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

**Prepared for:**
## Glendale, Arizona

**October 24, 2023**


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# EXECUTIVE SUMMARY

The City of Glendale, Arizona, contracted with TischlerBise to document land use assumptions, prepare the Water and Wastewater Facilities Infrastructure Improvements Plan (hereinafter referred to as the "IIP"), and update water and wastewater facilities development fees 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 Water and Wastewater Facilities IIP located is in the middle section of this document, and the proposed water and wastewater facilities 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 Glendale's Water and Wastewater Facilities Infrastructure Improvements Plan and associated update to its water and wastewater facilities development fees 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 methodology 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 methodologies for calculating development fees and how those methodologies 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 methodology 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 methodology 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, methodologies, and infrastructure cost components for each necessary public service.

**Figure 1: Proposed Development Fee Service Areas, Methodologies, and Cost Components**

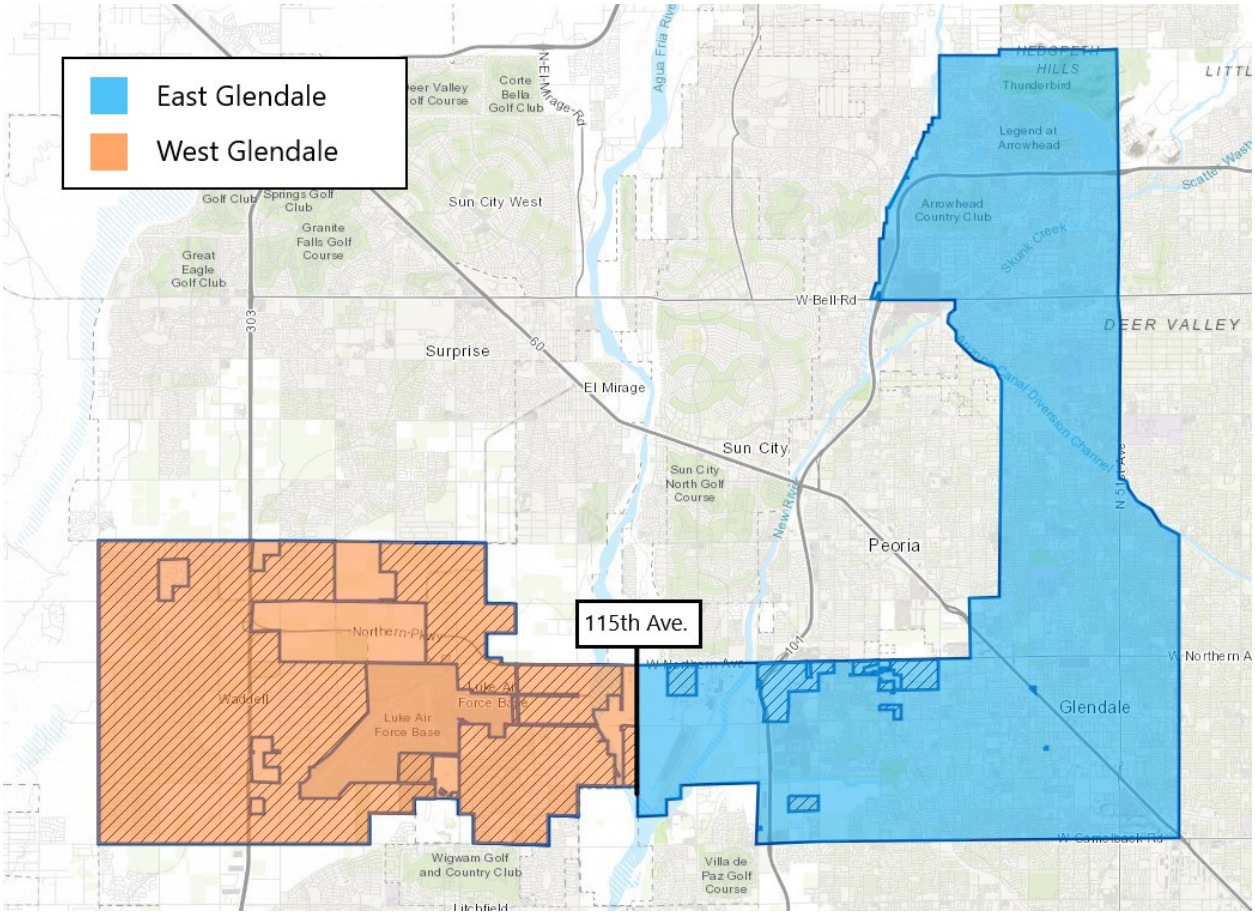
| Necessary Public Service | Service Area | Cost Recovery | Incremental Expansion | Plan-Based | Cost Allocation |
|---|---|---|---|---|---|
| Water Facilities | East Glendale | Water Treatment | N/A | Water Supply, Wells, Distribution Lines, Development Fee Report | Gallons |
| | West Glendale | N/A | N/A | N/A | N/A |
| Wastewater Facilities | East Glendale | Wastewater Treatment | N/A | Lift Station, Collection Lines, Development Fee Report | Gallons |
| | West Glendale | N/A | N/A | N/A | N/A |

Calculations throughout this report are based on an analysis conducted using Excel software. Most results are discussed in the report using two, three, and four decimal places, which represent rounded figures. However, the analysis itself uses figures carried to their ultimate decimal places; therefore, the sums and products generated in the analysis may not equal the sum or product if the reader replicates the calculation with the factors shown in the report (due to the rounding of figures shown, not in the analysis).

## SERVICE AREAS

Shown below, Figure 2 illustrates the services areas used to develop the Water and Wastewater Facilities Infrastructure Improvements Plan. Since new development west of 115th Avenue will not connect to Glendale's water and sewer systems, TischlerBise recommends using 115th Avenue as the border between the two service areas for water and wastewater facilities development fees. **Glendale will only assess water and wastewater facilities development fees to new development in East Glendale.**

**Figure 2: Proposed Development Fee Service Areas**



## PROPOSED DEVELOPMENT FEES

**Glendale will only assess water and wastewater development fees to development in East Glendale.** Water and wastewater development fees will be assessed based on meter size. The proposed fees represent the maximum allowable fees. Glendale 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 Glendale's LOS standards. All costs in the Development Fee Report represent current dollars with no assumed inflation over time. If costs change significantly over time, development fees should be recalculated.

**Figure 3: Proposed Development Fees**

| Fees per Meter | | | | | |
|---|---|---|---|---|---|
| Meter Size | Water | Wastewater | Proposed Fees | Current Fees | Increase / (Decrease) |
| 0.75-inch | $3,330 | $3,795 | $7,125 | $4,532 | $2,593 |
| 1.00-inch | $5,561 | $6,337 | $11,898 | $7,562 | $4,336 |
| 1.50-inch | $11,089 | $12,636 | $23,725 | $15,068 | $8,657 |
| 2.00-inch | $17,748 | $20,225 | $37,973 | $24,111 | $13,862 |
| 3.00-inch | $35,530 | $40,488 | $76,018 | $48,256 | $27,762 |
| 4.00-inch | $55,509 | $63,255 | $118,764 | $75,386 | $43,378 |
| 6.00-inch | $110,986 | $126,473 | $237,459 | $150,715 | $86,744 |
| 8.00-inch | $177,584 | $202,364 | $379,948 | $241,147 | $138,801 |

# 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."*

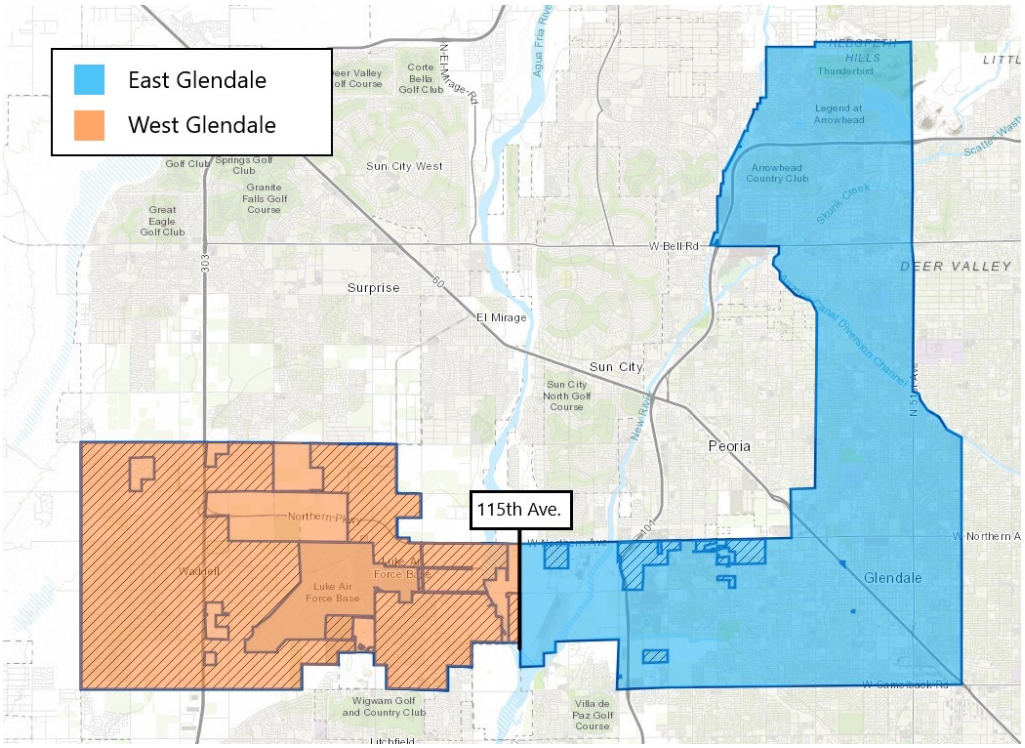
The Water Facilities IIP includes components for water supply, wells, water treatment, distribution lines, and the cost of preparing the Water Facilities IIP and related Development Fee Report. The cost recovery methodology is used to calculate the water supply component. The plan-based methodology is used for water supply, wells, distribution lines, 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 Water Facilities IIP and development fees will allocate the cost of necessary public services between both residential and nonresidential development using average day demand factors.

