15	21	29	39	53	73	69
Total Commercial KSF	1,753	1,936	2,140	2,365	2,614	2,891	3,199	3,541	3,922	4,347	4,822	3,069
Institutional KSF												
North	328	338	347	357	368	378	389	401	413	425	436	109
Verrado	319	326	333	340	347	355	362	371	378	387	396	76
Central	1,404	1,430	1,456	1,484	1,509	1,537	1,565	1,593	1,622	1,651	1,681	277
Subtotal	2,051	2,093	2,136	2,180	2,224	2,270	2,317	2,365	2,413	2,463	2,513	462
Excluded	0	0	0	0	0	0	0	0	0	0	0	0
Total Institutional KSF	2,051	2,093	2,136	2,180	2,224	2,270	2,317	2,365	2,413	2,463	2,513	462
Office/Other KSF												
North	279	301	325	350	378	408	441	476	514	554	599	320
Verrado	55	57	59	60	62	64	66	68	70	72	75	20
Central	1,181	1,268	1,363	1,465	1,574	1,692	1,818	1,954	2,100	2,257	2,425	1,244
Subtotal	1,514	1,626	1,747	1,876	2,015	2,165	2,325	2,498	2,684	2,883	3,098	1,584
Excluded	496	502	508	513	519	525	530	537	543	549	555	59
Total Office/Other KSF	2,010	2,128	2,254	2,389	2,534	2,689	2,855	3,034	3,226	3,432	3,653	1,643

Street Service Area Projections

Figure C12: Development Projections Summary (Street)

Street Service Areas	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	10-Year Increase
	Base	1	2	3	4	5	6	7	8	9	10	
Peak Population by Service Area												
Service Area	72,590	76,223	80,024	84,002	88,164	92,520	97,078	101,852	106,848	112,079	117,554	44,964
Verrado	6,128	6,455	6,794	7,152	7,526	7,916	8,325	8,756	9,203	9,675	10,166	4,038
Subtotal	78,718	82,678	86,818	91,154	95,690	100,436	105,403	110,608	116,051	121,754	127,720	49,002
Excluded	5,926	6,480	7,076	7,710	8,392	9,124	9,910	10,753	11,669	12,654	13,728	7,802
Total Peak Population	84,644	89,158	93,894	98,864	104,082	109,560	115,313	121,361	127,720	134,408	141,448	56,804
Dwelling Units by Service Area												
Service Area	22,450	23,596	24,795	26,050	27,363	28,737	30,175	31,681	33,257	34,907	36,634	14,184
Verrado	1,985	2,088	2,195	2,308	2,426	2,549	2,678	2,814	2,955	3,104	3,259	1,274
Subtotal	24,435	25,684	26,990	28,358	29,789	31,286	32,853	34,495	36,212	38,011	39,893	15,458
Excluded	2,760	2,935	3,123	3,323	3,538	3,769	4,017	4,283	4,572	4,883	5,222	2,462
Total Dwelling Units	27,195	28,619	30,113	31,681	33,327	35,055	36,870	38,778	40,784	42,894	45,115	17,920

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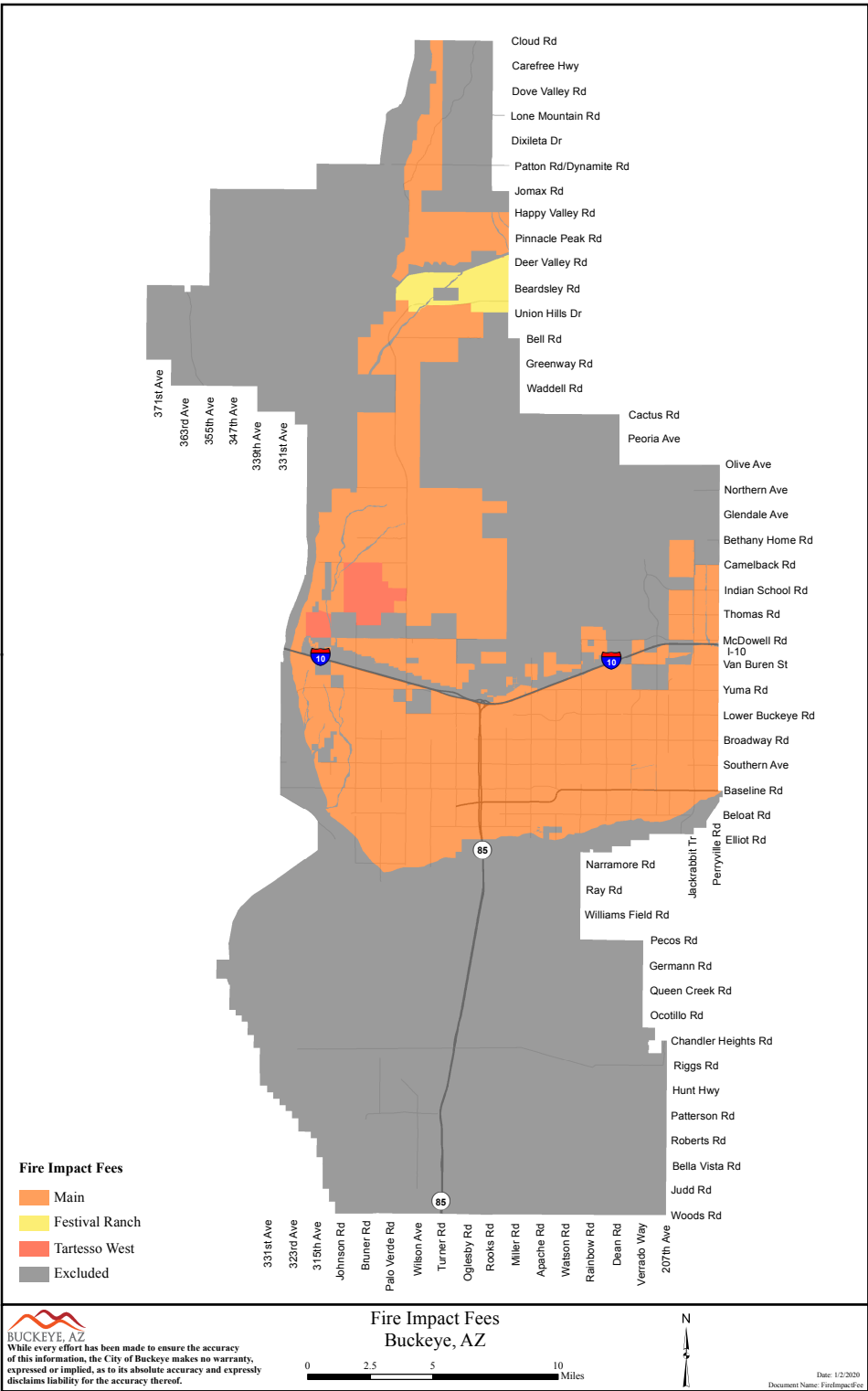
Street Service Areas	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	10-Year Increase
	Base	1	2	3	4	5	6	7	8	9	10	
Employment by Service Area												
Industrial Jobs												
Service Area	1,320	1,329	1,338	1,347	1,356	1,365	1,375	1,384	1,393	1,402	1,412	92
Verrado	16	16	16	16	16	17	17	17	17	17	18	2
Subtotal	1,336	1,345	1,354	1,363	1,372	1,382	1,392	1,401	1,410	1,419	1,430	94
Excluded	61	62	63	64	65	66	67	68	70	71	72	11
Total Industrial Jobs	1,397	1,407	1,417	1,427	1,437	1,448	1,459	1,469	1,480	1,490	1,502	105
Commercial Jobs												
Service Area	4,023	4,432	4,882	5,379	5,925	6,528	7,191	7,922	8,727	9,614	10,591	6,568
Verrado	29	35	44	54	67	83	103	128	159	197	244	215
Subtotal	4,052	4,467	4,926	5,433	5,992	6,611	7,294	8,050	8,886	9,811	10,835	6,783
Excluded	53	67	85	105	130	160	198	243	299	370	457	404
Total Commercial Jobs	4,105	4,534	5,011	5,538	6,122	6,771	7,492	8,293	9,185	10,181	11,292	7,187
Institutional Jobs												
Service Area	1,576	1,607	1,640	1,672	1,706	1,740	1,775	1,810	1,847	1,884	1,921	345
Verrado	297	303	310	316	323	330	337	345	352	360	368	71
Subtotal	1,873	1,910	1,950	1,988	2,029	2,070	2,112	2,155	2,199	2,244	2,289	416
Excluded	35	37	37	40	40	42	43	45	46	47	49	14
Total Institutional Jobs	1,908	1,947	1,987	2,028	2,069	2,112	2,155	2,200	2,245	2,291	2,338	430
Office/Other Jobs												
Service Area	4,206	4,525	4,867	5,235	5,631	6,057	6,515	7,008	7,538	8,108	8,722	4,516
Verrado	163	168	174	179	185	190	196	202	209	215	222	59
Subtotal	4,369	4,693	5,041	5,414	5,816	6,247	6,711	7,210	7,747	8,323	8,944	4,575
Excluded	1,596	1,621	1,648	1,675	1,703	1,733	1,762	1,794	1,827	1,861	1,895	299
Total Office/Other Jobs	5,965	6,314	6,689	7,089	7,519	7,980	8,473	9,004	9,574	10,184	10,839	4,874

