

DRAFT

Land Use Assumptions Infrastructure Improvements Plan and Development Fee Report

*Prepared for:
City of Apache Junction, Arizona*

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FISCAL | ECONOMIC | PLANNING

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EXECUTIVE SUMMARY

The City of Apache Junction hired TischlerBise to document land use assumptions, prepare an Infrastructure Improvements Plan (hereinafter referred to as the “IIP”), and update development fees pursuant to Arizona Revised Statutes (“ARS”) § 9-436.05 (hereinafter 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 IIPs for each type of infrastructure are located in each infrastructure type’s corresponding section, and the Land Use Assumptions can be found in Appendix A. The proposed development fees are displayed in the Development Fee Report chapter.

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 the City’s Infrastructure Improvements Plan and associated update to its development fees includes the following necessary public services:

- Parks and Recreational Facilities
- Library Facilities
- Police Facilities
- Street Facilities

This plan also 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, drainage, flood control, library, streets, fire and police, and neighborhood parks and recreation. Additionally, a necessary public service includes any facility, not included in the aforementioned categories (e.g., general government facilities), 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:

- 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.
- 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.
- 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.
- 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.
- 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.
- The projected demand for necessary public services or facility expansions required by new service units for a period not to exceed 10 years.
- 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 900 development fee studies over the past 40 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).

A summary is provided in Figure 1 showing the methodologies, components, and allocations used to calculate the IIP.

Figure 1: Recommended Calculation Methodologies

<i>Facility Type</i>	<i>Service Area</i>	<i>Incremental Expansion</i>	<i>Plan-Based</i>	<i>Cost Recovery</i>	<i>Cost Allocation</i>
<i>Library</i>	Citywide	N/A	Development Fee Study	Debt	Population, Jobs
<i>Parks and Recreational</i>	Citywide	Park Amenities, Trails	Development Fee Study	N/A	Population, Jobs
<i>Police</i>	Citywide	Facilities, Vehicles, Comm. Equipment	Development Fee Study	N/A	Population, Nonres. Trips
<i>Street</i>	Citywide	Arterials	Development Fee Study	N/A	VMT

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.

TischlerBise recommends a Citywide service area for all development fee categories.

CURRENT DEVELOPMENT FEES

Apache Junction’s current development fees area shown in Figure 2.

Figure 2: Current Development Fees

Residential (per unit)

<i>Unit Type</i>	<i>Library</i>	<i>Parks and Recreational</i>	<i>Police</i>	<i>Street</i>	<i>Current Fees</i>
Single Unit	\$934	\$1,466	\$161	\$2,364	\$4,925
Multifamily	\$748	\$1,174	\$129	\$1,856	\$3,907
Mobile Home/RV	\$654	\$1,027	\$113	\$1,895	\$3,689

Nonresidential (per square foot)

<i>Land Use Type</i>	<i>Library</i>	<i>Parks and Recreational</i>	<i>Police</i>	<i>Street</i>	<i>Current Fee</i>
Industrial	\$0.35	\$1.19	\$0.03	\$1.36	\$2.93
Commercial / Retail	\$0.30	\$1.03	\$0.15	\$5.04	\$6.52
Office & Other Services	\$0.50	\$1.71	\$0.05	\$2.18	\$4.44

PROPOSED DEVELOPMENT FEES

Proposed development fees for Apache Junction are shown in Figure 3. The change from the current fees is shown in light blue. Development fees for residential development are assessed per dwelling unit, based on the type of unit. Nonresidential development fees are assessed per square foot of floor area. Fees shown below represent the maximum allowable fees – development fees fund 100 percent of growth-related infrastructure.