## Service Area

Since new development west of 115th Avenue will not connect to Glendale's water system, TischlerBise recommends using 115th Avenue as the border between the two service areas for water facilities development fees. **Glendale will only assess water facilities development fees to new development in East Glendale.**



## 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."*

Water development fees are assessed by meter size, and the analysis uses average day demand from existing single-family units of 335 gallons as the demand factor for a 0.75-inch meter. For meters larger than 0.75 inches, average day demand is calculated by multiplying average day demand from existing single-family units by the capacity ratio for the corresponding meter size.

**Figure W1: Water Ratio of Service Unit to Development Unit**

| Average Day Demand (Gallons) | |
|---|---|
| Single-Family Unit | 335 |

| Meter Size | Capacity Ratio[1] |
|---|---|
| 0.75-inch | 1.00 |
| 1.00-inch | 1.67 |
| 1.50-inch | 3.33 |
| 2.00-inch | 5.33 |
| 3.00-inch | 10.67 |
| 4.00-inch | 16.67 |
| 6.00-inch | 33.33 |
| 8.00-inch | 53.33 |

1. AWWA Manual of Water Supply Practices M-1, 7th Edition

## Analysis of Capacity, Usage, and Costs of Existing Public Services

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."*

### Existing Demand

Average day demand from Glendale water customers was 34,015,225 gallons in 2022. Residential customers represented 58 percent of average day demand, 93 percent of accounts, and consumed 335 gallons per day per account. Nonresidential customers represented 42 percent of average day demand, seven percent of accounts, and consumed 3,192 gallons per day per account.

**Figure W2: Existing Demand**

| Customer Type | Annual Gallons | Average Day Gallons | Accounts | Avg Day Gallons per Account |
|---|---|---|---|---|
| Residential | 7,216,400,000 | 19,770,959 | 59,005 | 335 |
| Nonresidential | 5,199,157,000 | 14,244,266 | 4,463 | 3,192 |
| Total | 12,415,557,000 | 34,015,225 | 63,468 | 536 |

Source: Glendale Water Services Department, 2022

## Projected Demand for Services and Costs

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)(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."*

## Projected Demand

Shown below, Figure W3 includes projections of water accounts and water demand. Projected residential accounts include all new single-family units in East Glendale. Projected nonresidential accounts include nonresidential development and multi-family development. Over the next 10 years, projections include an increase of 1,299 residential accounts and 2,801 nonresidential accounts.

To project future water demand, the analysis applies the average day gallons per account factors shown in Figure W2 to the projected accounts shown in Figure W3. Projected average day demand will increase by 435,000 gallons for residential development and 3,263,126 gallons for nonresidential development. As shown in Figure W3, projected water demand in East Glendale will increase by 3,698,126 gallons.

**Figure W3: Projected Demand**

| Year | | Average Day Gallons | Total Accounts | Annual Increase | | | |
|---|---|---|---|---|---|---|---|
| | | | | Residential | | Nonresidential | |
| | | | | Gallons | Accounts | Gallons | Accounts |
| | 2022 | 34,015,225 | 63,468 | | | | |
| Base | 2023 | 34,376,563 | 63,842 | 85,410 | 255 | 275,929 | 119 |
| 1 | 2024 | 34,822,067 | 64,468 | 85,410 | 255 | 360,094 | 370 |
| 2 | 2025 | 35,330,193 | 65,280 | 85,410 | 255 | 422,716 | 557 |
| 3 | 2026 | 35,691,364 | 65,640 | 42,057 | 126 | 319,114 | 235 |
| 4 | 2027 | 36,050,557 | 65,994 | 42,057 | 126 | 317,135 | 229 |
| 5 | 2028 | 36,409,749 | 66,349 | 42,057 | 126 | 317,135 | 229 |
| 6 | 2029 | 36,768,941 | 66,703 | 42,057 | 126 | 317,135 | 229 |
| 7 | 2030 | 37,128,133 | 67,057 | 42,057 | 126 | 317,135 | 229 |
| 8 | 2031 | 37,443,652 | 67,352 | 17,965 | 54 | 297,554 | 241 |
| 9 | 2032 | 37,759,171 | 67,647 | 17,965 | 54 | 297,554 | 241 |
| 10 | 2033 | 38,074,689 | 67,942 | 17,965 | 54 | 297,554 | 241 |
| 10-Year Increase | | 3,698,126 | 4,100 | 435,000 | 1,299 | 3,263,126 | 2,801 |

Note: Glendale classifies connections as either residential or commercial. Residential connections inclue 0.75-inch meters used for single-family units, and commercial connections include all nonresidential meters and multi-family meters larger than 0.75 inches. The model uses single-family units as a proxy for residential connections and nonresidential floor area as a proxy for nonresidential connections.

## Water Supply – Plan-Based

The City of Glendale plans to increase its water supply through a lease purchase of 1,100 acre-feet of water from the White Mountain Apache Tribe. The lease purchase will be used to meet demand from future development. As shown in Figure W4, the cost to acquire 983,000 gallons (1,100 acre-feet) is $8,000,000. After deducting existing development fee revenue collections of $4,459,473, the adjusted cost is $3,540,527. For water supply, the cost is $3.60 per gallon. Since the lease purchase will be used to meet additional demand from new development, and the additional 10-year demand of 3,698,126 gallons exceeds the added capacity of the lease purchase, Glendale will need to eliminate the water supply portion of the water facilities development fee in approximately 2026 unless additional water supply projects are identified in the next development fee update.

**Figure W4: Cost Factors**

| Water Supply | |
|---|---|
| White Mountain Apache Tribe 100-Yr Lease | $8,000,000 |
| - Development Fee Revenue Collections | ($4,459,473) |
| Adjusted Cost | $3,540,527 |
| ÷ Total Average Day Gallons | 983,000 |
| Cost per Gallon | $3.60 |

## Wells – Plan-Based

The City of Glendale plans to activate additional wells over the next 10 years to meet demand from future development. The cost to increase well capacity by 9,300,000 gallons per day is $30,000,000. Dividing the total cost by the total capacity yields a cost of $3.23 per gallon. With an estimated increase in daily water demand of 3,698,126 gallons, the 10-year revenue collections equal $11,944,947, or approximately 40 percent of the planned costs.

**Figure W5: Cost Factors**

| Wells | |
|---|---|
| New Site COG 50 and COG 51 | $14,000,000 |
| Future Well | $8,000,000 |
| Future Well | $8,000,000 |
| Total Cost | $30,000,000 |
| ÷ Total Capacity (Average Day Gallons) | 9,300,000 |
| Cost per Gallon | $3.23 |
| 10-Year Increase in Gallons | 3,698,126 |
| 10-Year Revenue Collections | $11,944,947 |

## Water Treatment – Cost Recovery

The City of Glendale operates four water treatment plants, and three of the treatment plants have outstanding debt. Since these three facilities have excess capacity to serve future development, Glendale will use development fees to repay a portion of the outstanding debt.

| Average Day Water Treatment Capacity (Gallons) | |
|---|---|
| Cholla Water Treatment Plant | 30,000,000 |
| Oasis Water Treatment Plant[1] | 25,000,000 |
| Pyramid Peak Water Treatment Plant | 30,000,000 |
| Total | 85,000,000 |

1. Includes a surface water treatment plant and a groundwater treatment plant

The City of Glendale spent $207,996,291 to provide 85,000,000 gallons of water treatment capacity, and the outstanding principal balance is $56,655,445. Dividing the total cost by the total capacity yields a cost of $2.45 per gallon. With an estimated increase in daily water demand of 3,698,126 gallons, the 10-year revenue collections equal $9,060,409, or approximately 16 percent of the remaining principal balance.

**Figure W6: Cost Factors**

| Water Treatment | |
|---|---|
| Cholla Water Treatment Plant | $77,560,000 |
| Oasis Water Treatment Plant | $82,625,598 |
| Pyramid Peak Water Treatment Plant | $47,810,693 |
| Total (Original Cost) | $207,996,291 |
| ÷ Total Capacity (Average Day Gallons) | 85,000,000 |
| Cost per Gallon | $2.45 |
| 10-Year Increase in Gallons | 3,698,126 |
| 10-Year Revenue Collections | $9,060,409 |

| Remaining Principal | |
|---|---|
| Cholla Water Treatment Plant | $20,381,567 |
| Oasis Water Treatment Plant | $27,701,764 |
| Pyramid Peak Water Treatment Plant | $8,572,114 |
| Total Remaining Principal | $56,655,445 |

## Distribution Lines – Plan-Based

The City of Glendale plans to spend $240,000 per year to oversize and/or extend water distribution lines to serve future development. Dividing the total cost of $2,400,000 by the 10-year demand increase of 3,698,126 gallons yields a cost of $0.65 per gallon.

**Figure W7: Cost Factors**

| Distribution Lines | |
|---|---|
| Distribution Line Annual Cost | $240,000 |
| 10-Year Total Cost | $2,400,000 |
| 10-Year Increase in Gallons | 3,698,126 |
| Cost per Gallon | $0.65 |

## Development Fee Report – Plan-Based

The cost to prepare the Water Facilities IIP and the related Development Fee Report totals $19,120. Glendale plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of water demand, the cost is $0.01 per gallon.