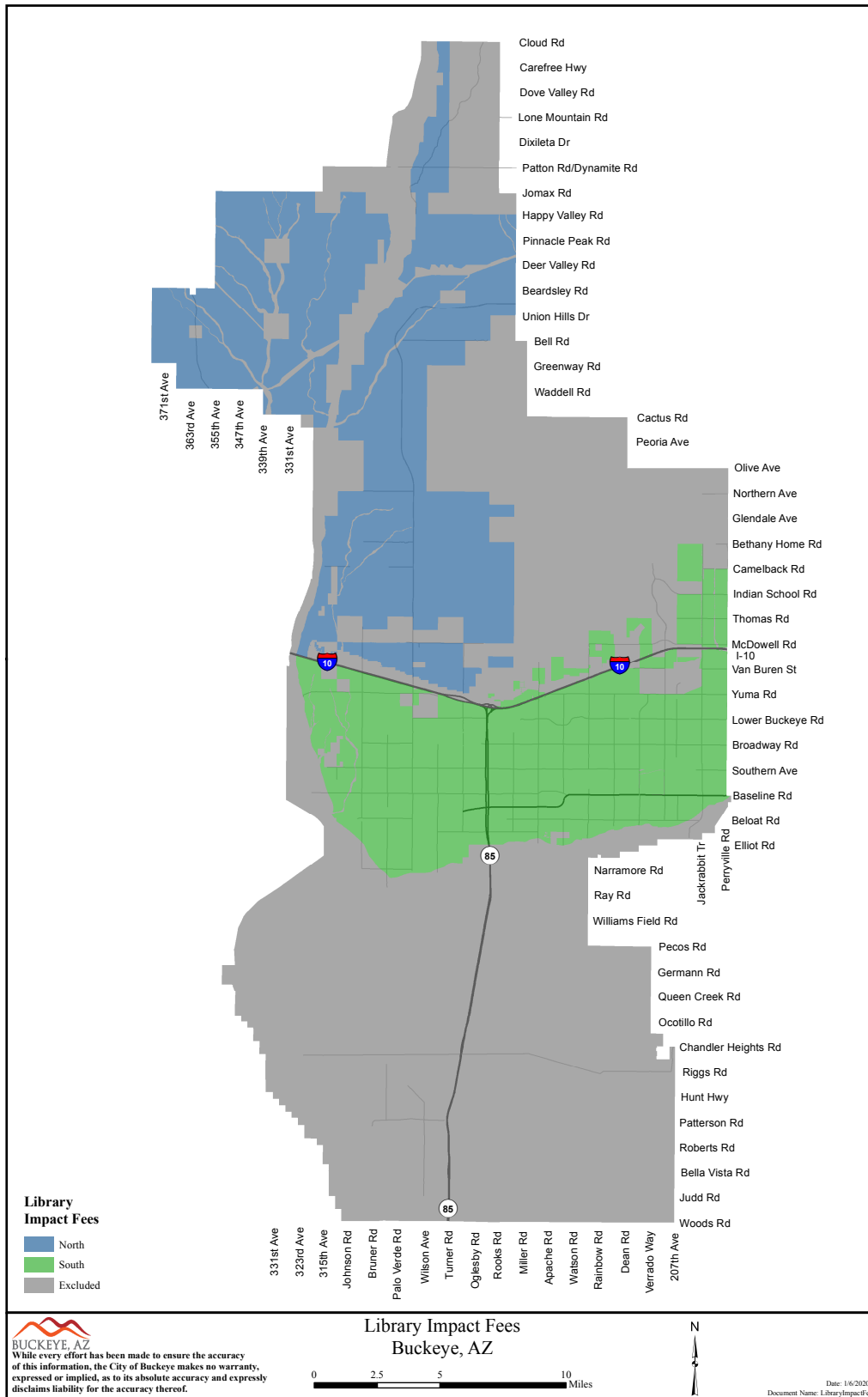
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Street Service Areas	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	10-Year Increase
	Base	1	2	3	4	5	6	7	8	9	10	
Nonresidential Floor Area (square feet in thousands)												
Industrial KSF												
Service Area	3,882	3,909	3,935	3,962	3,988	4,014	4,044	4,070	4,097	4,123	4,153	271
Verrado	47	47	47	47	47	50	50	50	50	50	53	6
Subtotal	3,929	3,956	3,982	4,009	4,035	4,064	4,094	4,120	4,147	4,173	4,206	276
Excluded	179	182	185	188	191	194	197	200	206	209	212	32
Total Industrial KSF	4,109	4,138	4,167	4,197	4,226	4,259	4,291	4,320	4,353	4,382	4,417	309
Commercial KSF												
Service Area	1,718	1,892	2,085	2,297	2,530	2,787	3,071	3,383	3,726	4,105	4,522	2,805
Verrado	12	15	19	23	29	35	44	55	68	84	104	92
Subtotal	1,730	1,907	2,103	2,320	2,559	2,823	3,115	3,437	3,794	4,189	4,627	2,896
Excluded	23	29	36	45	56	68	85	104	128	158	195	173
Total Commercial KSF	1,753	1,936	2,140	2,365	2,614	2,891	3,199	3,541	3,922	4,347	4,822	3,069
Institutional KSF												
Service Area	1,694	1,728	1,763	1,797	1,834	1,871	1,908	1,946	1,986	2,025	2,065	371
Verrado	319	326	333	340	347	355	362	371	378	387	396	76
Subtotal	2,013	2,053	2,096	2,137	2,181	2,225	2,270	2,317	2,364	2,412	2,461	447
Excluded	38	40	40	43	43	45	46	48	49	51	53	15
Total Institutional KSF	2,051	2,093	2,136	2,180	2,224	2,270	2,317	2,365	2,413	2,463	2,513	462
Office/Other KSF												
Service Area	1,417	1,525	1,640	1,764	1,898	2,041	2,196	2,362	2,540	2,732	2,939	1,522
Verrado	55	57	59	60	62	64	66	68	70	72	75	20
Subtotal	1,472	1,582	1,699	1,825	1,960	2,105	2,262	2,430	2,611	2,805	3,014	1,542
Excluded	538	546	555	564	574	584	594	605	616	627	639	101
Total Office/Other KSF	2,010	2,128	2,254	2,389	2,534	2,689	2,855	3,034	3,226	3,432	3,653	1,643