Apache Junction 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 Apache Junction'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: Current versus Proposed Residential Development Fees

Residential (per unit)

<i>Unit Type</i>	<i>Library</i>	<i>Parks and Recreational</i>	<i>Police</i>	<i>Streets</i>	<i>Proposed Fee</i>	<i>Current Fee</i>	<i>Difference</i>
Single-Family*	\$1,004	\$1,168	\$609	\$3,151	\$5,932	\$4,925	\$1,007
Multi-Family	\$979	\$1,138	\$594	\$2,117	\$4,827	\$3,907	\$920
Boat, RV, Van, Etc.	\$760	\$883	\$461	\$2,117	\$4,220	\$3,689	\$531

*Includes mobile homes

Nonresidential (per square foot)

<i>Land Use Type</i>	<i>Library</i>	<i>Parks and Recreational</i>	<i>Police</i>	<i>Streets</i>	<i>Proposed Fee</i>	<i>Current Fee</i>	<i>Difference</i>
Industrial	\$0.12	\$0.03	\$0.27	\$1.19	\$1.61	\$2.93	(\$1.32)
Commercial / Retail	\$0.17	\$0.18	\$1.37	\$6.14	\$7.86	\$6.52	\$1.34
Office & Other Services	\$0.22	\$0.23	\$0.53	\$2.34	\$3.32	\$4.44	(\$1.12)

PARKS AND RECREATIONAL INFRASTRUCTURE IMPROVEMENT PLAN

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 park amenities, trail development and the cost of professional services for preparing the Parks and Recreational Facilities IIP and related Development Fee report. An incremental expansion methodology is used for the Parks and Recreational Facilities development fee, and a plan-based methodology is used for the Development Fee Report.

Service Area

The City of Apache Junction plans to provide a uniform level-of-service and equal access to parks and recreational facilities within the City limits. The parks and recreation programs are structured and provided to make full use of Apache Junction’s total inventory of facilities. Therefore, the recommended service area for the Parks and Recreational Facilities IIP is Citywide.

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. TischlerBise recommends daytime population as a reasonable indicator of the potential demand for Parks and Recreational Facilities from residential and nonresidential development. According to the U.S. Census Bureau web application OnTheMap, there were 6,362 inflow commuters in 2015, which is the number of persons who work in Apache Junction but live outside the City. 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. The estimated City population in 2015 from MAG is estimated at 38,583. The study uses 2015 data because this the most recent year available for inflow/outflow data. Therefore, it is compared to the population estimate for the corresponding year.

As shown in Figure PR1, the proportionate share is based on cumulative impact hours per year. Apache Junction were allocated 24 hours per day at 365 days per year, for a total of 8,760 impact hours per resident. Inflow commuters were allocated 8 hours per day, 4 days per week, and 50 weeks per year, for a total of 1,600 impact hours per nonresident. Multiplying the respective impact hours by the number of residents and inflow commuters (shown below in 1,000’s of hours) yields the total annual impact hours

for both residential and nonresidential categories. Residential's proportionate share of the total impact hours is 97%, while the nonresidential share is 3%.

Figure PR1: Daytime Population

Apache Junction Residents	Inflow Commuters	Cumulative Impact Hours per Year (in 1,000s)			Cost Allocation	
		Residential Hours	Nonresidential Hours	Total Hours	Residential	Nonresidential
38,583	6,362	337,987	10,179	348,166	97%	3%
Residential Hours per Year		8,760	365 days per year x 24 hours per day			
Nonresidential Hours per Year		1,600	4 days per week x 50 weeks per year x 8 hours per day			

Source: Apache Junction Residents from MAG Socioeconomic Projections, 2015. Inflow Commuters from U.S. Census Bureau's On The Map web application, 2015.

RATIO OF SERVICE UNITS 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 P2 displays the demand indicators for residential and nonresidential land uses. For residential development the table displays the persons per household for single-family (or single unit), multi-family units and other units (RV, etc.). For nonresidential development the table displays the number of employees per thousand square feet for four different types of nonresidential development.

Figure PR2: Parks and Recreational Facilities Ratio of Service Unit to Development Unit**Residential (per unit)**

Unit Type	Persons per Household¹
Single-Family	2.34
Multi-Family	2.28
Boat, RV, Van, Etc.	1.77

1. See Figure A1.

Nonresidential (per square foot)

Land Use Type	Jobs per 1,000 Sq Ft²
Industrial	1.63
Commercial / Retail	2.34
Office & Other Services	2.97

2. See Figure A5.

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.”

Park Land

The City currently has slightly over 100 acres of parkland serving a demand base of 40,287 persons and 7,802 jobs. The majority of this acreage is leased from the Bureau of Land Management, with a few parcels leased from the School District. At the time of this study the City has no firm plans to lease additional park land from the Bureau of Land Management. Therefore, a land component is not included in the IIP and Development Fee Study.