**Figure W8: IIP and Development Fee Report**

| Necessary Public Service | Cost | Proportionate Share | | Service Unit | 5-Year Change | Cost per Service Unit |
|---|---|---|---|---|---|---|
| Water Facilities | $19,120 | All Development | 100% | Gallons | 2,033,186 | $0.01 |
| Wastewater Facilities | $19,120 | All Development | 100% | Gallons | 887,051 | $0.02 |
| Total | $38,240 | | | | | |

## 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 includes a detailed explanation of the revenue credit/offset for water facilities development fees.

### Water Facilities Development Fees

The cost per service unit is $9.94 per gallon for water facilities development fees, and Glendale will assess water facilities development fees by meter size to new development in East Glendale. The base 0.75-inch meter is equivalent to a single-family unit, and a capacity ratio is used to convert the base meter fee proportionately for larger meters. The capacity ratios are calculated based on data published in *AWWA Manual of Water Supply Practices M-1, 7th Edition*.

Water facilities development fees are calculated by multiplying the cost per gallon by the average day gallons per EDU (single-family unit) and the associated capacity ratio. For example, the single-family fee of $3,330 is calculated using a cost per service unit of $9.94 per gallon, multiplied by 335 average day gallons, multiplied by a capacity ratio of 1.00. For a 1.00-inch meter, the fee of $5,561 is calculated using a cost per service unit of $9.94 per gallon, multiplied by 335 average day gallons, multiplied by a capacity ratio of 1.67.

**Figure W9: Water Facilities Development Fees**

| Fee Component | Cost per Gallon |
|---|---|
| Water Supply | $3.60 |
| Wells | $3.23 |
| Water Treatment | $2.45 |
| Distribution Lines | $0.65 |
| Development Fee Report | $0.01 |
| Total | $9.94 |

| Demand Indicator | |
|---|---|
| Residential Gallons per Day | 335 |

| Fees per Meter | | | | |
|---|---|---|---|---|
| Meter Size | Capacity Ratio[1] | Proposed Fees | Current Fees | Increase / (Decrease) |
| 0.75-inch | 1.00 | $3,330 | $2,923 | $407 |
| 1.00-inch | 1.67 | $5,561 | $4,878 | $683 |
| 1.50-inch | 3.33 | $11,089 | $9,722 | $1,367 |
| 2.00-inch | 5.33 | $17,748 | $15,558 | $2,190 |
| 3.00-inch | 10.67 | $35,530 | $31,139 | $4,391 |
| 4.00-inch | 16.67 | $55,509 | $48,647 | $6,862 |
| 6.00-inch | 33.33 | $110,986 | $97,259 | $13,727 |
| 8.00-inch | 53.33 | $177,584 | $155,617 | $21,967 |

1. AWWA Manual of Water Supply Practices M-1, 7th Edition

## Water 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 W10 is based on projected water accounts in Figure W3 and the updated water facilities development fees. For nonresidential development, the analysis uses a 1.00-inch meter. 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 equals $19,900,667 and projected expenditures equal $26,965,004. Based on the actual mix of meter sizes used by future nonresidential accounts, the projected development fee revenue shown below will change.

**Figure W10: Water Facilities Development Fees Revenue**

| Fee Component | Growth Share |
|---|---|
| Water Supply | $3,540,527 |
| Wells | $11,944,947 |
| Water Treatment | $9,060,409 |
| Distribution Lines | $2,400,000 |
| Development Fee Report | $19,120 |
| Total | $26,965,004 |

| | | Single-Family $3,330 per meter | Nonresidential $5,561 per meter |
|---|---|---|---|
| Year | | Accounts | Accounts |
| Base | 2023 | 59,260 | 4,582 |
| Year 1 | 2024 | 59,515 | 4,953 |
| Year 2 | 2025 | 59,770 | 5,510 |
| Year 3 | 2026 | 59,895 | 5,745 |
| Year 4 | 2027 | 60,021 | 5,973 |
| Year 5 | 2028 | 60,146 | 6,202 |
| Year 6 | 2029 | 60,272 | 6,431 |
| Year 7 | 2030 | 60,398 | 6,659 |
| Year 8 | 2031 | 60,451 | 6,901 |
| Year 9 | 2032 | 60,505 | 7,142 |
| Year 10 | 2033 | 60,558 | 7,383 |
| 10-Year Increase | | 1,299 | 2,801 |
| Projected Revenue | | $4,324,030 | $15,576,637 |

| Projected Fee Revenue | $19,900,667 |
|---|---|

# 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."*

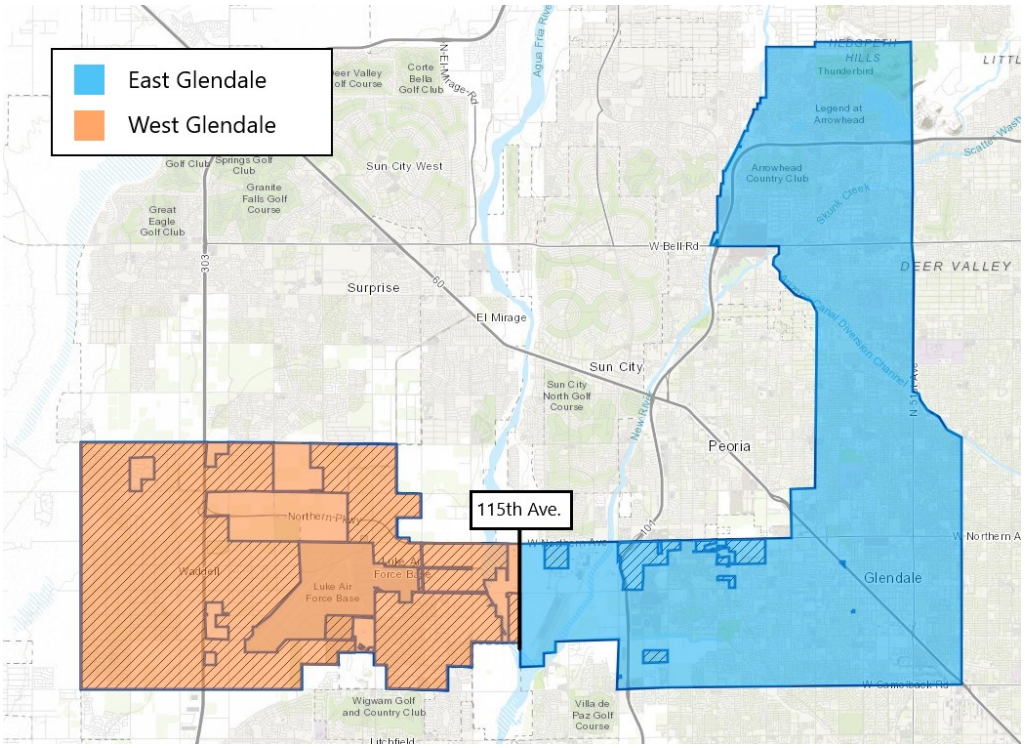
The Wastewater Facilities IIP includes components for wastewater treatment, lift station, collection lines, and the cost of preparing the Wastewater Facilities IIP and related Development Fee Report. The cost recovery methodology is used to calculate the wastewater treatment component. The plan-based methodology is used for lift station, collection lines, 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 Wastewater Facilities IIP and development fees will allocate the cost of necessary public services between both residential and nonresidential development using average day flow factors.

## Service Area

Since new development west of 115th Avenue will not connect to Glendale's wastewater system, TischlerBise recommends using 115th Avenue as the border between the two service areas for wastewater facilities development fees. **Glendale will only assess wastewater facilities development fees to new development in East Glendale.**



## 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 development fees are assessed by meter size, and the analysis uses average day flow from existing single-family units of 289 gallons as the demand factor for a 0.75-inch meter. For meters larger than 0.75 inches, average day flow is calculated by multiplying average day flow from existing single-family units by the capacity ratio for the corresponding meter size.

**Figure WW1: Wastewater Ratio of Service Unit to Development Unit**

| Average Day Flow (Gallons) | |
|---|---|
| Single-Family Unit | 289 |

| Meter Size | Capacity Ratio[1] |
|---|---|
| 0.75-inch | 1.00 |
| 1.00-inch | 1.67 |
| 1.50-inch | 3.33 |
| 2.00-inch | 5.33 |
| 3.00-inch | 10.67 |
| 4.00-inch | 16.67 |
| 6.00-inch | 33.33 |
| 8.00-inch | 53.33 |

1. AWWA Manual of Water Supply Practices M-1, 7th Edition

## Analysis of Capacity, Usage, and Costs of Existing Public Services

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."*

### Existing Flow

Average day flow from Glendale wastewater customers was 19,444,389 gallons in 2022. Residential customers represented 82 percent of average day flow, 94 percent of accounts, and generated 289 gallons per day per account. Nonresidential customers represented 18 percent of average day flow, six percent of accounts, and generated 958 gallons per day per account.

**Figure WW2: Existing Flow**

| Customer Type | Annual Gallons | Average Day Gallons | Accounts | Avg Day Gallons per Account |
|---|---|---|---|---|
| Residential | 5,854,163,000 | 16,038,803 | 55,548 | 289 |
| Nonresidential | 1,243,039,000 | 3,405,586 | 3,556 | 958 |
| Total | 7,097,202,000 | 19,444,389 | 59,104 | 329 |

Source: Glendale Water Services Department, 2022

## Projected Demand for Services and Costs

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)(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."*

## Projected Flow

Shown below, Figure WW3 includes projections of wastewater accounts and wastewater flow. Projected residential accounts include all new single-family units in East Glendale. Projected nonresidential accounts include nonresidential development and multi-family development. Over the next 10 years, projections include an increase of 1,299 residential accounts and 2,443 nonresidential accounts.