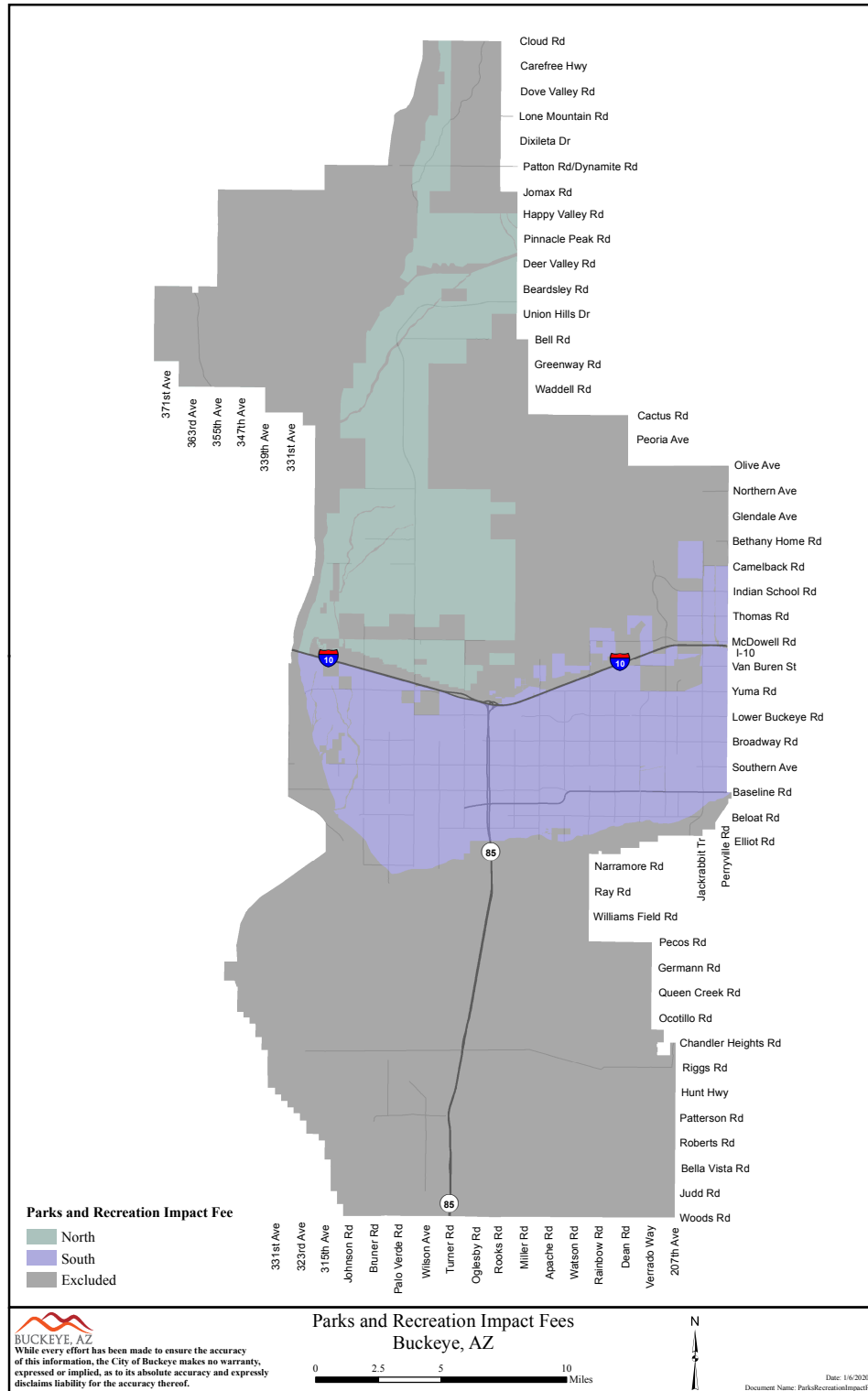
APPENDIX D: PROPOSED SERVICE AREA MAPS

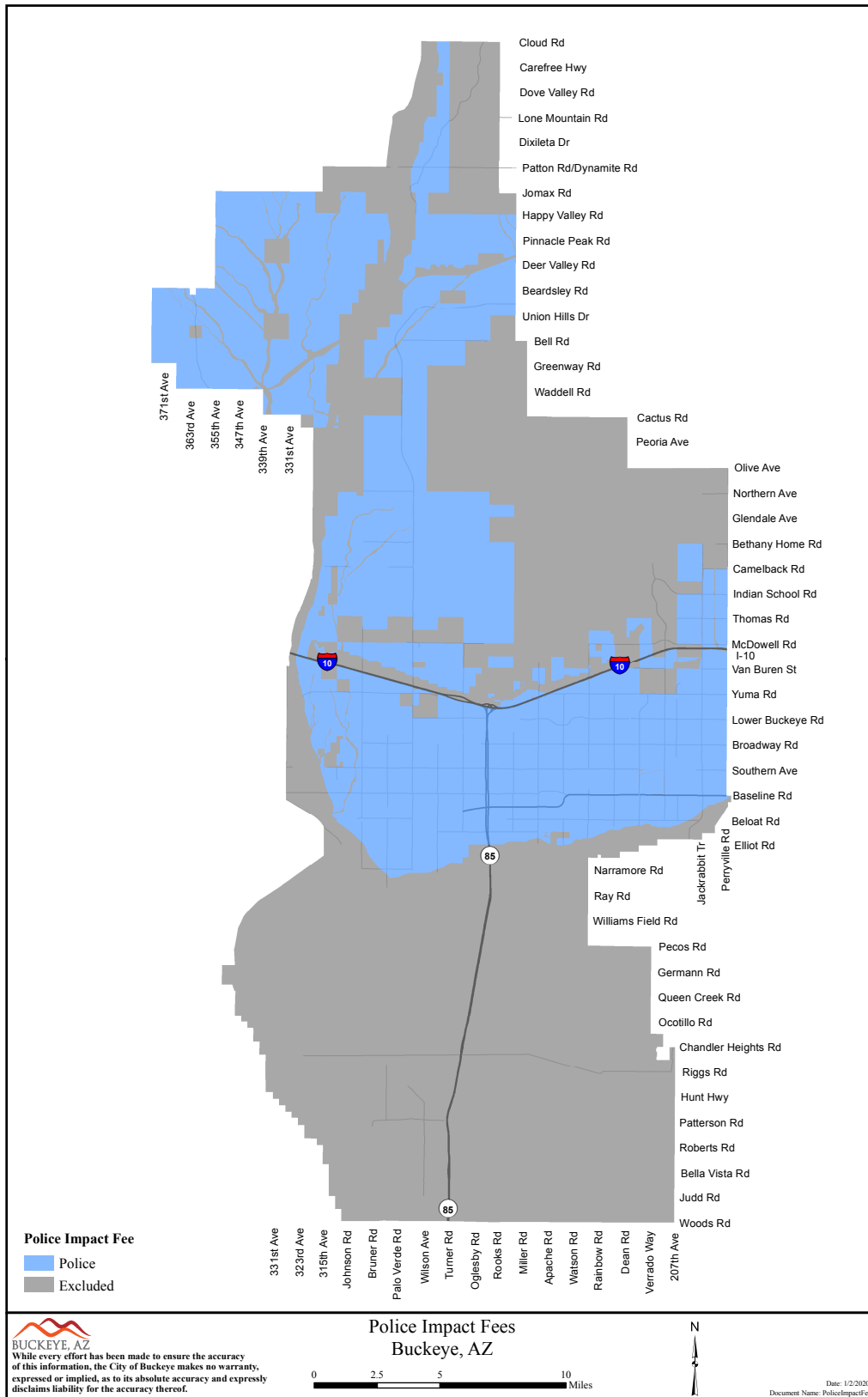




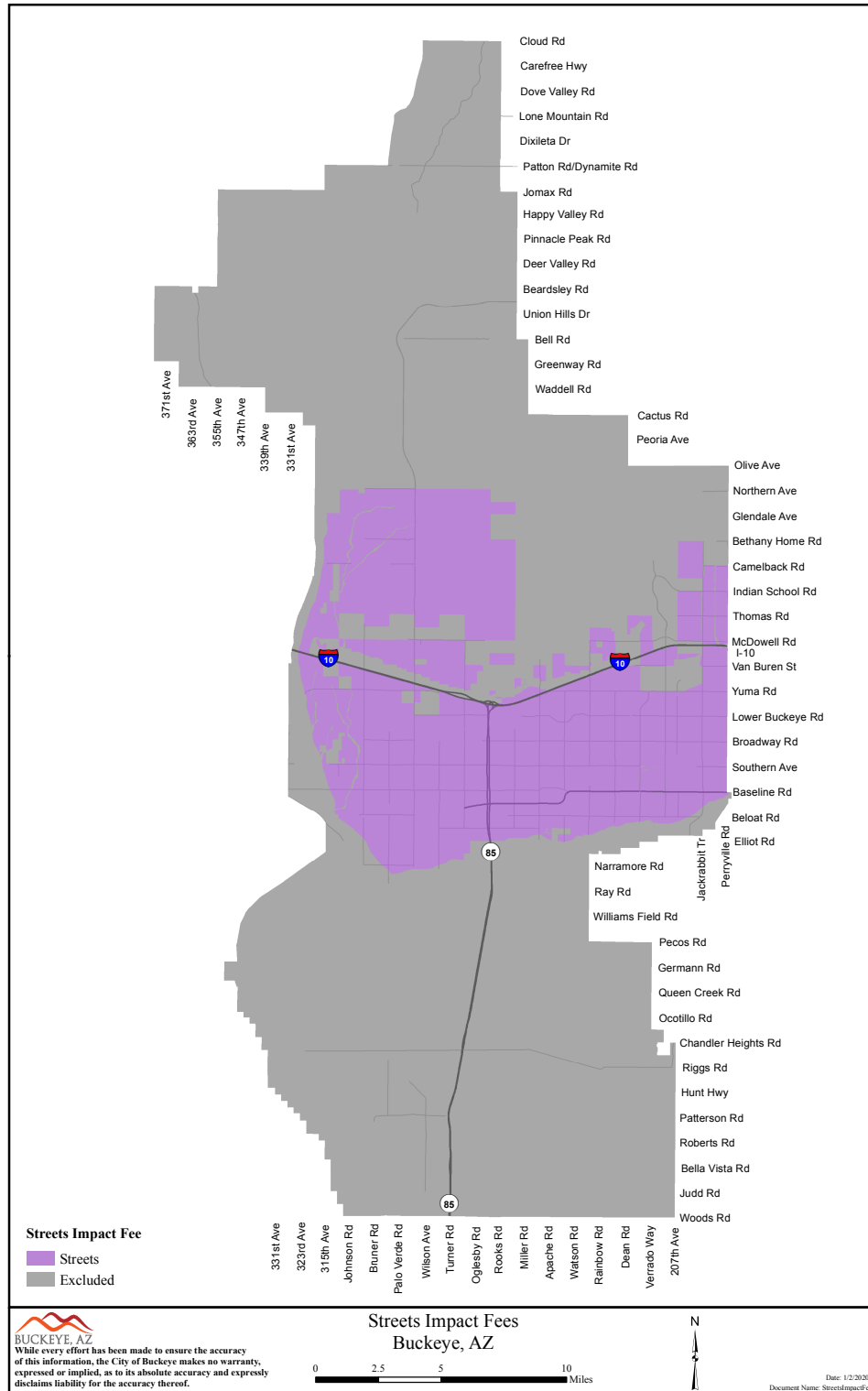
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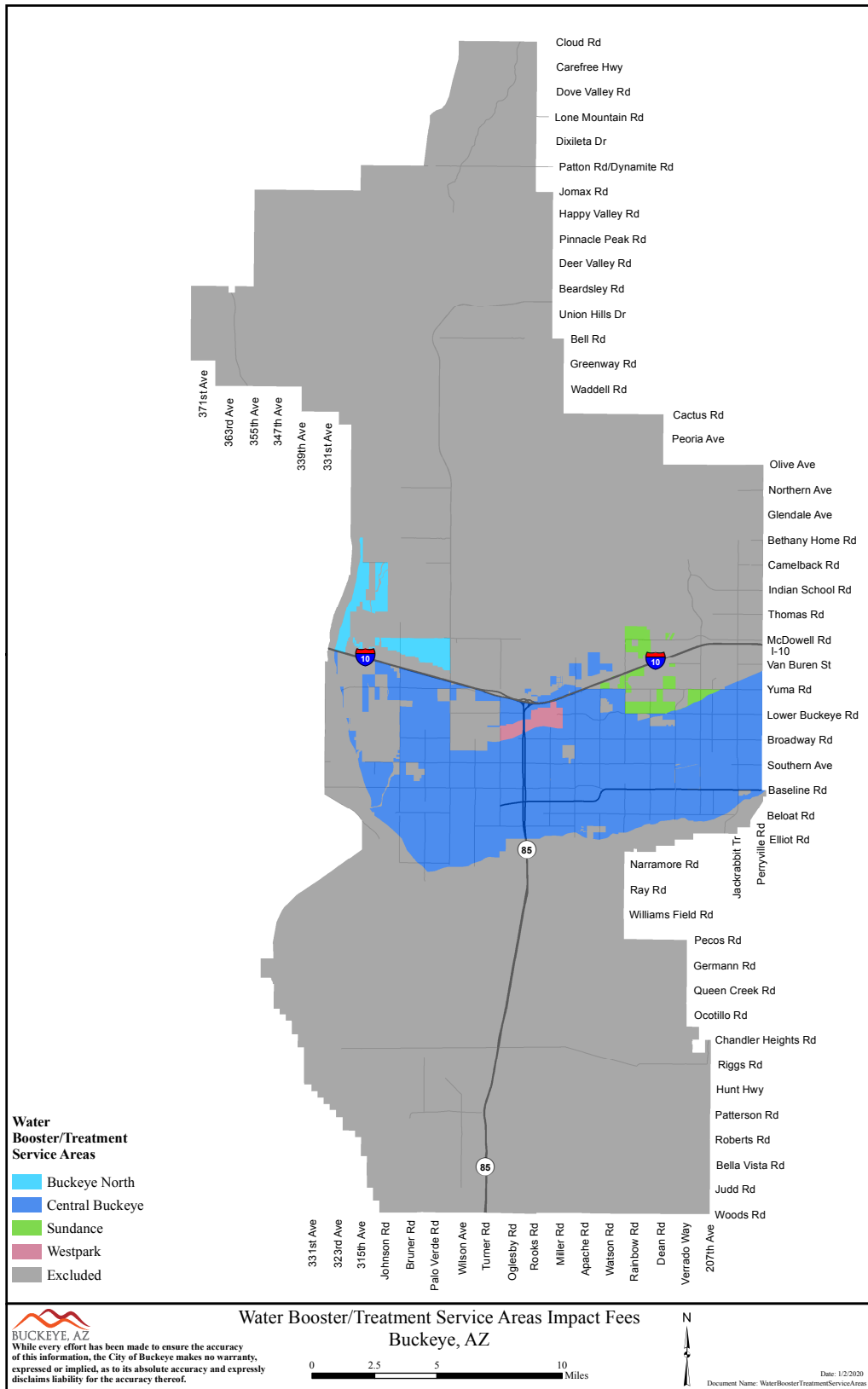
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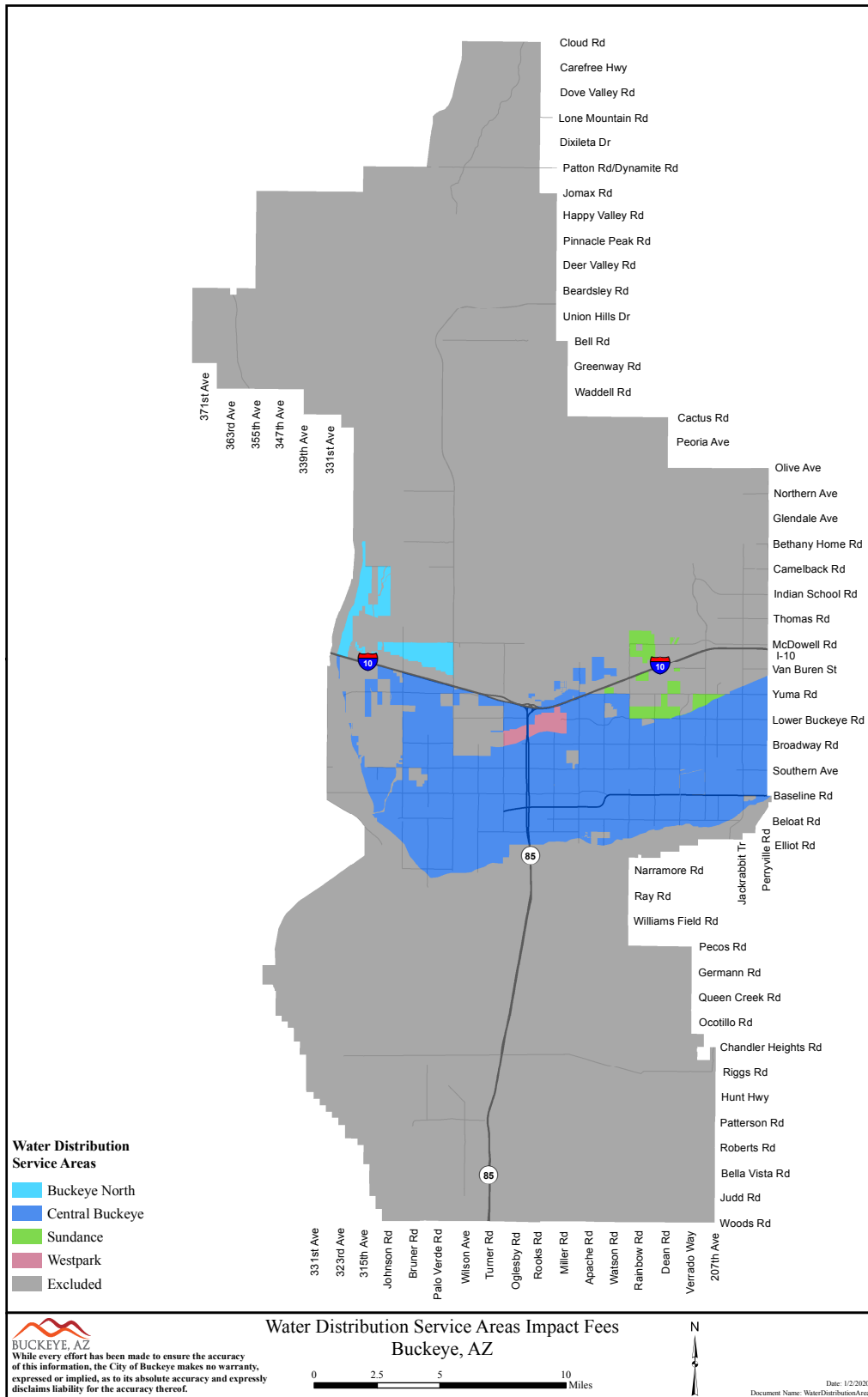