Park Amenities and Improvements – Incremental Expansion

The inventory of Apache Junction's park amenities and improvements is displayed in Figure PR3. Apache Junction parks have 103 amenities, which have a total replacement cost of about \$9.0 million. Dividing the total cost by the total number of improvements yields an average cost per improvement of \$87,573. The current residential level of service is 0.0025 amenities per person, which was obtained by multiplying the 103 amenities by the residential proportionate share (97%) and dividing this amount by the current population (40,287). Similarly, the nonresidential level of service is 0.0004 units per job. Multiplying the average cost per amenity (\$87,573) by the residential and nonresidential levels of service results in a cost per person of \$218.93 and \$35.03 per job.

Figure PR3: Park Amenities Inventory and LOS

<i>Description</i>	<i>Number of Units</i>	<i>Average Cost per Unit</i>	<i>Replacement Cost</i>
Ramadas (single)	3	\$12,500	\$37,500
Ramadas (small group)	14	\$25,000	\$350,000
Ramadas (large group)	8	\$35,000	\$280,000
Shuffleboard Courts	3	\$20,000	\$60,000
Horseshoe Pits	5	\$2,500	\$12,500
Playgrounds	4	\$150,000	\$600,000
Ball Fields	7	\$160,000	\$1,120,000
Concession/Restrooms	6	\$200,000	\$1,200,000
Tennis Courts	8	\$75,000	\$600,000
Pickle Ball Courts	4	\$75,000	\$300,000
Racquetball Courts	4	\$90,000	\$360,000
Basketball Courts	3	\$70,000	\$210,000
Volleyball Courts	4	\$8,000	\$32,000
Soccer/Football Fields	3	\$160,000	\$480,000
Skate Park	1	\$500,000	\$500,000
Security Fencing	25	\$26,400	\$660,000
Pool	1	\$2,218,000	\$2,218,000
Total	103	\$87,573	\$9,020,000

Level-of-Service (LOS) Standards

Amenities	103
2018 Population	40,287
2018 Jobs	7,802
Residential Share	97%
Nonresidential Share	3%

Amenities per Person	0.0025
Amenities per Job	0.0004

Cost Analysis

Cost per Amenity	\$87,573
LOS: Amenities per Person	0.0025
LOS: Amenities per Job	0.0004
Cost per Person	\$218.93
Cost per Job	\$35.03

Source: City of Apache Junction

Trail Development – Incremental Expansion

The inventory of Apache Junction's trail system is displayed in Figure PR4. Apache Junction has 160.7 miles of various trails. The current residential level of service is 0.0039 miles per person, which was obtained by

multiplying the 160.7 miles by the residential proportionate share (97%) and dividing this amount by the current population (40,287). Similarly, the nonresidential level of service is 0.0006 miles per job. According to information provided by J2 Engineering and Environmental Design, the firm who prepared the City's Active Transportation Plan, the average cost per linear foot for is \$13.20, or \$69,696 per mile (assumes an 8-foot wide stabilized decomposed granite trail section). Multiplying the average cost per mile of trail (\$69,696) by the residential and nonresidential levels of service results in a cost per person of \$271.81 and \$41.82 per job.

Figure PR4: Trail Inventory and LOS

<i>Description</i>	<i>Miles</i>
Unpaved Recreational Trails	85.8
Bike Routes	43.0
Bike Lanes	11.3
Equestrian Trails	18.6
Multi-Use Unpaved Trails	2.0
Total	160.7

Level-of-Service (LOS) Standards

Miles	160.7
2018 Population	40,287
2018 Jobs	7,802
Residential Share	97%
Nonresidential Share	3%

Miles per Person	0.0039
Miles Acres per Job	0.0006

Cost Analysis

Cost per Mile	\$69,696
LOS: Trail Miles per Person	0.0039
LOS: Trail Miles per Job	0.0006
Cost per Person	\$271.81
Cost per Job	\$41.82

Source: City of Apache Junction

Development Fee Report

The cost to prepare the Parks and Recreational Development Fees and IIP totals \$20,800. Apache Junction 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 per person is \$8.29 and the cost per job is \$0.39.