To project future wastewater flow, the analysis applies the average day gallons per account factors shown in Figure WW2 to the projected accounts shown in Figure WW3. Projected average day flow will increase by 375,269 gallons for residential development and 1,139,676 gallons for nonresidential development. As shown in Figure WW3, projected wastewater flow in East Glendale will increase by 1,514,944 gallons.

**Figure WW3: Projected Flow**

| Year | | Average Day Gallons | Total Accounts | Annual Increase | | | |
|---|---|---|---|---|---|---|---|
| | | | | Residential | | Nonresidential | |
| | | | | Gallons | Accounts | Gallons | Accounts |
| | 2022 | 19,444,389 | 59,104 | | | | |
| Base | 2023 | 19,586,753 | 59,444 | 73,682 | 255 | 68,682 | 85 |
| 1 | 2024 | 19,797,471 | 60,021 | 73,682 | 255 | 137,036 | 322 |
| 2 | 2025 | 20,059,047 | 60,774 | 73,682 | 255 | 187,894 | 498 |
| 3 | 2026 | 20,198,371 | 61,101 | 36,282 | 126 | 103,042 | 201 |
| 4 | 2027 | 20,336,088 | 61,422 | 36,282 | 126 | 101,435 | 196 |
| 5 | 2028 | 20,473,804 | 61,743 | 36,282 | 126 | 101,435 | 196 |
| 6 | 2029 | 20,611,521 | 62,065 | 36,282 | 126 | 101,435 | 196 |
| 7 | 2030 | 20,749,237 | 62,386 | 36,282 | 126 | 101,435 | 196 |
| 8 | 2031 | 20,866,724 | 62,653 | 15,498 | 54 | 101,989 | 213 |
| 9 | 2032 | 20,984,211 | 62,919 | 15,498 | 54 | 101,989 | 213 |
| 10 | 2033 | 21,101,697 | 63,186 | 15,498 | 54 | 101,989 | 213 |
| 10-Year Increase | | 1,514,944 | 3,742 | 375,269 | 1,299 | 1,139,676 | 2,443 |

Note: Glendale classifies connections as either residential or commercial. Residential connections inclue 0.75-inch meters used for single-family units, and commercial connections include all nonresidential meters and multi-family meters larger than 0.75 inches. The model uses single-family units as a proxy for residential connections and nonresidential floor area as a proxy for nonresidential connections.

## Wastewater Treatment – Cost Recovery

The City of Glendale operates three wastewater treatment plants, and these treatment plants have outstanding debt. Since these facilities have excess capacity to serve future development, Glendale will use development fees to repay a portion of the outstanding debt.

| Average Day Wastewater Treatment Capacity (Gallons) | |
|---|---|
| Arrowhead Water Reclamation Facility | 4,500,000 |
| West Area Water Reclamation Facility | 11,500,000 |
| 91st Ave Wastewater Treatment Plant | 13,200,000 |
| Total | 29,200,000 |

The City of Glendale spent $208,689,000 to provide 29,200,000 gallons of wastewater treatment capacity, and the outstanding principal balance is $39,797,500. Dividing the total cost by the total capacity yields a cost of $7.15 per gallon. With an estimated increase in daily wastewater flow of 1,514,944 gallons, the 10-year revenue collections equal $10,831,852, or approximately 27 percent of the remaining principal balance.

**Figure WW4: Cost Factors**

| Wastewater Treatment | |
|---|---|
| Arrowhead Water Reclamation Facility | $42,725,000 |
| West Area Water Reclamation Facility | $114,890,000 |
| 91st Ave Wastewater Treatment Plant | $51,074,000 |
| Total (Original Cost) | $208,689,000 |
| ÷ Total Capacity (Average Day Gallons) | 29,200,000 |
| Cost per Gallon | $7.15 |
| 10-Year Increase in Gallons | 1,514,944 |
| 10-Year Revenue Collections | $10,831,852 |

| Remaining Principal | |
|---|---|
| Arrowhead Water Reclamation Facility | $5,380,647 |
| West Area Water Reclamation Facility | $9,061,417 |
| 91st Ave Wastewater Treatment Plant | $25,355,436 |
| Total Remaining Principal | $39,797,500 |

## Lift Station – Plan-Based

The City of Glendale plans to expand an existing lift station within the next 10 years to serve future development. The cost to expand the lift station capacity by 3,348,000 gallons per day is $4,500,000. Dividing the expansion cost by the additional capacity yields a cost of $1.34 per gallon. With an estimated increase in daily wastewater flow of 1,514,944 gallons, the 10-year revenue collections equal $2,030,025, or approximately 45 percent of the planned costs.

**Figure WW5: Cost Factors**

| Lift Station | |
|---|---|
| Expand 67th Ave and ACDC Lift Station | $4,500,000 |
| ÷ Additional Capacity (Gallons) | 3,348,000 |
| Cost per Gallon | $1.34 |
| 10-Year Increase in Gallons | 1,514,944 |
| 10-Year Revenue Collections | $2,030,025 |

## Collection Lines – Plan-Based

The City of Glendale plans to spend $700,000 per year to oversize and/or extend wastewater collection lines to serve future development. Dividing the total cost of $7,000,000 by the 10-year flow increase of 1,514,944 gallons yields a cost of $4.62 per gallon.

**Figure WW6: Cost Factors**

| Collection Lines | |
|---|---|
| Collection Line Annual Cost | $700,000 |
| 10-Year Total Cost | $7,000,000 |
| 10-Year Increase in Gallons | 1,514,944 |
| Cost per Gallon | $4.62 |

## Development Fee Report – Plan-Based

The cost to prepare the Wastewater Facilities IIP and the related Development Fee Report totals $19,120. Glendale plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of wastewater flow, the cost is $0.02 per gallon.

**Figure WW7: IIP and Development Fee Report**

| Necessary Public Service | Cost | Proportionate Share | | Service Unit | 5-Year Change | Cost per Service Unit |
|---|---|---|---|---|---|---|
| Water Facilities | $19,120 | All Development | 100% | Gallons | 2,033,186 | $0.01 |
| Wastewater Facilities | $19,120 | All Development | 100% | Gallons | 887,051 | $0.02 |
| Total | $38,240 | | | | | |

## 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 includes a detailed explanation of the revenue credit/offset for wastewater facilities development fees.

### Wastewater Facilities Development Fees

The cost per service unit is $13.13 per gallon for wastewater facilities development fees, and Glendale will assess wastewater facilities development fees by meter size to new development in East Glendale. The base 0.75-inch meter is equivalent to a single-family unit, and a capacity ratio is used to convert the base meter fee proportionately for larger meters. The capacity ratios are calculated based on data published in *AWWA Manual of Water Supply Practices M-1, 7th Edition*.

Wastewater facilities development fees are calculated by multiplying the cost per gallon by the average day gallons per EDU (single-family unit) and the associated capacity ratio. For example, the single-family fee of $3,795 is calculated using a cost per service unit of $13.13 per gallon, multiplied by 289 average day gallons, multiplied by a capacity ratio of 1.00. For a 1.00-inch meter, the fee of $6,337 is calculated using a cost per service unit of $13.13 per gallon, multiplied by 289 average day gallons, multiplied by a capacity ratio of 1.67

**Figure WW8: Wastewater Facilities Development Fees**

| Fee Component | Cost per Gallon |
|---|---|
| Wastewater Treatment | $7.15 |
| Lift Station | $1.34 |
| Collection Lines | $4.62 |
| Development Fee Report | $0.02 |
| Total | $13.13 |

| Demand Indicator | |
|---|---|
| Residential Gallons per Day | 289 |

| Fees per Meter | | | | |
|---|---|---|---|---|
| Meter Size | Capacity Ratio[1] | Proposed Fees | Current Fees | Increase / (Decrease) |
| 0.75-inch | 1.00 | $3,795 | $1,609 | $2,186 |
| 1.00-inch | 1.67 | $6,337 | $2,684 | $3,653 |
| 1.50-inch | 3.33 | $12,636 | $5,346 | $7,290 |
| 2.00-inch | 5.33 | $20,225 | $8,553 | $11,672 |
| 3.00-inch | 10.67 | $40,488 | $17,117 | $23,371 |
| 4.00-inch | 16.67 | $63,255 | $26,739 | $36,516 |
| 6.00-inch | 33.33 | $126,473 | $53,456 | $73,017 |
| 8.00-inch | 53.33 | $202,364 | $85,530 | $116,834 |

1. AWWA Manual of Water Supply Practices M-1, 7th Edition

## WASTEWATER 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 WW9 is based on projected wastewater accounts in Figure WW3 and the updated wastewater facilities development fees. For nonresidential development, the analysis uses a 1.00-inch meter. 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 equals $20,410,109 and projected expenditures equal $19,880,998. Based on the actual mix of meter sizes used by future nonresidential accounts, the projected development fee revenue shown below will change.