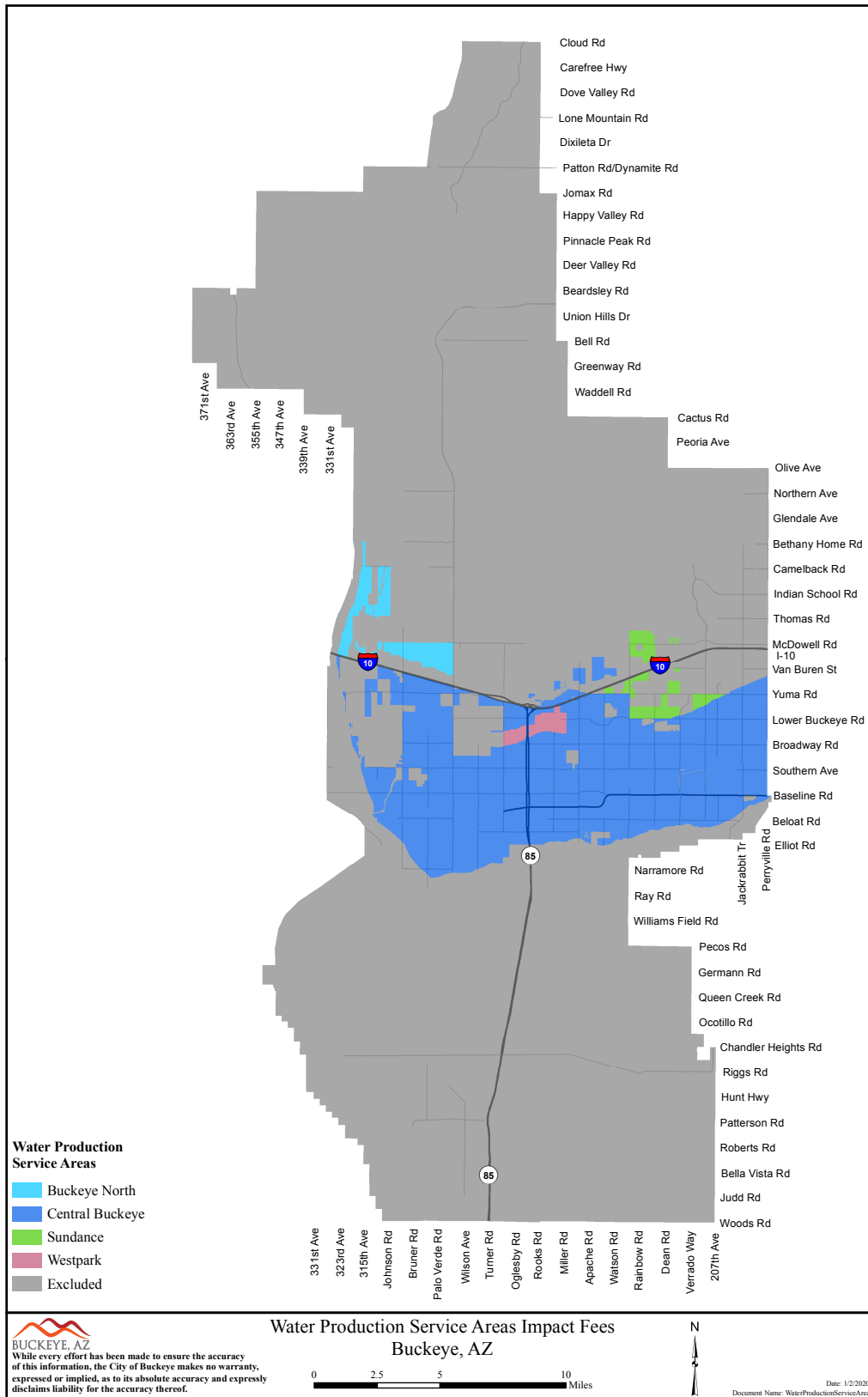
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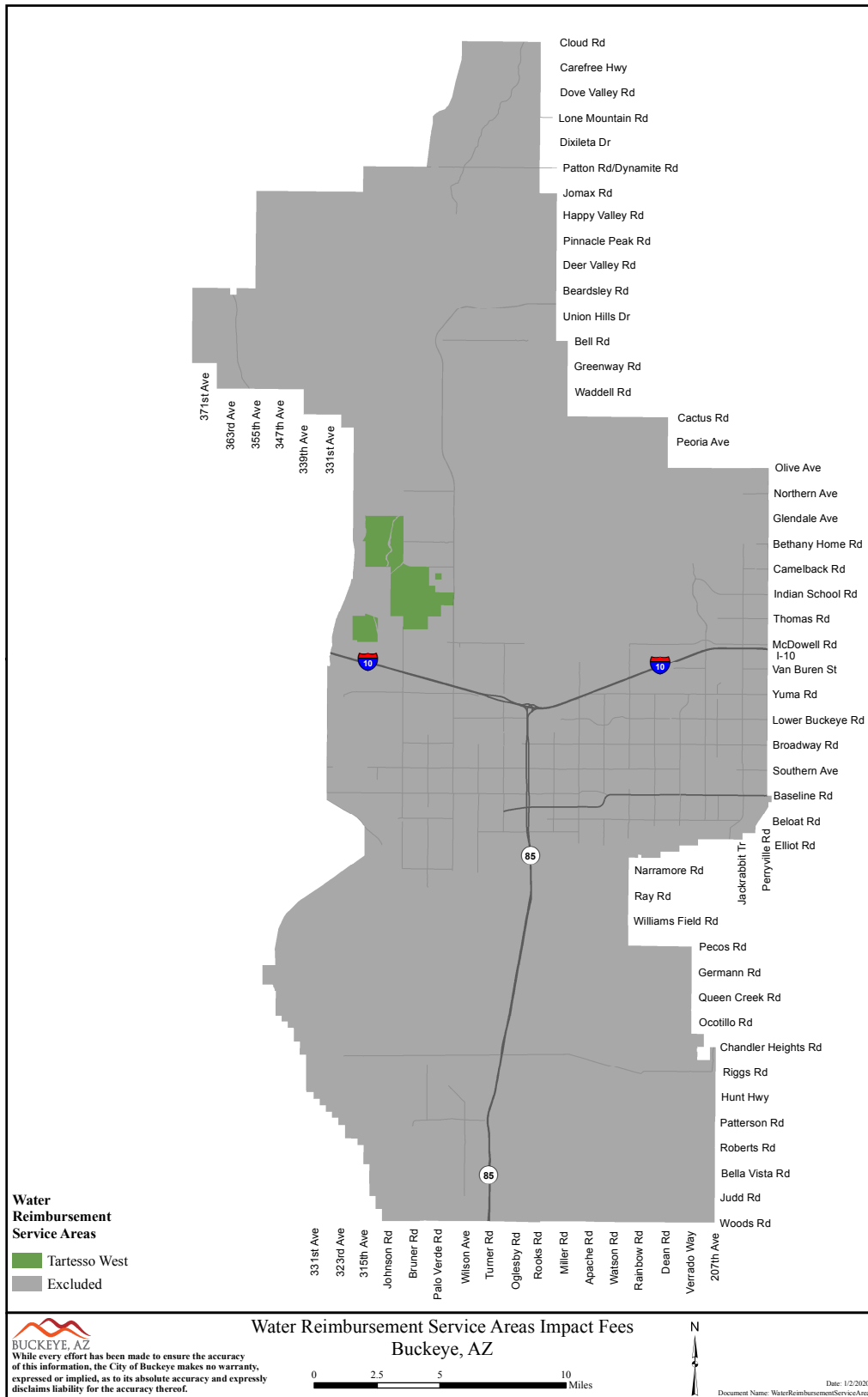