Figure PR5: Development Fee Report Cost Allocation

Necessary Public Service	Cost	Assessed Against	Proportionate Share	Demand Unit	2018	2023	Change	Cost per Demand Unit
Parks and Recreational	\$20,800	Residential	97%	Population	40,287	42,720	2,433	\$8.29
		Nonresidential	3%	Jobs	7,802	9,415	1,614	\$0.39

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.”

As shown in Figure PR6, the Land Use Assumptions projects an additional 5,933 persons and 3,676 jobs over the next 10 years.

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.”

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.”

These projected service units are multiplied by the current levels-of-service for the park amenities IIP components shown in Figure PR6. New development will demand an additional 16 park amenities.

The park improvements demanded by new development multiplied by the respective costs suggests the City will need to spend almost \$1.4 million on new park amenities to accommodate projected demand, as shown in the bottom of Figure PR6.

Figure PR6: Projected Demand for Park Amenities

<i>Type of Infrastructure</i>		<i>Level of Service</i>		<i>Demand Unit</i>	<i>Cost per Unit</i>
Park Amenities		0.0025 Units		Per Person	\$87,573
		0.0004 Units		Per Job	

<i>Need for Park Amenities</i>					
<i>Year</i>	<i>Population</i>	<i>Jobs</i>	<i>Residential Amenities</i>	<i>Nonresidential Amenities</i>	<i>Total Units</i>
Base 2018	40,287	7,802	101	3	99
Year 1 2019	40,543	7,990	101	3	105
Year 2 2020	40,800	8,178	102	3	105
Year 3 2021	41,440	8,590	104	3	107
Year 4 2022	42,080	9,003	105	4	109
Year 5 2023	42,720	9,415	107	4	111
Year 6 2024	43,360	9,828	108	4	112
Year 7 2025	44,000	10,240	110	4	114
Year 8 2026	44,740	10,653	112	4	116
Year 9 2027	45,480	11,066	114	4	118
Year 10 2028	46,220	11,478	116	5	120
10-Yr Increase	5,933	3,676	15	1	16

Growth-Related Expenditures =>	\$1,298,705	\$128,732	\$1,427,437
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Growth-Related Expenditure on Park Amenities	\$1,427,437
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In Figure PR7, the projected service units are multiplied by the current levels-of-service for the developed trails IIP components. New development will demand an additional 25.4 miles of developed trails.

The trail improvements demanded by new development multiplied by the respective costs suggests the City will need to spend approximately \$1.76 million on new trail development to accommodate projected demand.

Figure PR7: Projected Demand for Developed Trails

Type of Infrastructure		Level of Service		Demand Unit	Cost per Mile
Developed Trails		0.0039 Trail Miles		Per Person	\$69,696
		0.0006 Trail Miles		Per Job	

Need for Developed Trails						
	Year	Population	Jobs	Residential Miles	Nonresidential Miles	Total Miles
Base	2018	40,287	7,802	157	5	161.8
Year 1	2019	40,543	7,990	158	5	162.9
Year 2	2020	40,800	8,178	159	5	164.0
Year 3	2021	41,440	8,590	162	5	166.8
Year 4	2022	42,080	9,003	164	5	169.5
Year 5	2023	42,720	9,415	167	6	172.3
Year 6	2024	43,360	9,828	169	6	175.0
Year 7	2025	44,000	10,240	172	6	177.7
Year 8	2026	44,740	10,653	174	6	180.9
Year 9	2027	45,480	11,066	177	7	184.0
Year 10	2028	46,220	11,478	180	7	187.2
10-Yr Increase		5,933	3,676	23.1	2.2	25.4

Growth-Related Expenditures =>	\$1,612,765	\$154,028	\$1,766,793
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Growth-Related Expenditure on Developed Parks			\$1,766,793
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PARKS AND RECREATIONAL FACILITIES IIP

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.”

Potential Parks and Recreational Facilities that Apache Junction may use development fees for in order to accommodate new development over the next 10 years are shown in Figure PR8.