**Figure WW9: Wastewater Facilities Development Fees Revenue**

| Fee Component | Growth Share |
|---|---|
| Wastewater Treatment | $10,831,852 |
| Lift Station | $2,030,025 |
| Collection Lines | $7,000,000 |
| Development Fee Report | $19,120 |
| Total | $19,880,998 |

| | | Single-Family $3,795 per meter | Nonresidential $6,337 per meter |
|---|---|---|---|
| Year | | Accounts | Accounts |
| Base | 2023 | 55,803 | 3,641 |
| Year 1 | 2024 | 56,058 | 3,963 |
| Year 2 | 2025 | 56,313 | 4,461 |
| Year 3 | 2026 | 56,438 | 4,662 |
| Year 4 | 2027 | 56,564 | 4,858 |
| Year 5 | 2028 | 56,689 | 5,054 |
| Year 6 | 2029 | 56,815 | 5,250 |
| Year 7 | 2030 | 56,941 | 5,445 |
| Year 8 | 2031 | 56,994 | 5,658 |
| Year 9 | 2032 | 57,048 | 5,871 |
| Year 10 | 2033 | 57,101 | 6,085 |
| 10-Year Increase | | 1,299 | 2,443 |
| Projected Revenue | | $4,927,836 | $15,482,272 |

| Projected Fee Revenue | $20,410,109 |
|---|---|

# 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."*

Glendale does not have a higher-than-normal construction excise tax rate; therefore, the required offset described above is not applicable. Shown in Figure A1 is the required forecast of non-development fee revenue from identified sources that can be attributed to future development over a period of five years. These funds are available for capital investments; however, the City of Glendale directs these revenues to non-development fee eligible capital needs including maintenance, repair, and replacement.

**Figure A1: Revenue Projections**

| Source | FY 23-24 | FY 24-25 | FY 25-26 | FY 26-27 | FY 27-28 |
|---|---|---|---|---|---|
| City Sales Tax | $174,018,883 | $175,241,091 | $177,675,643 | $180,935,746 | $184,395,530 |
| Property Tax | $6,329,445 | $6,392,739 | $6,456,667 | $6,521,233 | $6,586,446 |
| State Sales & Income Tax | $97,147,197 | $98,323,894 | $99,528,646 | $100,745,341 | $101,990,952 |
| Other Fees | $32,678,324 | $30,143,979 | $28,698,950 | $27,962,852 | $27,321,707 |
| Subtotal, General Fund | $310,173,849 | $310,101,703 | $312,359,906 | $316,165,172 | $320,294,635 |
| Water Revenue | $64,680,215 | $68,104,714 | $69,567,524 | $71,061,785 | $71,061,785 |
| Sewer Revenue | $44,430,807 | $45,761,079 | $46,446,169 | $47,141,535 | $47,376,801 |
| Subtotal, Utility | $109,111,022 | $113,865,793 | $116,013,693 | $118,203,320 | $118,438,586 |
| Total | $419,284,871 | $423,967,496 | $428,373,599 | $434,368,492 | $438,733,221 |

Source: FY23-24 Budget Book

## 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 Change | Cost per Service Unit |
|---|---|---|---|---|---|---|
| Water Facilities | $19,120 | All Development | 100% | Gallons | 2,033,186 | $0.01 |
| Wastewater Facilities | $19,120 | All Development | 100% | Gallons | 887,051 | $0.02 |
| Total | $38,240 | | | | | |

# APPENDIX C: LAND USE DEFINITIONS

## RESIDENTIAL DEVELOPMENT

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

**Single Family:**

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:**

1. Includes 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. 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. 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).

**Assisted Living:** Establishments primarily providing either routine general protective oversight, assistance with activities necessary for independent living to mentally or physically limited persons, or establishments providing care for persons who are unable to care for themselves. By way of example, assisted living includes assisted living facilities, nursing homes, rest homes, chronic care homes, and convalescent homes.

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

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

**Institutional:** Public and quasi-public buildings providing educational, social assistance, or religious services. By way of example, institutional includes schools, universities, churches, and public buildings

**Lodging:** Establishments providing sleeping accommodations that may include supporting facilities such as restaurants, cocktail lounges, meeting and banquet rooms or convention facilities, limited recreational facilities (pool, fitness room), and/or other retail and service shops. By way of example, lodging includes hotels, motels, resorts, and hostels.

**Office and Other Services:** Establishments providing management, administrative, professional, or business services; personal and health care services. By way of example, office and other services includes offices, health care, and business services.

# APPENDIX D: LAND USE ASSUMPTIONS

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 estimates and projections of residential and nonresidential development in this *Land Use Assumptions* document are for all areas within Glendale's city limits. The current demographic estimates and future development projections will be used in the Infrastructure Improvements Plan (IIP) and in the calculation of development fees. Current demographic data estimates for 2023 are used in calculating levels of service (LOS) provided to existing development in the City of Glendale. 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 Glendale Development Fee Report are population, housing units, employment, and nonresidential floor area projections. TischlerBise projects single-family housing units in East Glendale using 2020 – 2035 projections published by the Maricopa Association of Governments (MAG) and projects multi-family housing units in East Glendale using projections provided by projections provided by Glendale's Development Services Department. For housing units in West Glendale, TischlerBise uses projections provided by Glendale's Development Services Department. TischlerBise derives population estimates and projections by converting housing units to population using persons per housing unit factors. For nonresidential development in East Glendale, TischlerBise projects employment using 2020 – 2035 projections published by the Maricopa Association of Governments (MAG). Multiplying employment projections by employment density factors published by the Institute of Transportation Engineers (ITE) provides nonresidential floor area. For nonresidential development in West Glendale, TischlerBise uses projections provided by Glendale's Office of Economic Development. 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 summarized in Figure D10 are used to estimate development fee revenue and to indicate the anticipated need for growth-related infrastructure. 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, fee revenue will increase, but Glendale will also need to accelerate infrastructure improvements to keep pace with the actual rate of development.

During the next 10 years, residential development projections in East Glendale indicate a resident population increase of 14,399 persons in an additional 6,303 housing units, and nonresidential development projections in East Glendale indicate an employment increase of 14,859 jobs in approximately 5,976,000 square feet of floor area.

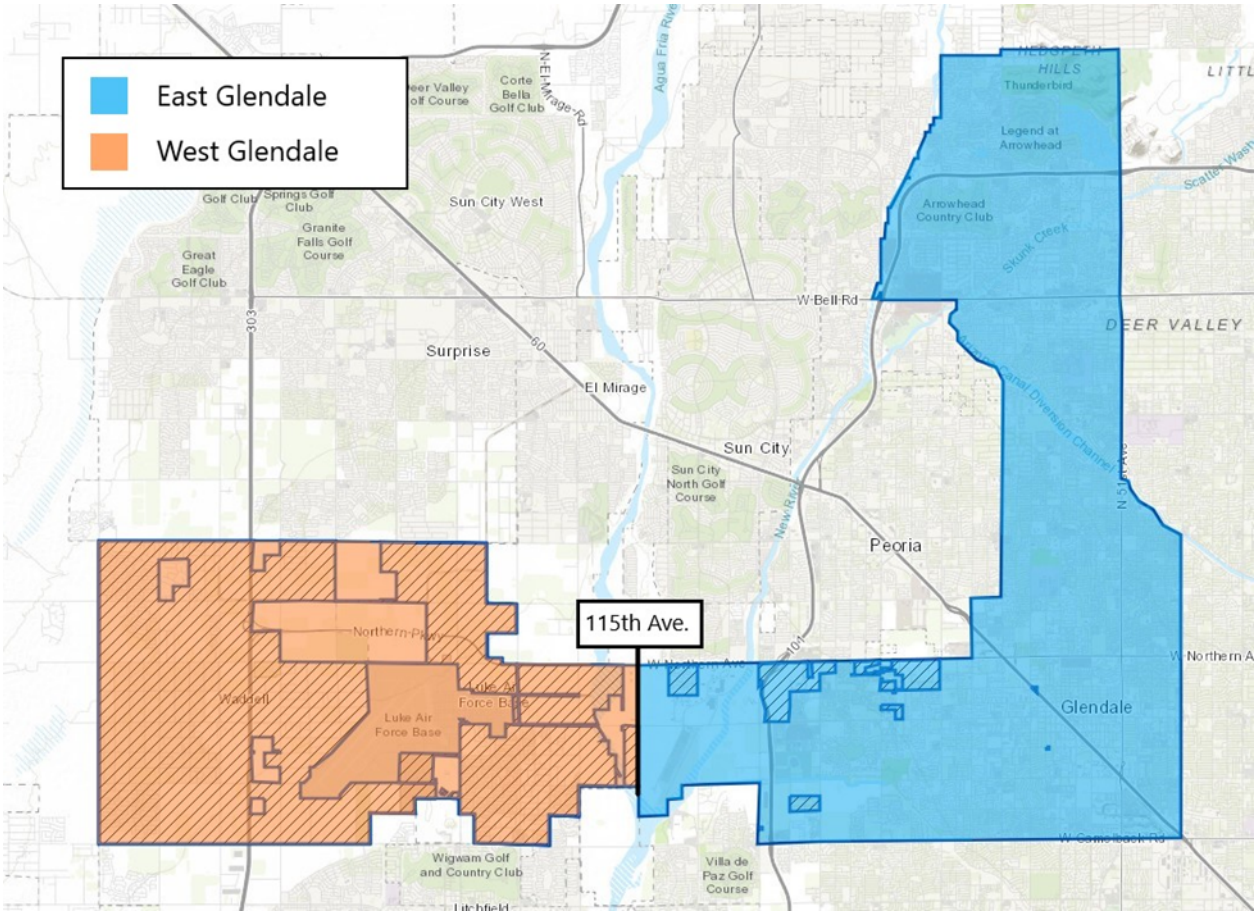
## SERVICE AREAS

ARS § 9-63.05 defines "service area" as follows:

> *"Any specified area within the boundaries of a municipality in which development will be served by necessary public services or facility expansions and within which a substantial nexus exists between the necessary public services or facility expansions and the development being served as prescribed in the infrastructure improvements plan."*

Since new development west of 115th Avenue will not connect to Glendale's water and sewer systems, TischlerBise recommends using 115th Avenue as the border between the two service areas for water and wastewater facilities development fees.