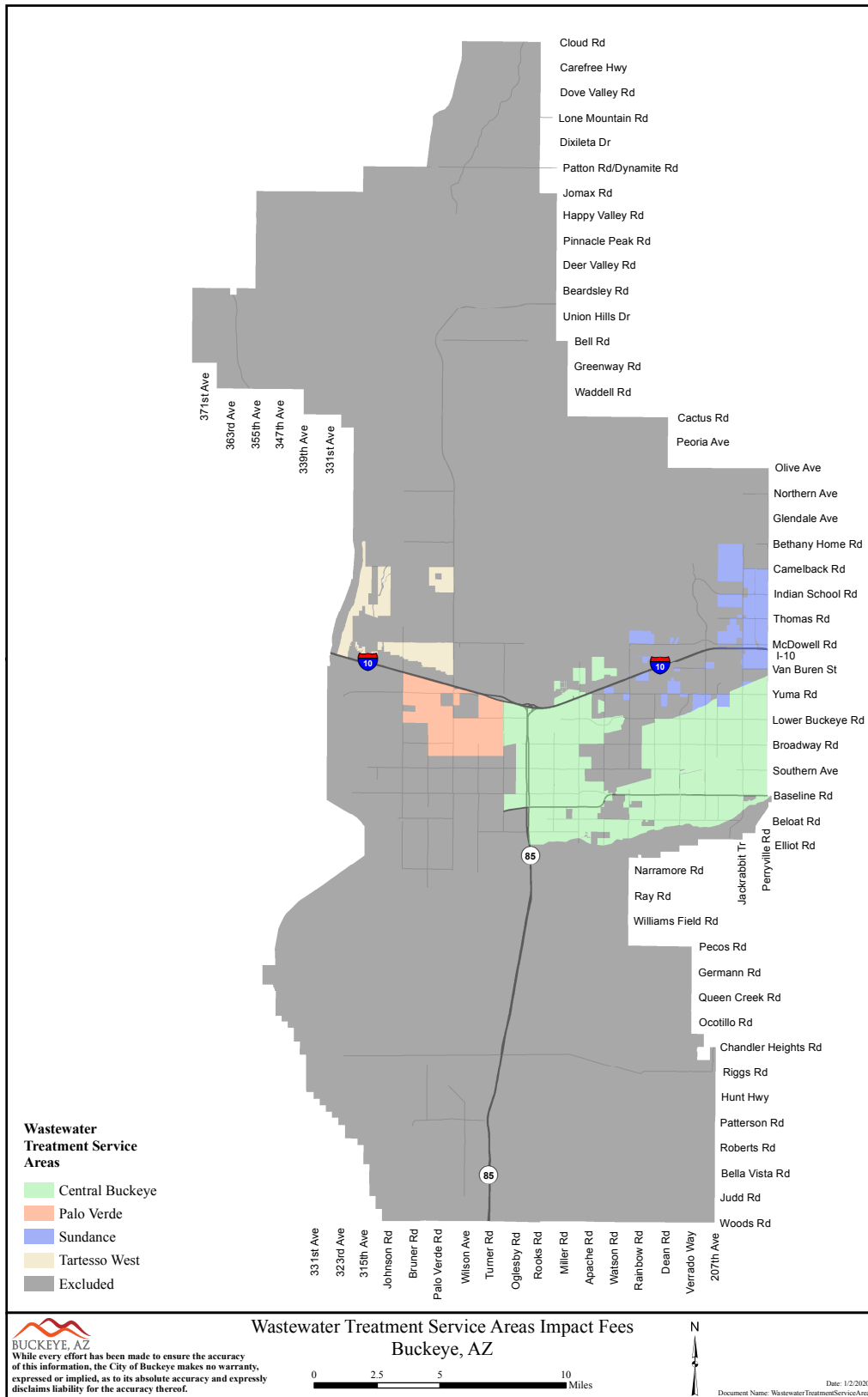
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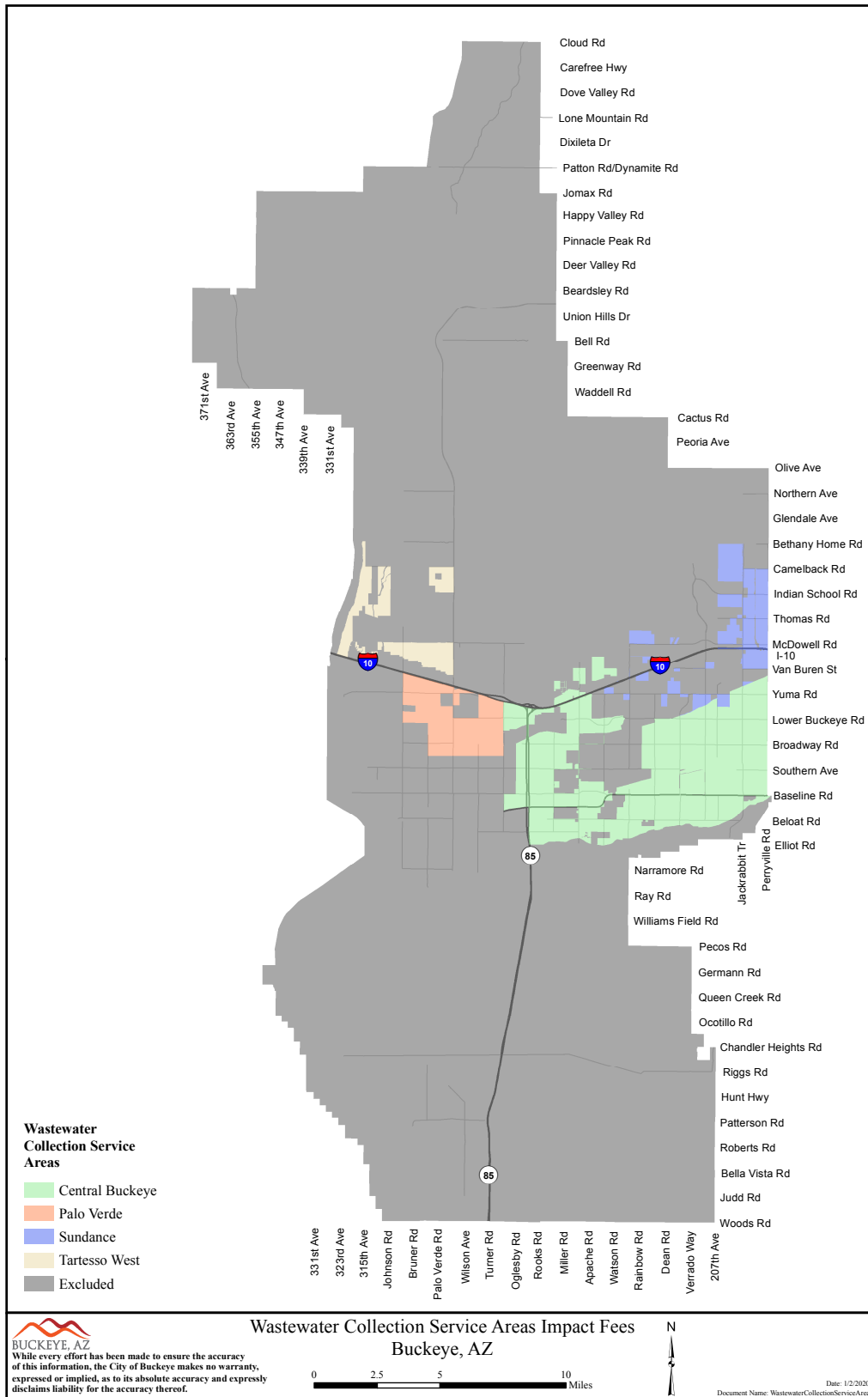