Figure PR8: Necessary Parks & Recreational Improvements and Expansions

Parks and Recreational Facilities Infrastructure Improvements Plan		
Improvement	Timeframe	Estimated Cost
Flatiron Park Ramada	2019-2028	\$40,000
Flatiron Park Walks/Pavement	2019-2028	\$100,000
Future Dog Park Development	2019-2028	\$700,000
Outdoor Pickleball/Tennis Courts	2019-2028	\$450,000
Sheep Drive Trail Development	2019-2028	\$883,750
Silly Mountain Park Expansion/Improvement	2019-2028	\$5,755,594
Total		\$7,929,344

PARKS AND RECREATIONAL FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is not necessary for the Parks and Recreational Facilities development fees because 10-year growth costs approximate the amount of revenue that is projected to be generated by development fees according to the Land Use Assumptions, as shown in Figure PR10.

Proposed Parks and Recreational Facilities Development Fees

Infrastructure standards and cost factors for Parks and Recreational Facilities and the professional services cost for the IIP and Development Fee Report are summarized at the top of Figure PR9. Updated development fees for Parks and Recreational Facilities are shown in the column with green shading, the current development fees are highlighted in light blue, and the net change is shown in far-right column.

Figure PR9: Proposed Parks and Recreational Facilities Development Fees

<i>Fee Component</i>	<i>Cost per Person</i>	<i>Cost per Job</i>
Park Amenities	\$218.93	\$35.03
Trails	\$271.81	\$41.82
Development Fee Study	\$8.29	\$0.39
Total	\$499.03	\$77.24

Residential (per unit)

<i>Unit Type</i>	<i>Persons per Household</i>	<i>Proposed Fees</i>	<i>Current Fee</i>	<i>Increase / Decrease</i>
Single-Family	2.34	\$1,168	\$1,466	(\$298)
Multi-Family	2.28	\$1,138	\$1,174	(\$36)
Boat, RV, Van, Etc.	1.77	\$883	\$1,027	(\$144)

Nonresidential (per Square Foot)

<i>Development Type</i>	<i>Jobs per 1,000 Sq Ft</i>	<i>Proposed Fees</i>	<i>Current Fee</i>	<i>Increase / Decrease</i>
Industrial	0.34	\$0.03	\$1.09	(\$1.06)
Commercial	2.34	\$0.18	\$1.03	(\$0.85)
Office / Institutional	2.97	\$0.23	\$1.71	(\$1.48)

FORECAST OF REVENUES

Appendix B contains the forecast of revenues required by Arizona's Enabling Legislation.

Parks and Recreational Facilities Development Fee Revenue

The top of Figure PR10 summarizes the growth-related cost of infrastructure in Apache Junction over the next 10 years (approximately \$3.2 million for Parks and Recreational Facilities). Apache Junction should receive approximately \$3.2 million in Parks and Recreational Facilities development fee revenue over the next 10 years, if actual development matches the Land Use Assumptions. This yields a minor surplus due to rounding of nonresidential projections.

Figure PR10: Projected Parks and Recreational Facilities Development Fee Revenue

	Growth Share
Developed Trails	\$1,766,793
Park Amenities	\$1,427,437
Development Fee Study	\$20,800
	\$3,215,030

Parks and Recreation Facilities Development Fee Revenue

		Single-Family \$1,168 per unit	Multi-Family \$1,138 per unit	Industrial \$0.03 per sq. ft.	Commercial \$0.18 per sq. ft.	Office / Inst \$0.23 per sq. ft.
<i>Year</i>		<i>Hsg Unit</i>	<i>Hsg Unit</i>	<i>KSF</i>	<i>KSF</i>	<i>KSF</i>
Base	2018	55,879	54,447	441	1,239	1,386
Year 1	2019	55,974	54,463	445	1,310	1,391
Year 2	2020	56,068	54,480	448	1,381	1,396
Year 3	2021	56,304	54,521	457	1,537	1,408
Year 4	2022	56,539	54,563	465	1,692	1,420
Year 5	2023	56,775	54,604	473	1,847	1,431
Year 6	2024	57,011	54,646	482	2,003	1,443
Year 7	2025	57,246	54,687	490	2,158	1,455
Year 8	2026	57,518	54,735	499	2,314	1,467
Year 9	2027	57,791	54,783	524	2,469	1,478
Year 10	2028	58,063	54,831	532	2,625	1,490
Ten-Year Increase		2,184	385	91	1,385	104
Projected Revenue		\$2,550,572	\$437,941	\$2,744	\$249,379	\$24,032
					Projected Development Fee Revenue	\$3,264,668

LIBRARY FACILITIES INFRASTRUCTURE IMPROVEMENT PLAN

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

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

The Libraries IIP includes components for library facilities, and the cost of professional services for preparing the Library Facilities IIP and related Development Fee Report. A cost-recovery methodology is used for library facilities, and a plan-based methodology is used for the Development Fee Report.