**Figure D1: Proposed Development Fee Service Areas**



## RESIDENTIAL DEVELOPMENT

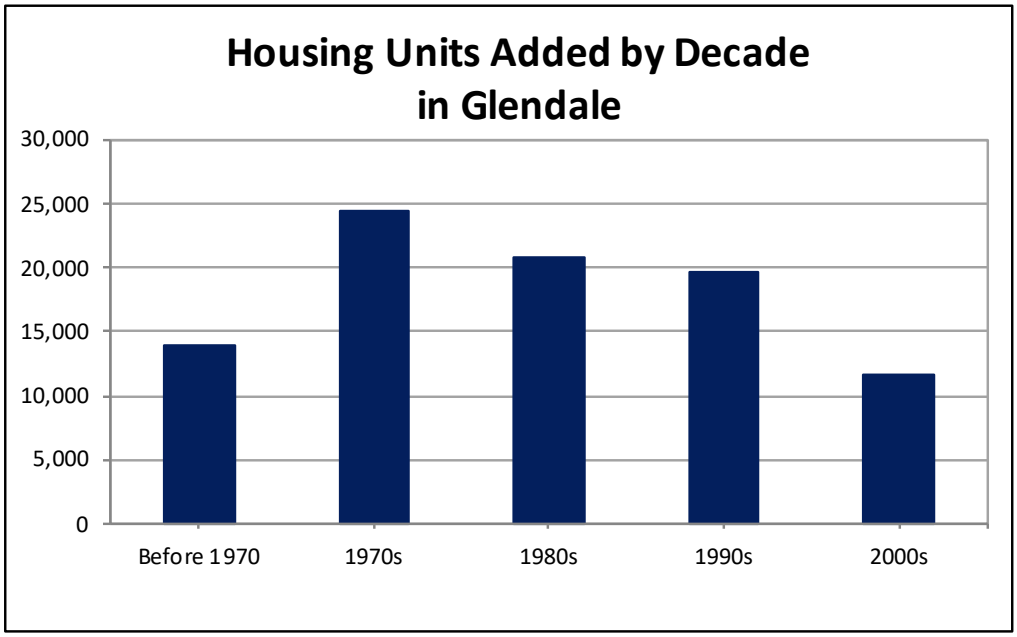
This section details current estimates and future projections of residential development.

### 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 D2 indicates the estimated number of housing units added by decade according to data obtained from the U.S. Census Bureau. In the previous decade, Glendale's housing stock grew by an average of 141 housing units per year.

**Figure D2: Housing Units by Decade**

| | | |
|---|---|---|
| Census 2010 Housing Units | 90,505 | Glendale's housing stock grew by an average of 141 housing units per year from 2010 to 2020. |
| Census 2020 Housing Units | 91,912 | |
| New Housing Units 2010 to 2020 | 1,407 | |




Source: U.S. Census Bureau, Census 2020 Summary File 1, Census 2010 Summary File 1, 2015-2019 5-Year American Community Survey (for 2000s and earlier, adjusted to yield total units in 2010).

## Persons per Housing Unit

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 Glendale be imposed according to the number of persons per housing unit.

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, which share a common sidewall, but are constructed on an individual parcel of land). For development fees in Glendale, detached units, attached units, and mobile home units are included in the "Single-Family" category. The "Multi-Family" category includes duplexes and all other structures with two or more units on an individual parcel of land.

Figure D3 below shows the occupancy estimates for Glendale based on 2015-2019 American Community Survey 5-Year Estimates. Single-family units averaged 3.15 persons per housing unit, and multi-family units averaged 2.06 persons per housing unit. The average occupancy for all housing units in Glendale was 2.85 persons per housing unit.

**Figure D3: Persons per Housing Unit**

| Housing Type | Persons | Households | Persons per Household | Housing Units | Persons per Housing Unit | Housing Mix | Vacancy Rate |
|---|---|---|---|---|---|---|---|
| Single-Family[1] | 199,345 | 59,391 | 3.36 | 63,368 | **3.15** | 72.7% | 6.28% |
| Multi-Family[2] | 49,016 | 21,674 | 2.26 | 23,820 | **2.06** | 27.3% | 9.01% |
| Total | 248,361 | 81,065 | 3.06 | 87,188 | **2.85** | 100.0% | 7.02% |

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates, Tables B25024, B25032, B25033.

1. Includes detached, attached (i.e. townhouses), and mobile home units.
2. Includes dwellings in structures with two or more units or a boat, RV, van, etc.

## Residential Estimates

### East Glendale

Based on estimates provided by Glendale's Development Services Department, there were 55,470 single-family units and 38,759 multi-family units in East Glendale in 2021. Based on units under construction in 2021 and TischlerBise estimates of housing units constructed in 2022, the 2023 base year estimate for East Glendale includes 57,051 single-family units and 39,879 multi-family units.

### West Glendale

TischlerBise estimates there are 873 single-family units and 1,844 multi-family units located in West Glendale in 2023. These units are located at Luke Air Force Base.

## Residential Projections

For this study, the analysis assumes the occupancy factors shown in Figure D3 will remain constant throughout the 10-year projection period. 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 projected, the demand for infrastructure will also decrease.

### East Glendale

To project single-family housing units in East Glendale from 2023 through 2033, TischlerBise uses MAG housing unit projections for 2020, 2025, 2030, and 2035. To project interim years, the five-year increase is distributed equally. For example, the average annual increase from 2020 to 2025 is 255 single-family units. Adding those 255 units to the 2023 estimate of 57,051 single-family units results in a 2024 estimate of 57,306 single-family units in East Glendale. Glendale's Development Services Department projects an additional 5,004 multi-family units over the next 10 years.

To convert housing units to population, occupancy factors shown in Figure D3 are applied to the housing unit projections shown in Figure D4. For example, the 10-year increase of 1,299 single-family units multiplied by 3.15 persons per housing unit equals 4,090 persons in new single-family units. Based on these assumptions, the 10-year projections for East Glendale include an increase of 14,399 persons and 6,303 housing units.

**Figure D4: Residential Development Projections – East Glendale**

| East Glendale | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2033 | 10-Year |
|---|---|---|---|---|---|---|---|---|
| | Base Year | 1 | 2 | 3 | 4 | 5 | 10 | Increase |
| **Resident Population** | | | | | | | | |
| Single Family | 181,749 | 182,552 | 183,355 | 183,751 | 184,146 | 184,542 | 185,840 | 4,090 |
| Multi-Family | 83,107 | 84,685 | 87,078 | 87,893 | 88,682 | 89,471 | 93,416 | 10,308 |
| **Total** | **264,857** | **267,238** | **270,434** | **271,644** | **272,828** | **274,013** | **279,255** | **14,399** |
| **Housing Units** | | | | | | | | |
| Single Family | 57,051 | 57,306 | 57,561 | 57,686 | 57,812 | 57,937 | 58,349 | 1,299 |
| Multi-Family | 39,879 | 40,645 | 41,807 | 42,202 | 42,585 | 42,968 | 44,883 | 5,004 |
| **Total** | **96,930** | **97,951** | **99,368** | **99,889** | **100,397** | **100,906** | **103,233** | **6,303** |

### West Glendale

Glendale's Development Services Department projects construction of 1,265 single-family units over the next 10 years and 96 multi-family units over the next two years. To convert housing units to population, occupancy factors shown in Figure D3 are applied to the housing unit projections shown at the bottom of Figure D5. For example, the 10-year increase of 1,265 single-family units multiplied by 3.15 persons per housing unit equals 3,983 persons in new single-family units. Based on these assumptions, the 10-year projections for West Glendale include an increase of 4,181 persons and 1,361 housing units. There is no expected increase in housing units at Luke Air Force Base.

**Figure D5: Residential Development Projections – West Glendale**

| West Glendale | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2033 | 10-Year |
|---|---|---|---|---|---|---|---|---|
| | Base Year | 1 | 2 | 3 | 4 | 5 | 10 | Increase |
| **Resident Population** | | | | | | | | |
| Single Family | 2,395 | 2,837 | 3,280 | 3,722 | 4,165 | 4,607 | 6,378 | 3,983 |
| Multi-Family | 1,654 | 1,753 | 1,852 | 1,852 | 1,852 | 1,852 | 1,852 | 198 |
| **Total** | **4,048** | **4,590** | **5,131** | **5,574** | **6,017** | **6,459** | **8,229** | **4,181** |
| **Housing Units** | | | | | | | | |
| Single Family | 873 | 1,013 | 1,154 | 1,294 | 1,435 | 1,575 | 2,137 | 1,265 |
| Multi-Family | 1,844 | 1,892 | 1,940 | 1,940 | 1,940 | 1,940 | 1,940 | 96 |
| **Total** | **2,717** | **2,905** | **3,094** | **3,234** | **3,375** | **3,515** | **4,077** | **1,361** |

## NONRESIDENTIAL DEVELOPMENT

This section details current estimates and future projections of nonresidential development including jobs and nonresidential floor area.

### Nonresidential Square Footage Estimates

TischlerBise uses the term jobs to refer to employment by place of work. In Figure D6, gray shading indicates the nonresidential development prototypes used by TischlerBise to derive employment densities. For nonresidential development, TischlerBise uses data published in Trip Generation, Institute of Transportation Engineers, 11th Edition (2021). The prototype for industrial development, Industrial Park (ITE 130), has 864 square feet of floor area per employee. Institutional development uses Government Office (ITE 730) and has 330 square feet of floor area per employee. For office & other services development, the proxy is General Office (ITE 710); it has 307 square feet of floor area per employee. The prototype for commercial development is Shopping Center (ITE 820), which has 471 square feet of floor area per employee.