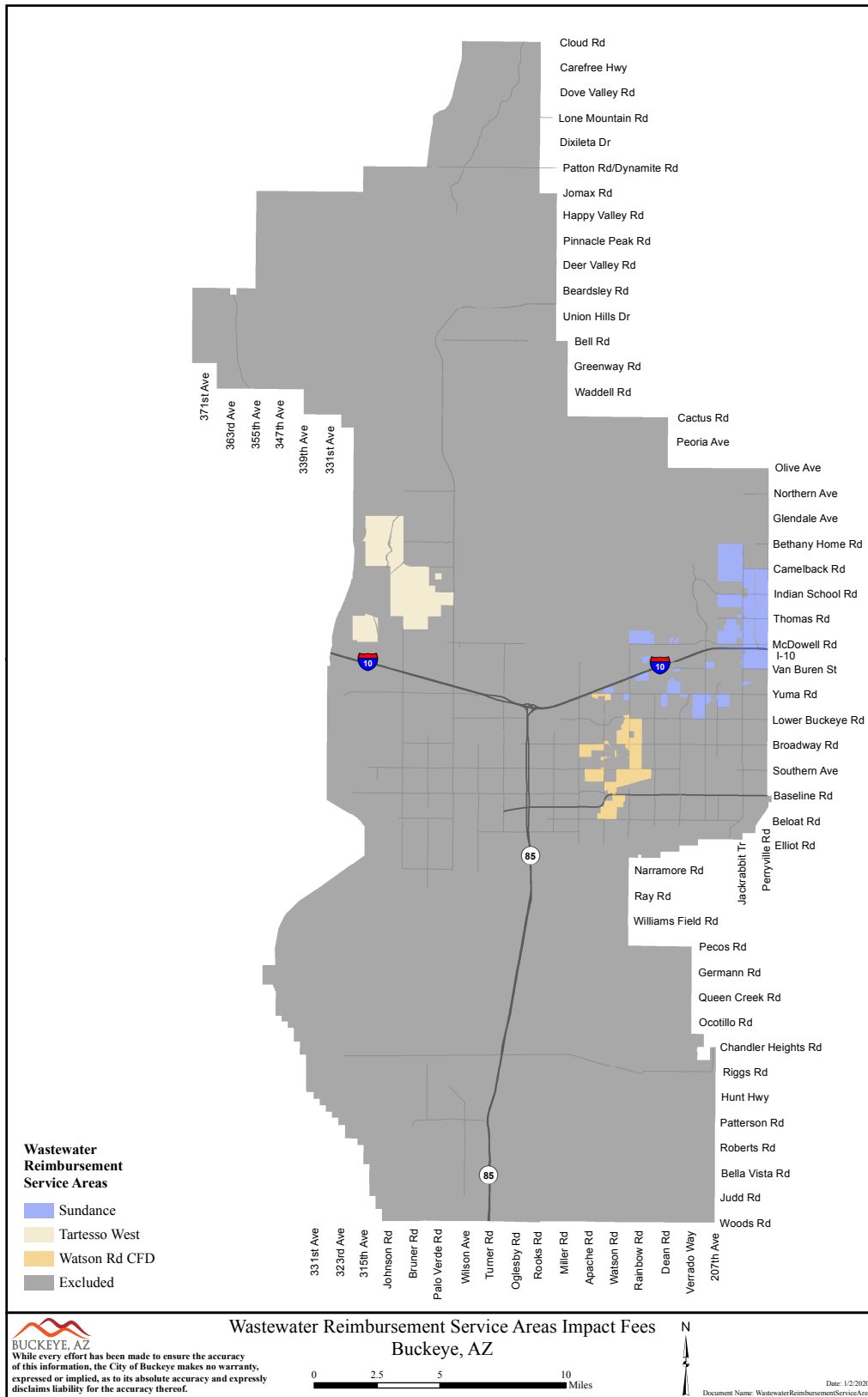
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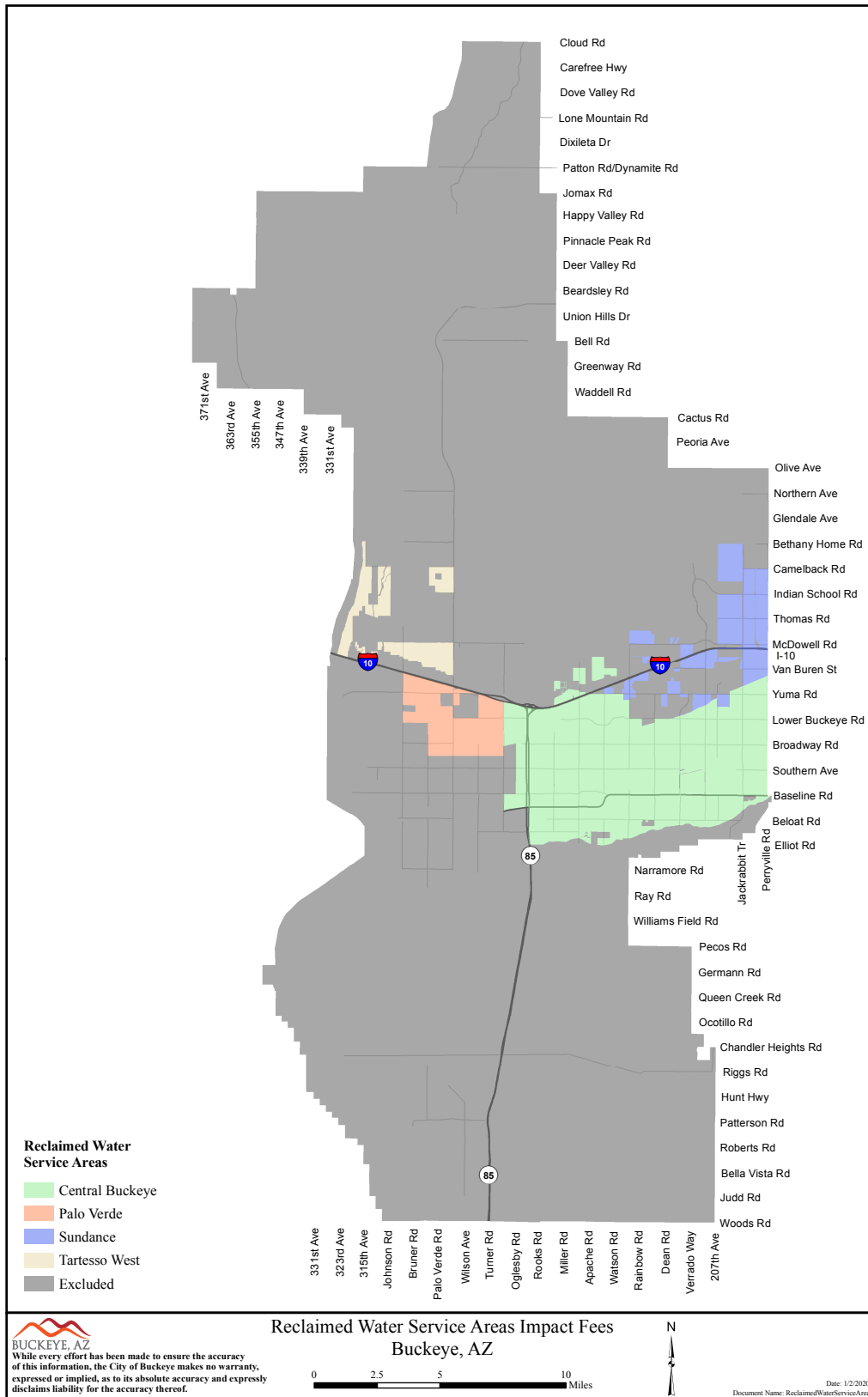


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APPENDIX E: LAND USE DEFINITIONS

RESIDENTIAL DEVELOPMENT

As discussed below, residential development categories are based on data from the U.S. Census Bureau, American Community Survey. Buckeye will collect development fees from all new residential units. One-time development fees are determined by site capacity (i.e. number of residential units).

Single-Family Units:

1. **Single-family detached** is a one-unit structure detached from any other house, that is, with open space on all four sides. Such structures are considered detached even if they have an adjoining shed or garage. A one-family house that contains a business is considered detached as long as the building has open space on all four sides.
2. **Single-family attached (townhouse)** is a one-unit structure that has one or more walls extending from ground to roof separating it from adjoining structures. In row houses (sometimes called townhouses), double houses, or houses attached to nonresidential structures, each house is a separate, attached structure if the dividing or common wall goes from ground to roof.
3. **Mobile home** includes both occupied and vacant mobile homes, to which no permanent rooms have been added. Mobile homes used only for business purposes or for extra sleeping space and mobile homes for sale on a dealer's lot, at the factory, or in storage are not counted in the housing inventory.

Multi-Family Units:

1. **2+ units (duplexes and apartments)** are units in structures containing two or more housing units, further categorized as units in structures with “2, 3 or 4, 5 to 9, 10 to 19, 20 to 49, and 50 or more apartments.”
2. **Boat, RV, Van, Etc.** includes any living quarters occupied as a housing unit that does not fit the other categories (e.g., houseboats, railroad cars, campers, and vans). Recreational vehicles, boats, vans, railroad cars, and the like are included only if they are occupied as a current place of residence.

NONRESIDENTIAL DEVELOPMENT

The proposed general nonresidential development categories (defined below) can be used for all new construction within Buckeye. Nonresidential development categories represent general groups of land uses that share similar average weekday vehicle trip generation rates and employment densities (i.e., jobs per thousand square feet of floor area).

Commercial: Establishments primarily selling merchandise, eating/drinking places, and entertainment uses. By way of example, *Commercial* includes shopping centers, supermarkets, pharmacies, restaurants, bars, nightclubs, automobile dealerships, and movie theaters, hotels, and motels.

Industrial: Establishments primarily engaged in the production, transportation, or storage of goods. By way of example, *Industrial* includes manufacturing plants, distribution warehouses, trucking companies, utility substations, power generation facilities, and telecommunications buildings.

Institutional: Establishments including public and quasi-public buildings providing educational, social assistance, or religious services. By way of example, *Institutional* includes schools, universities, churches, daycare facilities, and government buildings.

Office & Other Services: Establishments providing management, administrative, professional, or business services; personal and health care services. By way of example, *Office & Other Services* includes banks, business offices, assisted living facilities, nursing homes, hospitals, medical offices, and veterinarian clinics.

APPENDIX F: WATER CAPITAL COMPONENTS

BOOSTER/TREATMENT

Service Area	IWMP Area	Component	Unit	Growth Quantity	Unit Cost	10 Year Growth Share	10 Year Growth Quantities	10 Year Unit Total Costs	10 Year Total Soft Costs	10 Year Total Costs
Buckeye North	WTP 3	Land	Acre	12	\$45,000.00	100%	12	\$540,000	\$81,000	\$621,000
Buckeye North	WTP 3	Water Treatment	MGD	6	\$1,500,000.00	35%	2	\$3,150,000	\$472,500	\$3,622,500
Buckeye North	WTP 3	Storage	Gallons	3,000,000	\$1.60	34%	1,020,000	\$1,632,000	\$244,800	\$1,876,800
Buckeye North	WTP 3	Pump Station	GPM	8,333	\$2,500.00	25%	2,083	\$5,208,125	\$781,219	\$5,989,344
Central Buckeye	Broadway Road	Water Campus	Total	1	\$45,836,891.00	49%	0	\$22,272,145	\$0	\$22,272,145
Central Buckeye	Farallon	Water Campus	Total	1	\$29,600,865.00	60%	1	\$17,760,519	\$0	\$17,760,519
Central Buckeye	Farallon	Land	Acre	20	\$45,000.00	100%	20	\$900,000	\$135,000	\$1,035,000
Central Buckeye	WTP 5	Land	Acre	15	\$45,000.00	100%	15	\$675,000	\$101,250	\$776,250
Central Buckeye	WTP 5	Water Treatment	MGD	6	\$1,500,000.00	20%	1	\$1,800,000	\$270,000	\$2,070,000
Central Buckeye	WTP 5	Storage	Gallons	5,000,000	\$1.60	25%	1,250,000	\$2,000,000	\$300,000	\$2,300,000
Central Buckeye	WTP 5	Pump Station	GPM	8,333	\$2,500.00	20%	1,667	\$4,166,500	\$624,975	\$4,791,475
Central Buckeye	WTP 9	Land	Acre	8	\$45,000.00	100%	8	\$360,000	\$54,000	\$414,000
Central Buckeye	WTP 9	Water Treatment	MGD	8	\$1,500,000.00	20%	2	\$2,400,000	\$360,000	\$2,760,000
Central Buckeye	WTP 9	Storage	Gallons	6,000,000	\$1.60	25%	1,500,000	\$2,400,000	\$360,000	\$2,760,000
Central Buckeye	WTP 9	Pump Station	GPM	9,722	\$2,500.00	20%	1,944	\$4,861,000	\$729,150	\$5,590,150
Central Buckeye	WTP 9	Land	Acre	8	\$45,000.00	100%	8	\$360,000	\$54,000	\$414,000
Central Buckeye	WTP 9	Water Treatment	MGD	6	\$1,500,000.00	20%	1	\$1,800,000	\$270,000	\$2,070,000
Central Buckeye	WTP 9	Storage	Gallons	6,000,000	\$1.60	25%	1,500,000	\$2,400,000	\$360,000	\$2,760,000
Central Buckeye	WTP 9	Pump Station	GPM	9,722	\$2,500.00	20%	1,944	\$4,861,000	\$729,150	\$5,590,150
Sundance		Water Treatment	MGD	3	\$1,500,000.00	65%	2	\$2,925,000	\$438,750	\$3,363,750
Sundance		Storage	Gallons	3,000,000	\$1.60	30%	900,000	\$1,440,000	\$216,000	\$1,656,000
Sundance		Pump Station	GPM	6,500	\$2,500.00	20%	1,300	\$3,250,000	\$487,500	\$3,737,500