Service Area

The City of Apache Junction plans to provide a uniform LOS and equal access to Library Facilities within the City limits. Therefore, a citywide service area is recommended for the Library Facilities IIP.

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. TischlerBise recommends daytime population as a reasonable indicator of the potential demand for Library Facilities from residential and nonresidential development. According to the U.S. Census Bureau web application OnTheMap, there were 6,362 inflow commuters in 2015, which is the number of persons who work in Apache Junction but live outside the City. 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. The estimated City population in 2015 from MAG is estimated at 38,583. The study uses 2015 data because this the most recent year available for inflow/outflow data. Therefore, it is compared to the population estimate for the corresponding year.

As shown in Figure PR1, the proportionate share is based on cumulative impact hours per year. Apache Junction were allocated 24 hours per day at 365 days per year, for a total of 8,760 impact hours per resident. Inflow commuters were allocated 8 hours per day, 4 days per week, and 50 weeks per year, for a total of 1,600 impact hours per nonresident. Multiplying the respective impact hours by the number of residents and inflow commuters (shown below in 1,000's of hours) yields the total annual impact hours for both residential and nonresidential categories. Residential's proportionate share of the total impact hours is 97%, while the nonresidential share is 3%.

Figure L1: Daytime Population

Apache Junction Residents	Inflow Commuters	Cumulative Impact Hours per Year (in 1,000s)			Cost Allocation	
		Residential Hours	Nonresidential Hours	Total Hours	Residential	Nonresidential
38,583	6,362	337,987	10,179	348,166	97%	3%
Residential Hours per Year		8,760	365 days per year x 24 hours per day			
Nonresidential Hours per Year		1,600	4 days per week x 50 weeks per year x 8 hours per day			

Source: Apache Junction Residents from MAG Socioeconomic Projections, 2015. Inflow Commuters from U.S. Census Bureau's On The Map web application, 2015.

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 L2 displays the demand indicators for residential and nonresidential land uses. For residential development the table displays the persons per household for single-family (or single unit), multi-family units and other units (RV, etc.). For nonresidential development the table displays the number of employees per thousand square feet for three different types of nonresidential development.

Figure L2: Library Facilities Ratio of Service Unit to Development Unit

Residential (per unit)

Unit Type	Persons per Household ¹
Single-Family	2.34
Multi-Family	2.28
Boat, RV, Van, Etc.	1.77

1. See Figure A1.

Nonresidential (per square foot)

Land Use Type	Jobs per 1,000 Sq Ft ²
Industrial	1.63
Commercial / Retail	2.34
Office & Other Services	2.97

2. See Figure A5.

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.”

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.”

As shown in Figure L5, the Land Use Assumptions projects an additional 16,534 persons and 26,931 jobs over the next 10 years.

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 – Cost Recovery

The City completed an expansion of its Library in 2008. The current Apache Junction Library totals 31,444 square feet. As shown in Figure L3, the original Library was 20,949 square feet and served a combined total of 39,604 persons and jobs at a LOS of 0.529 square feet per service unit in 2006. This Library expansion was intended to provide excess capacity to serve new development in the future. As shown in Figure L3, the estimated level of service at the end of the bond term (2026) is .568 square feet per service unit, or 107% of the level of service prior to the expansion. For purposes of the Library Facilities IIP and related Development Fee Report, the level of service will be the level of service at the time of the end of the bond term (.568 square feet per service unit).