**Figure D6: Nonresidential Demand Units**

| ITE Code | Land Use / Size | Demand Unit | Wkdy Trip Ends Per Dmd Unit[1] | Wkdy Trip Ends Per Employee[1] | Emp Per Dmd Unit | Sq Ft Per Emp |
|---|---|---|---|---|---|---|
| 110 | Light Industrial | 1,000 Sq Ft | 4.87 | 3.10 | 1.57 | 637 |
| 130 | Industrial Park | 1,000 Sq Ft | 3.37 | 2.91 | 1.16 | 864 |
| 140 | Manufacturing | 1,000 Sq Ft | 4.75 | 2.51 | 1.89 | 528 |
| 150 | Warehousing | 1,000 Sq Ft | 1.71 | 5.05 | 0.34 | 2,953 |
| 254 | Assisted Living | bed | 2.60 | 4.24 | 0.61 | na |
| 310 | Hotel | room | 7.99 | 14.34 | 0.56 | na |
| 520 | Elementary School | student | 2.27 | 22.50 | 0.10 | na |
| 525 | High School | student | 1.94 | 21.95 | 0.09 | na |
| 565 | Day Care | student | 4.09 | 21.38 | 0.19 | na |
| 610 | Hospital | 1,000 Sq Ft | 10.77 | 3.77 | 2.86 | 350 |
| 710 | General Office (avg size) | 1,000 Sq Ft | 10.84 | 3.33 | 3.26 | 307 |
| 720 | Medical-Dental Office | 1,000 Sq Ft | 36.00 | 8.71 | 4.13 | 242 |
| 730 | Government Office | 1,000 Sq Ft | 22.59 | 7.45 | 3.03 | 330 |
| 750 | Office Park | 1,000 Sq Ft | 11.07 | 3.54 | 3.13 | 320 |
| 770 | Business Park | 1,000 Sq Ft | 12.44 | 4.04 | 3.08 | 325 |
| 820 | Shopping Center (avg size) | 1,000 Sq Ft | 37.01 | 17.42 | 2.12 | 471 |

1. Trip Generation, Institute of Transportation Engineers, 11th Edition (2021).

## Nonresidential Estimates

Based on data published by Esri Business Analyst, the 2021 employment estimate includes 81,970 jobs. Converting jobs to nonresidential floor area using the square feet per employee multipliers shown in Figure D6, the 2021 floor area estimate includes 34,577,073 square feet.

**Figure D7: Nonresidential Estimates – 2021**

| Nonresidential Category | 2021 Jobs[1] | Percent of Total Jobs | Square Feet per Job[2] | 2021 Estimated Floor Area[3] | Jobs per 1,000 Sq. Ft.[2] |
|---|---|---|---|---|---|
| Industrial[4] | 8,531 | 10% | 864 | 7,370,784 | 1.16 |
| Commercial[5] | 26,221 | 32% | 471 | 12,350,091 | 2.12 |
| Office & Other Service[6] | 31,554 | 38% | 307 | 9,687,078 | 3.26 |
| Institutional[7] | 15,664 | 19% | 330 | 5,169,120 | 3.03 |
| Total | 81,970 | 100% | | 34,577,073 | |

1. Esri Business Analyst, 2021.
2. Trip Generation, Institute of Transportation Engineers, 11th Edition (2021).
3. TischlerBise calculation (2021 jobs X square feet per job).
4. Major sectors include Manufacturing, Wholesale Trade.
5. Major sectors include Retail Trade, Accommodation & Food Services.
6. Major sectors include Health Care, Other Services.
7. Major sectors include Public Administration, Educational Services.

## Nonresidential Projections

Employment and floor area 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 projected, the demand for infrastructure will also decrease.

### East Glendale

To project nonresidential development in East Glendale from the 2021 Esri estimate to the 2023 base year, and then through 2033, TischlerBise uses compound annual growth rates calculated from MAG employment projections for 2020 to 2025, 2025 to 2030, and 2030 to 2035. For 2020 to 2025, the compound annual growth rate is 2.4 percent for industrial, 1.0 percent for commercial, 2.7 percent for office and other services, and 1.2 percent for institutional. Applying these growth rates to the 2021 Esri estimates results in a 2023 base year estimate of 8,250 industrial jobs, 26,491 commercial jobs, 33,057 office and other services jobs, and 10,987 institutional jobs. For the 2023 base year, the East Glendale employment estimate includes 78,784 jobs. TischlerBise repeats this calculation to project employment from 2023 to 2033. Over the next 10 years, East Glendale employment growth includes 14,859 jobs.

To convert employment to floor area, employment multipliers shown in Figure D6 are applied to the employment projections shown in Figure D8. For example, the 10-year increase of 2,203 commercial jobs multiplied by 471 square feet per job equals approximately 1,038,000 square feet of commercial floor area. Based on these assumptions, the 10-year projections for East Glendale include an additional 5,976,000 square feet of nonresidential floor area.

**Figure D8: Nonresidential Development Projections – East Glendale**

| East Glendale | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2033 | 10-Year |
|---|---|---|---|---|---|---|---|---|
| | Base Year | 1 | 2 | 3 | 4 | 5 | 10 | Increase |
| **Employment** | | | | | | | | |
| Industrial | 8,250 | 8,448 | 8,646 | 8,855 | 9,064 | 9,272 | 10,097 | 1,848 |
| Commercial | 26,491 | 26,760 | 27,029 | 27,265 | 27,501 | 27,737 | 28,694 | 2,203 |
| Office & Other Services | 33,057 | 33,927 | 34,796 | 35,775 | 36,754 | 37,733 | 42,838 | 9,781 |
| Institutional | 10,987 | 11,113 | 11,239 | 11,319 | 11,398 | 11,478 | 12,015 | 1,028 |
| **Total** | **78,784** | **80,247** | **81,710** | **83,213** | **84,717** | **86,220** | **93,643** | **14,859** |
| **Nonres. Floor Area (x1,000)** | | | | | | | | |
| Industrial | 7,128 | 7,299 | 7,470 | 7,651 | 7,831 | 8,011 | 8,724 | 1,596 |
| Commercial | 12,477 | 12,604 | 12,731 | 12,842 | 12,953 | 13,064 | 13,515 | 1,038 |
| Office & Other Services | 10,149 | 10,416 | 10,682 | 10,983 | 11,283 | 11,584 | 13,151 | 3,003 |
| Institutional | 3,626 | 3,667 | 3,709 | 3,735 | 3,761 | 3,788 | 3,965 | 339 |
| **Total** | **33,379** | **33,986** | **34,592** | **35,210** | **35,829** | **36,447** | **39,355** | **5,976** |

## West Glendale

To project nonresidential development in West Glendale from the 2021 Esri estimate to the 2023 base year, and then through 2033, TischlerBise uses development projections provided by Glendale's Office of Economic Development. For 2021, Luke Air Force Base accounted for the majority of jobs and nonresidential floor area located in West Glendale. Adding industrial development completed or under construction in 2021 to the 2021 estimate provides a 2023 base year estimate of 16,515,000 square feet of nonresidential floor area in West Glendale.

Glendale's Office of Economic Development projects an additional 9,800,000 square feet of industrial development over the next five years and an additional 4,000,000 square feet of industrial development from 2028 to 2033. Glendale's Office of Economic Development projects an additional 90,000 square feet of commercial development over the next five years and an additional 40,000 square feet of commercial development from 2028 to 2033. Based on these assumptions, the 10-year projections for West Glendale include an additional 13,930,000 square feet of nonresidential floor area.

To convert floor area to employment, employment multipliers shown in Figure D6 are applied to the floor area projections shown in Figure D9. For example, the 10-year increase of 13,800,000 square feet of industrial development divided by 864 square feet per job equals approximately 15,972 industrial jobs. Over the next 10 years, West Glendale employment growth includes 16,248 jobs.

**Figure D9: Nonresidential Development Projections – West Glendale**

| West Glendale | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2033 | 10-Year |
|---|---|---|---|---|---|---|---|---|
| | Base Year | 1 | 2 | 3 | 4 | 5 | 10 | Increase |
| **Employment** | | | | | | | | |
| Industrial | 7,874 | 10,420 | 12,966 | 15,513 | 18,059 | 19,216 | 23,846 | 15,972 |
| Commercial | 310 | 353 | 395 | 438 | 480 | 502 | 586 | 276 |
| Office & Other Services | 236 | 236 | 236 | 236 | 236 | 236 | 236 | 0 |
| Institutional | 4,930 | 4,930 | 4,930 | 4,930 | 4,930 | 4,930 | 4,930 | 0 |
| **Total** | **13,350** | **15,939** | **18,528** | **21,116** | **23,705** | **24,884** | **29,598** | **16,248** |
| **Nonres. Floor Area (x1,000)** | | | | | | | | |
| Industrial | 16,515 | 18,715 | 20,915 | 23,115 | 25,315 | 26,315 | 30,315 | 13,800 |
| Commercial | 146 | 166 | 186 | 206 | 226 | 236 | 276 | 130 |
| Office & Other Services | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 0 |
| Institutional | 1,627 | 1,627 | 1,627 | 1,627 | 1,627 | 1,627 | 1,627 | 0 |
| **Total** | **18,361** | **20,581** | **22,801** | **25,021** | **27,241** | **28,251** | **32,291** | **13,930** |