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Service Area	IWMP Area	Component	Unit	Growth Quantity	Unit Cost	10 Year Growth Share	10 Year Growth Quantities	10 Year Unit Total Costs	10 Year Total Soft Costs	10 Year Total Costs
Westpark	WTP WP	Land	Acre	12	\$45,000.00	25%	3	\$135,000	\$20,250	\$155,250
		Water								
Westpark	WTP WP	Treatment	MGD	2	\$1,500,000.00	50%	1	\$1,500,000	\$225,000	\$1,725,000
Westpark	WTP WP	Storage	Gallons	3,000,000	\$1.60	35%	1,050,000	\$1,680,000	\$252,000	\$1,932,000
Westpark	WTP WP	Pump Station	GPM	8,333	\$2,500.00	45%	3,750	\$9,374,625	\$1,406,194	\$10,780,819
Total										\$108,823,652

Source: Buckeye Integrated Water Master Plan (2017)

DISTRIBUTION

Service Area	IWMP Area	Component	Unit	Growth Quantity	Unit Cost	10 Year Growth Share	10 Year Growth Quantities	10 Year Unit Total Cost	10 Year Total Soft Costs	10 Year Total Costs
Buckeye North	3	Distribution Pipes	16 inch	60,546	\$160.00	20%	12,109	\$1,937,472	\$290,621	\$2,228,093
Buckeye North	3	Distribution Pipes	24 inch	8,077	\$210.00	25%	2,019	\$424,043	\$63,606	\$487,649
Buckeye North	3	Distribution Pipes	30 inch	2,000	\$260.00	50%	1,000	\$260,000	\$39,000	\$299,000
Buckeye North	3	Distribution Pipes	36 inch	763	\$300.00	25%	191	\$57,225	\$8,584	\$65,809
Buckeye North	3	Distribution Pipes	30 inch	2,000	\$260.00	10%	200	\$52,000	\$7,800	\$59,800
Buckeye North	5	Distribution Pipes	30 inch	2,000	\$260.00	10%	200	\$52,000	\$7,800	\$59,800
Central Buckeye	5	Distribution Pipes	16 inch	50,757	\$160.00	10%	5,076	\$812,112	\$121,817	\$933,929
Central Buckeye	5	Distribution Pipes	24 inch	3,091	\$210.00	10%	309	\$64,911	\$9,737	\$74,648
Central Buckeye	5	Distribution Pipes	36 inch	623	\$300.00	10%	62	\$18,690	\$2,804	\$21,494
Central Buckeye	7	Distribution Pipes	16 inch	52,765	\$160.00	10%	5,277	\$844,240	\$126,636	\$970,876
Central Buckeye	7	Distribution Pipes	24 inch	20,928	\$210.00	10%	2,093	\$439,488	\$65,923	\$505,411
Central Buckeye	7	Distribution Pipes	36 inch	0	\$300.00	10%	0	\$0	\$0	\$0
Central Buckeye	8	Distribution Pipes	16 inch	92,610	\$160.00	10%	9,261	\$1,481,760	\$222,264	\$1,704,024
Central Buckeye	8	Distribution Pipes	24 inch	22,013	\$210.00	10%	2,201	\$462,273	\$69,341	\$531,614
Central Buckeye	8	Distribution Pipes	36 inch	1,414	\$300.00	10%	141	\$42,420	\$6,363	\$48,783
Central Buckeye	9	Distribution Pipes	16 inch	52,765	\$160.00	10%	5,277	\$844,240	\$126,636	\$970,876
Central Buckeye	9	Distribution Pipes	16 inch	78,537	\$160.00	10%	7,854	\$1,256,592	\$188,489	\$1,445,081

Service Area	IWMP Area	Component	Unit	Growth Quantity	Unit Cost	10 Year Growth Share	10 Year Growth Quantities	10 Year Unit Total Cost	10 Year Total Soft Costs	10 Year Total Costs
Central Buckeye	9	Distribution Pipes	24 inch	7,414	\$210.00	10%	741	\$155,694	\$23,354	\$179,048
Central Buckeye	9	Distribution Pipes	36 inch	0	\$300.00	10%	0	\$0	\$0	\$0
Central Buckeye	Broadway Road	Distribution Pipes	16 inch	10,500	\$160.00	50%	5,250	\$840,000	\$126,000	\$966,000
Central Buckeye	Broadway Road	Distribution Pipes	24 inch	5,280	\$210.00	50%	2,640	\$554,400	\$83,160	\$637,560
Central Buckeye	Farallon	Distribution Pipes	16 inch	10,500	\$160.00	60%	6,300	\$1,008,000	\$151,200	\$1,159,200
Central Buckeye	Farallon	Distribution Pipes	24 inch	5,280	\$210.00	60%	3,168	\$665,280	\$99,792	\$765,072
Sundance		Distribution Pipes	16 inch	1,532	\$160.00	100%	1,532	\$245,120	\$36,768	\$281,888
Westpark	1	Distribution Pipes	16 inch	25,483	\$160.00	25%	6,371	\$1,019,320	\$152,898	\$1,172,218
Westpark	1	Distribution Pipes	24 inch	5,738	\$210.00	25%	1,435	\$301,245	\$45,187	\$346,432
Total										\$15,914,303

Source: Buckeye Integrated Water Master Plan (2017)

PRODUCTION

Service Area	IWMP Area	Component	Unit	Growth Quantity	Unit Cost	10 Year Growth Share	10 Year Growth Quantities	10 Year Unit Total Cost	10 Year Total Soft Costs	10 Year Total Costs
Buckeye North	WTP 3	Well	Each	10	\$2,515,000.00	10%	1	\$2,515,000	\$377,250	\$2,892,250
Buckeye North	WTP 3	Well Land	W Acres	5	\$55,000.00	10%	1	\$27,500	\$4,125	\$31,625
Buckeye North	WTP 3	Well Piping	W 12 inch	5,560	\$145.00	10%	556	\$80,620	\$12,093	\$92,713
Buckeye North	WTP 3	Well Piping	W 16 inch	5,000	\$160.00	10%	500	\$80,000	\$12,000	\$92,000
Central Buckeye	Broadway Road	Well Land	W Acres	2	\$55,000.00	100%	2	\$110,000	\$16,500	\$126,500
Central Buckeye	Broadway Road	Well	Each	4	\$2,515,000.00	50%	2	\$5,030,000	\$754,500	\$5,784,500
Central Buckeye	Broadway Road	Well Piping	W 12 inch	5,280	\$145.00	50%	2,640	\$382,800	\$57,420	\$440,220
Central Buckeye	Broadway Road	Well Piping	W 16 inch	5,280	\$160.00	50%	2,640	\$422,400	\$63,360	\$485,760
Central Buckeye	Farallon	Well Land	W Acres	3	\$55,000.00	50%	2	\$82,500	\$12,375	\$94,875
Central Buckeye	Farallon	Well	Each	6	\$2,515,000.00	34%	2	\$5,130,600	\$769,590	\$5,900,190
Central Buckeye	Farallon	Well Piping	W 12 inch	12,000	\$145.00	50%	6,000	\$870,000	\$130,500	\$1,000,500

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Service Area	IWMP Area	Component	Unit	Growth Quantity	Unit Cost	10 Year Growth Share	10 Year Growth Quantities	10 Year Unit Total Cost	10 Year Total Soft Costs	10 Year Total Costs
Central Buckeye	Farallon	Well Piping	W 16 inch	12,000	\$160.00	50%	6,000	\$960,000	\$144,000	\$1,104,000
Central Buckeye	WTP 5	Well	Each	10	\$2,515,000.00	10%	1	\$2,515,000	\$377,250	\$2,892,250
Central Buckeye	WTP 5	Well Land	W Acres	5	\$55,000.00	10%	1	\$27,500	\$4,125	\$31,625
Central Buckeye	WTP 5	Well Piping	W 12 inch	11,120	\$145.00	10%	1,112	\$161,240	\$24,186	\$185,426
Central Buckeye	WTP 5	Well Piping	W 16 inch	10,000	\$160.00	10%	1,000	\$160,000	\$24,000	\$184,000
Central Buckeye	WTP 5	Well Piping	W 24 inch	10,000	\$210.00	10%	1,000	\$210,000	\$31,500	\$241,500
Central Buckeye	WTP 9	Well	Each	12	\$2,515,000.00	10%	1	\$3,018,000	\$452,700	\$3,470,700
Central Buckeye	WTP 9	Well Land	W Acres	6	\$55,000.00	10%	1	\$33,000	\$4,950	\$37,950
Central Buckeye	WTP 9	Well Piping	W 12 inch	16,680	\$145.00	10%	1,668	\$241,860	\$36,279	\$278,139
Central Buckeye	WTP 9	Well Piping	W 16 inch	15,000	\$160.00	10%	1,500	\$240,000	\$36,000	\$276,000
Central Buckeye	WTP 9	Well Piping	W 24 inch	10,000	\$210.00	10%	1,000	\$210,000	\$31,500	\$241,500
Central Buckeye	WTP 9	Well	Each	16	\$2,515,000.00	6%	1	\$2,414,400	\$362,160	\$2,776,560
Central Buckeye	WTP 9	Well Land	W Acres	8	\$55,000.00	6%	0	\$26,400	\$3,960	\$30,360
Central Buckeye	WTP 9	Well Piping	W 12 inch	16,680	\$145.00	6%	1,001	\$145,116	\$21,767	\$166,883
Central Buckeye	WTP 9	Well Piping	W 16 inch	15,000	\$160.00	6%	900	\$144,000	\$21,600	\$165,600
Central Buckeye	WTP 9	Well Piping	W 24 inch	10,000	\$210.00	6%	600	\$126,000	\$18,900	\$144,900
Sundance		Well Land	W Acres	2	\$55,000.00	50%	1	\$55,000	\$8,250	\$63,250
Sundance		Well	Each	2	\$2,515,000.00	50%	1	\$2,515,000	\$377,250	\$2,892,250
Sundance		Well Piping	W 12 inch	5,280	\$145.00	35%	1,848	\$267,960	\$40,194	\$308,154
Sundance		Well Piping	W 16 inch	5,000	\$160.00	35%	1,750	\$280,000	\$42,000	\$322,000
Westpark	WTP WP	Well	Each	8	\$2,515,000.00	25%	2	\$5,030,000	\$754,500	\$5,784,500
Westpark	WTP WP	Well Land	W Acres	4	\$55,000.00	25%	1	\$55,000	\$8,250	\$63,250
Westpark	WTP WP	Well Piping	W 12 inch	11,120	\$145.00	25%	2,780	\$403,100	\$60,465	\$463,565
Westpark	WTP WP	Well Piping	W 16 inch	10,000	\$160.00	25%	2,500	\$400,000	\$60,000	\$460,000
Total										\$39,525,495

Source: Buckeye Integrated Water Master Plan (2017)

REIMBURSEMENT

Service Area	IWMP Area	Component	Unit	Growth Quantity	Unit Cost	10 Year Growth Share	10 Year Growth Quantities	10 Year Unit Total Costs	10 Year Total Soft Costs	10 Year Total Costs
Tartesso West		Piping	Total	1	\$3,829,421.27	100%	1	\$3,829,421	\$0	\$3,829,421
Tartesso West		Well #3	Total	1	\$1,200,000.00	100%	1	\$1,200,000	\$0	\$1,200,000
Total										\$5,029,421