Figure L3: Library Level of Service Analysis

	Square Feet	Service Units (Pop and Jobs)	Service Units (Sq. Ft./Pop and Jobs)	
2006	20,949	39,604	0.529	
2018	31,444	48,088	0.654	124%
2026	31,444	55,393	0.568	107%

As mentioned above, the City debt-financed expansion of the Library to provide capacity for new development in the City. The cost recovery portion of the Library Facilities development fee will be used to cover new development's share of Library debt service payments. Future debt service for the City's Library expansion, as shown in Figure L4, is approximately \$2.13 million.

As shown in Figure L4, the total principal and interest on the City's bond for the Library expansion totals \$5,866,997. When this cost is spread over the estimated increase in service units (population and employment) over the 20-year bond term and is multiplied by the proportionate share factors discussed above, the cost per person is 425.97 and the cost per job is \$72.46.

Figure L4: Library Facilities Service Unit Cost Summary

Facility	Total Principal and Interest	Year of Final Debt Payment	Type of Development	Demand Unit	Proportionate Share	Service Unit Increase to 2006-2026
Apache Junction Library	\$5,866,997	2026	Residential	person	97%	13,360
			Nonresidential	job	3%	2,429

Cost Analysis

Cost per Person:	\$425.97
Cost per Job:	\$72.46

Development Fee Report – Plan Based

The cost to prepare the Library Facilities IIP and related Development Fee Report totals \$8,200. Apache Junction plans to update its report every five years. Based on this cost, proportionate share, and 5-year projections of new development from the Land Use Assumptions document, the cost per person is \$3.27 and the cost per job is \$0.15.

Figure L5: Development Fee Report Cost Allocation

Necessary Public Service	Cost	Assessed Against	Proportionate Share	Demand Unit	2018	2023	Change	Cost per Demand Unit
Library	\$8,200	Residential	97%	Population	40,287	42,720	2,433	\$3.27
		Nonresidential	3%	Jobs	7,802	9,415	1,614	\$0.15

LIBRARY FACILITIES IIP

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.”

As discussed above, the Library Facilities IIP and development fee uses a cost recovery approach. Debt service payments over the next eight years are shown in Figure L6 below.

Figure L6: Necessary Library Facilities Debt Payments

<i>Fiscal Year</i>	<i>Principal Payments</i>	<i>Interest</i>	<i>Total Payment</i>
2020-2021	\$220,000	\$86,938	\$306,938
2021-2022	\$230,000	\$75,938	\$305,938
2022-2023	\$240,000	\$64,438	\$304,438
2023-2024	\$250,000	\$52,438	\$302,438
2024-2025	\$265,000	\$41,500	\$306,500
2025-2026	\$275,000	\$28,250	\$303,250
2026-2027	\$290,000	\$14,500	\$304,500
Total	\$1,770,000	\$364,000	\$2,134,000

*City of Apache Junction

LIBRARY DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is not necessary for the Library development fees because the growth-related debt service costs are covered by the projected development fee revenue, thereby assuring that other revenue generated by new development will not go toward the debt service payments.

Proposed Library Development Fees

Infrastructure standards and cost factors for Library Facilities, including the professional services cost for the IIP and Development Fee Report, are summarized at the top of Figure L7. Updated development fees for Libraries are shown in the column with green shading, the current development fees are highlighted in light blue, and the net change is shown in far-right column.

Figure L7: Proposed Library Facilities Development Fees

<i>Fee Component</i>	<i>Cost per Person</i>	<i>Cost per Job</i>
Library Debt	\$425.97	\$72.46
Development Fee Study	\$3.27	\$0.15
Total	\$429.24	\$72.61

Residential (per unit)

<i>Unit Type</i>	<i>Persons per Household</i>	<i>Proposed Fee</i>	<i>Current Fee</i>	<i>Increase / Decrease</i>
Single-Family	2.34	\$1,004	\$934	\$70
Multi-Family	2.28	\$979	\$748	\$231
Boat, RV, Van, Etc.	1.77	\$760	\$654	\$106

Nonresidential (per square foot)

<i>Land Use Type</i>	<i>Jobs per 1,000 Sq Ft</i>	<i>Proposed Fee</i>	<i>Current Fee</i>	<i>Increase / Decrease</i>
Industrial	1.63	\$0.12	\$0.35	(\$0.23)
Commercial / Retail	2.34	\$0.17	\$0.30	(\$0.13)
Office & Other Services	2.97	\$0.22	\$0.50	(\$0.28)

FORECAST OF REVENUES

Appendix B contains the forecast of revenues required by Arizona's Enabling Legislation.