## DEVELOPMENT PROJECTIONS

Provided below is a summary of development projections. 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 D10: Development Projections Summary – Total**

| Glendale, Arizona | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 10-Year Increase |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Base Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| **Resident Population** | | | | | | | | | | | | |
| Single Family | 184,144 | 185,390 | 186,635 | 187,473 | 188,311 | 189,149 | 189,987 | 190,825 | 191,437 | 192,048 | 192,217 | 8,073 |
| Multi-Family | 84,761 | 86,438 | 88,930 | 89,745 | 90,533 | 91,322 | 92,111 | 92,900 | 93,689 | 94,478 | 95,267 | 10,506 |
| **Total** | **268,905** | **271,828** | **275,565** | **277,218** | **278,845** | **280,472** | **282,099** | **283,726** | **285,126** | **286,527** | **287,485** | **18,579** |
| **Housing Units** | | | | | | | | | | | | |
| Single Family | 57,923 | 58,319 | 58,714 | 58,980 | 59,246 | 59,512 | 59,779 | 60,045 | 60,239 | 60,433 | 60,486 | 2,563 |
| Multi-Family | 41,723 | 42,537 | 43,747 | 44,142 | 44,525 | 44,908 | 45,291 | 45,674 | 46,057 | 46,440 | 46,823 | 5,100 |
| **Total** | **99,647** | **100,856** | **102,461** | **103,123** | **103,772** | **104,421** | **105,070** | **105,719** | **106,296** | **106,873** | **107,310** | **7,663** |
| **Employment** | | | | | | | | | | | | |
| Industrial | 16,123 | 18,868 | 21,612 | 24,367 | 27,122 | 28,489 | 29,855 | 31,221 | 32,514 | 33,807 | 33,943 | 17,820 |
| Commercial | 26,801 | 27,113 | 27,424 | 27,703 | 27,981 | 28,238 | 28,496 | 28,753 | 28,936 | 29,119 | 29,280 | 2,479 |
| Office & Other Services | 33,293 | 34,163 | 35,032 | 36,011 | 36,990 | 37,969 | 38,947 | 39,926 | 40,975 | 42,024 | 43,074 | 9,781 |
| Institutional | 15,917 | 16,043 | 16,169 | 16,249 | 16,328 | 16,408 | 16,488 | 16,567 | 16,693 | 16,819 | 16,945 | 1,028 |
| **Total** | **92,134** | **96,186** | **100,238** | **104,330** | **108,422** | **111,104** | **113,785** | **116,467** | **119,118** | **121,769** | **123,242** | **31,108** |
| **Nonres. Floor Area (x1,000)** | | | | | | | | | | | | |
| Industrial | 23,643 | 26,014 | 28,386 | 30,766 | 33,146 | 34,327 | 35,507 | 36,687 | 37,805 | 38,922 | 39,039 | 15,396 |
| Commercial | 12,623 | 12,770 | 12,917 | 13,048 | 13,179 | 13,300 | 13,421 | 13,543 | 13,629 | 13,715 | 13,791 | 1,168 |
| Office & Other Services | 10,221 | 10,488 | 10,755 | 11,055 | 11,356 | 11,656 | 11,957 | 12,257 | 12,579 | 12,902 | 13,224 | 3,003 |
| Institutional | 5,252 | 5,294 | 5,336 | 5,362 | 5,388 | 5,415 | 5,441 | 5,467 | 5,509 | 5,550 | 5,592 | 339 |
| **Total** | **51,740** | **54,566** | **57,393** | **60,231** | **63,070** | **64,698** | **66,326** | **67,954** | **69,522** | **71,089** | **71,646** | **19,906** |

## East Glendale

**Figure D11: Development Projections Summary – East Glendale**

| East Glendale | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 10-Year |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Base Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Increase |
| **Resident Population** | | | | | | | | | | | | |
| Single Family | 181,749 | 182,552 | 183,355 | 183,751 | 184,146 | 184,542 | 184,937 | 185,333 | 185,502 | 185,671 | 185,840 | 4,090 |
| Multi-Family | 83,107 | 84,685 | 87,078 | 87,893 | 88,682 | 89,471 | 90,260 | 91,049 | 91,838 | 92,627 | 93,416 | 10,308 |
| **Total** | **264,857** | **267,238** | **270,434** | **271,644** | **272,828** | **274,013** | **275,197** | **276,382** | **277,339** | **278,297** | **279,255** | **14,399** |
| **Housing Units** | | | | | | | | | | | | |
| Single Family | 57,051 | 57,306 | 57,561 | 57,686 | 57,812 | 57,937 | 58,063 | 58,189 | 58,242 | 58,296 | 58,349 | 1,299 |
| Multi-Family | 39,879 | 40,645 | 41,807 | 42,202 | 42,585 | 42,968 | 43,351 | 43,734 | 44,117 | 44,500 | 44,883 | 5,004 |
| **Total** | **96,930** | **97,951** | **99,368** | **99,889** | **100,397** | **100,906** | **101,414** | **101,923** | **102,360** | **102,796** | **103,233** | **6,303** |
| **Employment** | | | | | | | | | | | | |
| Industrial | 8,250 | 8,448 | 8,646 | 8,855 | 9,064 | 9,272 | 9,481 | 9,690 | 9,826 | 9,962 | 10,097 | 1,848 |
| Commercial | 26,491 | 26,760 | 27,029 | 27,265 | 27,501 | 27,737 | 27,973 | 28,209 | 28,370 | 28,532 | 28,694 | 2,203 |
| Office & Other Services | 33,057 | 33,927 | 34,796 | 35,775 | 36,754 | 37,733 | 38,711 | 39,690 | 40,739 | 41,788 | 42,838 | 9,781 |
| Institutional | 10,987 | 11,113 | 11,239 | 11,319 | 11,398 | 11,478 | 11,558 | 11,637 | 11,763 | 11,889 | 12,015 | 1,028 |
| **Total** | **78,784** | **80,247** | **81,710** | **83,213** | **84,717** | **86,220** | **87,723** | **89,226** | **90,699** | **92,171** | **93,643** | **14,859** |
| **Nonres. Floor Area (x1,000)** | | | | | | | | | | | | |
| Industrial | 7,128 | 7,299 | 7,470 | 7,651 | 7,831 | 8,011 | 8,192 | 8,372 | 8,489 | 8,607 | 8,724 | 1,596 |
| Commercial | 12,477 | 12,604 | 12,731 | 12,842 | 12,953 | 13,064 | 13,175 | 13,286 | 13,363 | 13,439 | 13,515 | 1,038 |
| Office & Other Services | 10,149 | 10,416 | 10,682 | 10,983 | 11,283 | 11,584 | 11,884 | 12,185 | 12,507 | 12,829 | 13,151 | 3,003 |
| Institutional | 3,626 | 3,667 | 3,709 | 3,735 | 3,761 | 3,788 | 3,814 | 3,840 | 3,882 | 3,923 | 3,965 | 339 |
| **Total** | **33,379** | **33,986** | **34,592** | **35,210** | **35,829** | **36,447** | **37,065** | **37,684** | **38,241** | **38,798** | **39,355** | **5,976** |

## West Glendale

**Figure D12: Development Projections Summary – West Glendale**

| West Glendale | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 10-Year |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Base Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Increase |
| **Resident Population** | | | | | | | | | | | | |
| Single Family | 2,395 | 2,837 | 3,280 | 3,722 | 4,165 | 4,607 | 5,050 | 5,493 | 5,935 | 6,378 | 6,378 | 3,983 |
| Multi-Family | 1,654 | 1,753 | 1,852 | 1,852 | 1,852 | 1,852 | 1,852 | 1,852 | 1,852 | 1,852 | 1,852 | 198 |
| **Total** | **4,048** | **4,590** | **5,131** | **5,574** | **6,017** | **6,459** | **6,902** | **7,344** | **7,787** | **8,229** | **8,229** | **4,181** |
| **Housing Units** | | | | | | | | | | | | |
| Single Family | 873 | 1,013 | 1,154 | 1,294 | 1,435 | 1,575 | 1,716 | 1,856 | 1,997 | 2,137 | 2,137 | 1,265 |
| Multi-Family | 1,844 | 1,892 | 1,940 | 1,940 | 1,940 | 1,940 | 1,940 | 1,940 | 1,940 | 1,940 | 1,940 | 96 |
| **Total** | **2,717** | **2,905** | **3,094** | **3,234** | **3,375** | **3,515** | **3,656** | **3,796** | **3,937** | **4,077** | **4,077** | **1,361** |
| **Employment** | | | | | | | | | | | | |
| Industrial | 7,874 | 10,420 | 12,966 | 15,513 | 18,059 | 19,216 | 20,374 | 21,531 | 22,688 | 23,846 | 23,846 | 15,972 |
| Commercial | 310 | 353 | 395 | 438 | 480 | 502 | 523 | 544 | 565 | 586 | 586 | 276 |
| Office & Other Services | 236 | 236 | 236 | 236 | 236 | 236 | 236 | 236 | 236 | 236 | 236 | 0 |
| Institutional | 4,930 | 4,930 | 4,930 | 4,930 | 4,930 | 4,930 | 4,930 | 4,930 | 4,930 | 4,930 | 4,930 | 0 |
| **Total** | **13,350** | **15,939** | **18,528** | **21,116** | **23,705** | **24,884** | **26,062** | **27,241** | **28,420** | **29,598** | **29,598** | **16,248** |
| **Nonres. Floor Area (x1,000)** | | | | | | | | | | | | |
| Industrial | 16,515 | 18,715 | 20,915 | 23,115 | 25,315 | 26,315 | 27,315 | 28,315 | 29,315 | 30,315 | 30,315 | 13,800 |
| Commercial | 146 | 166 | 186 | 206 | 226 | 236 | 246 | 256 | 266 | 276 | 276 | 130 |
| Office & Other Services | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 0 |
| Institutional | 1,627 | 1,627 | 1,627 | 1,627 | 1,627 | 1,627 | 1,627 | 1,627 | 1,627 | 1,627 | 1,627 | 0 |
| **Total** | **18,361** | **20,581** | **22,801** | **25,021** | **27,241** | **28,251** | **29,261** | **30,271** | **31,281** | **32,291** | **32,291** | **13,930** |