Source: Buckeye Engineering Department

APPENDIX G: WASTEWATER CAPITAL COMPONENTS

TREATMENT

Service Area	IWMP Area	Component	Unit	Growth Quantity	Unit Cost	10 Year Growth Share	10 Year Growth Quantities	10 Year Unit Total Cost	10 Year Total Soft Cost	10 Year Total Costs
Central Buckeye	1	Wastewater Treatment	MGD	13	\$12,000,000.00	8%	1.0	\$12,480,000	\$1,872,000	\$14,352,000
Central Buckeye	8	Wastewater Treatment	MGD		\$12,000,000.00	10%	0.0	\$0	\$0	\$0
Central Buckeye	8	WWTP Land	Acre		\$45,000.00	10%	0.0	\$0	\$0	\$0
Palo Verde	5	Wastewater Treatment	MGD	17	\$12,000,000.00	4%	0.7	\$8,160,000	\$1,224,000	\$9,384,000
Palo Verde	5	WWTP Land	Acre	16	\$45,000.00	100%	16.0	\$720,000	\$108,000	\$828,000
Total										\$24,564,000

Source: Buckeye Integrated Water Master Plan (2017)

COLLECTION

Service Area	IWMP Area	Component	Unit	Growth Quantity	Unit Cost	10 Year Growth Share	10 Year Growth Quantities	10 Year Unit Total Cost	10 Year Total Soft Cost	10 Year Total Costs
Central Buckeye	1	Collection Pipes	12 inch	1,571	\$180.00	25%	393	\$70,695	\$10,604	\$81,299
Central Buckeye	8	Collection Pipes	12 inch	2,820	\$180.00	10%	282	\$50,760	\$7,614	\$58,374
Central Buckeye	1	Collection Pipes	15 inch	19,659	\$210.00	25%	4,915	\$1,032,098	\$154,815	\$1,186,912
Central Buckeye	8	Collection Pipes	15 inch	5,169	\$210.00	10%	517	\$108,549	\$16,282	\$124,831
Central Buckeye	1	Collection Pipes	18 inch	13,853	\$230.00	25%	3,463	\$796,548	\$119,482	\$916,030
Central Buckeye	8	Collection Pipes	18 inch	21,238	\$230.00	10%	2,124	\$488,474	\$73,271	\$561,745
Central Buckeye	1	Collection Pipes	21 inch	10,000	\$245.00	25%	2,500	\$612,500	\$91,875	\$704,375
Central Buckeye	8	Collection Pipes	21 inch		\$245.00	10%	0	\$0	\$0	\$0
Central Buckeye	1	Collection Pipes	24 inch	10,000	\$265.00	25%	2,500	\$662,500	\$99,375	\$761,875
Central Buckeye	8	Collection Pipes	24 inch	7,688	\$265.00	10%	769	\$203,732	\$30,560	\$234,292
Central Buckeye	1	Collection Pipes	30 inch	10,000	\$348.00	25%	2,500	\$870,000	\$130,500	\$1,000,500
Central Buckeye	8	Collection Pipes	30 inch	5,426	\$348.00	10%	543	\$188,825	\$28,324	\$217,149
Central Buckeye	1	Collection Pipes	36 inch		\$450.00	25%	0	\$0	\$0	\$0
Central Buckeye	8	Collection Pipes	36 inch	8,054	\$450.00	10%	805	\$362,430	\$54,365	\$416,795

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Service Area	IWMP Area	Component	Unit	Growth Quantity	Unit Cost	10 Year Growth Share	10 Year Growth Quantities	10 Year Unit Total Cost	10 Year Total Soft Cost	10 Year Total Costs
Central Buckeye	1	Collection Pipes	42 inch	2,206	\$530.00	25%	552	\$292,295	\$43,844	\$336,139
Central Buckeye	8	Collection Pipes	42 inch	123	\$530.00	10%	12	\$6,519	\$978	\$7,497
Central Buckeye	1	Collection Pipes	48 inch		\$600.00	25%	0	\$0	\$0	\$0
Central Buckeye	8	Collection Pipes	48 inch		\$600.00	10%	0	\$0	\$0	\$0
Central Buckeye	1	Collection Pipes	60 inch		\$620.00	25%	0	\$0	\$0	\$0
Central Buckeye	8	Collection Pipes	60 inch		\$620.00	10%	0	\$0	\$0	\$0
Central Buckeye	8	Force Main	8 inch FM	26,112	\$130.00	30%	7,834	\$1,018,368	\$152,755	\$1,171,123
Central Buckeye	5	Pump Station	GPM	783	\$2,500.00	100%	783	\$1,957,500	\$293,625	\$2,251,125
Central Buckeye	8	Pump Station	GPM	10,416	\$2,500.00	7%	729	\$1,822,800	\$273,420	\$2,096,220
Central Buckeye	5	Pump Station Land	Acre	1	\$45,000.00	50%	1	\$22,500	\$3,375	\$25,875
Central Buckeye	8	Pump Station Land	Acre	3	\$45,000.00	100%	3	\$135,000	\$20,250	\$155,250
Palo Verde	5	Collection Pipes	12 inch	24,454	\$180.00	8%	1,956	\$352,138	\$52,821	\$404,958
Palo Verde	5	Collection Pipes	15 inch	13,235	\$210.00	8%	1,059	\$222,348	\$33,352	\$255,700
Palo Verde	5	Collection Pipes	18 inch	40,642	\$230.00	8%	3,251	\$747,813	\$112,172	\$859,985
Palo Verde	5	Collection Pipes	21 inch	5,213	\$245.00	8%	417	\$102,175	\$15,326	\$117,501
Palo Verde	5	Collection Pipes	24 inch	8,070	\$265.00	8%	646	\$171,084	\$25,663	\$196,747
Palo Verde	5	Collection Pipes	30 inch	13,328	\$348.00	8%	1,066	\$371,052	\$55,658	\$426,709
Palo Verde	5	Collection Pipes	36 inch	42,018	\$450.00	8%	3,361	\$1,512,648	\$226,897	\$1,739,545
Palo Verde	5	Collection Pipes	42 inch	10,611	\$530.00	8%	849	\$449,906	\$67,486	\$517,392
Palo Verde	5	Collection Pipes	48 inch		\$600.00	8%	0	\$0	\$0	\$0
Palo Verde	5	Collection Pipes	60 inch		\$620.00	8%	0	\$0	\$0	\$0
Sundance	2	Collection Pipes	12 inch	5,280	\$180.00	100%	5,280	\$950,400	\$142,560	\$1,092,960
Sundance	2	Collection Pipes	15 inch	2,500	\$210.00	100%	2,500	\$525,000	\$78,750	\$603,750
Sundance	2	Collection Pipes	18 inch		\$230.00	100%	0	\$0	\$0	\$0
Sundance	2	Collection Pipes	21 inch		\$245.00	100%	0	\$0	\$0	\$0
Sundance	2	Collection Pipes	24 inch		\$265.00	100%	0	\$0	\$0	\$0
Sundance	2	Collection Pipes	30 inch		\$348.00	100%	0	\$0	\$0	\$0
Sundance	2	Collection Pipes	36 inch		\$450.00	100%	0	\$0	\$0	\$0
Sundance	2	Collection Pipes	42 inch		\$530.00	100%	0	\$0	\$0	\$0

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Service Area	IWMP Area	Component	Unit	Growth Quantity	Unit Cost	10 Year Growth Share	10 Year Growth Quantities	10 Year Unit Total Cost	10 Year Total Soft Cost	10 Year Total Costs
Sundance	2	Collection Pipes	48 inch		\$600.00	100%	0	\$0	\$0	\$0
Sundance	2	Collection Pipes	60 inch		\$620.00	100%	0	\$0	\$0	\$0
Total										\$18,522,653

Source: Buckeye Integrated Water Master Plan (2017)

REIMBURSEMENT

Service Area	IWMP Area	Component	Unit	Growth Quantity	Unit Cost	10 Year Growth Share	10 Year Growth Quantities	10 Year Unit Total Cost	10 Year Total Soft Cost	10 Year Total Costs
Sundance		WWTP	Total	1	\$36,854,775.00	100%	1	\$36,854,775	\$0	\$36,854,775
Tartesso West		WWTP	Total	1	\$10,370,400.00	100%	1	\$10,370,400	\$0	\$10,370,400
Watson Road CFD		Pipes	Total	1	\$12,210,000.00	100%	1	\$12,210,000	\$0	\$12,210,000
Watson Road CFD		WWTP	Total	1	\$36,790,000.00	100%	1	\$36,790,000	\$0	\$36,790,000
Total										\$96,225,175

Source: Buckeye Engineering Department

RECLAIMED WATER

Service Area	IWMP Area	Component	Unit	Growth Quantity	Unit Cost	10 Year Growth Share	10 Year Growth Quantities	10 Year Unit Total Cost	10 Year Total Soft Cost	10 Year Total Costs
Central Buckeye		Distribution Pipes	16 Inch	15,000	\$160.00	25%	3,750	\$600,000	\$90,000	\$690,000
Central Buckeye		Point of Use	GPD	1,500,000	\$1.00	5%	75,000	\$75,000	\$11,250	\$86,250
Central Buckeye		Pump Station	GPM	5,000	\$2,500.00	5%	250	\$625,000	\$93,750	\$718,750
Central Buckeye		Storage	Gallons	2,000,000	\$1.20	12%	240,000	\$288,000	\$43,200	\$331,200
Palo Verde		Distribution Pipes	16 Inch	5,280	\$160.00	25%	1,320	\$211,200	\$31,680	\$242,880
Palo Verde		Point of Use	GPD	500,000	\$1.00	100%	500,000	\$500,000	\$75,000	\$575,000
Palo Verde		Pump Station	GPM	400	\$2,500.00	100%	400	\$1,000,000	\$150,000	\$1,150,000
Palo Verde		Storage	Gallons	500,000	\$1.20	100%	500,000	\$600,000	\$90,000	\$690,000
Sundance		Distribution Pipes	16 Inch	5,280	\$160.00	25%	1,320	\$211,200	\$31,680	\$242,880
Sundance		Point of Use	GPD	1,000,000	\$1.00	25%	250,000	\$250,000	\$37,500	\$287,500
Sundance		Storage	Gallons	1,000,000	\$1.20	25%	250,000	\$300,000	\$45,000	\$345,000
Sundance		WWTP Land	Acre	3	\$45,000.00	100%	3	\$135,000	\$20,250	\$155,250
Total										\$5,514,710

Source: Buckeye Integrated Water Master Plan (2017)