Library Development Fee Revenue

The top of Figure L8 summarizes the growth-related cost of infrastructure in Apache Junction over the next 10 years (\$2.1 million for library debt service). The cash flow is shown for an eight-year period, as the bond will be retired in 2026 and the development fee will be suspended, unless additional Library Facilities are identified. Apache Junction should receive approximately the same amount in revenue over the eight-year period, if actual development matches the Land Use Assumptions. This yields a minor net deficit of about \$6,000. Revenue is slightly higher than expenditures to the rounding of square footage of nonresidential development over the eight-year period.

Figure L8: Projected Library Development Fee Revenue

		<i>Within 10 Yrs</i>				
Library Debt		\$2,134,000				
Development Fee Study		\$8,200				
		\$2,142,200				
<i>Library Facilities Development Fee Revenue</i>						
		<i>Single-Family</i>	<i>Multi-Family</i>	<i>Industrial</i>	<i>Commercial</i>	<i>Office / Serv</i>
		\$1,004	\$979	\$0.12	\$0.17	\$0.22
		per unit	per unit	per sq. ft.	per sq. ft.	per sq. ft.
<i>Year</i>		<i>Hsg Unit</i>	<i>Hsg Unit</i>	<i>KSF</i>	<i>KSF</i>	<i>KSF</i>
Base	2018	55,879	54,447	441	1,239	1,386
Year 1	2019	55,974	54,463	445	1,310	1,391
Year 2	2020	56,068	54,480	448	1,381	1,396
Year 3	2021	56,304	54,521	457	1,537	1,408
Year 4	2022	56,539	54,563	465	1,692	1,420
Year 5	2023	56,775	54,604	473	1,847	1,431
Year 6	2024	57,011	54,646	482	2,003	1,443
Year 7	2025	57,246	54,687	490	2,158	1,455
Year 8	2026	57,518	54,735	499	2,314	1,467
Ten-Year Increase		1,639	289	58	1,075	81
Projected Revenue		\$1,646,255	\$282,680	\$6,954	\$182,671	\$17,829
Projected Development Fee Revenue						\$2,136,388

POLICE FACILITIES INFRASTRUCTURE IMPROVEMENT PLAN

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 and Development Fees includes components for police stations, police vehicles and equipment, and the cost of professional services for preparing the Police Facilities IIP and related Development Fee Report. An incremental expansion methodology is used for police facilities and vehicles & equipment, and a plan-based methodology is used for the Development Fee Report.

Service Area

The City of Apache Junction’s Police Department strives to provide a uniform response time citywide. Therefore, a citywide service area is recommended for the Police Facilities IIP.

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. TischlerBise recommends functional population to allocate the cost of police facilities to residential and nonresidential development. Functional population is similar to what the U.S. Census Bureau calls "daytime population," by accounting for people living and working in a jurisdiction, but also considers commuting patterns and time spent at home and at nonresidential locations. 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. OnTheMap data is used, as shown in Figure P1, to derive Functional Population shares for Apache Junction.

Residents that do not work are assigned 20 hours per day to residential development and 4 hours per day to nonresidential development (annualized averages). Residents that work in Apache Junction are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside Apache Junction are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2015 functional population data for Apache Junction, the cost allocation for residential development is 80 percent while nonresidential development accounts for 20 percent of the demand for municipal facilities.

Figure P1: Police Proportionate Share Factors

	<i>Demand Units in 2015</i>	<i>Demand Hours/Day</i>	<i>Person Hours</i>	<i>Proportionate Share</i>
Residential				
Estimated Residents	38,583			
Residents Not Working	24,290	20	485,800	
Employed Residents	14,293			
Employed in Service Area	1,362	14	19,068	
Employed outside Service Area	12,931	14	181,034	
<i>Residential Subtotal</i>			685,902	80%
Nonresidential				
Non-working Residents	24,290	4	97,160	
Jobs in Service Area	7,724			
Residents Employed in Service Area	1,362	10	13,620	
Non-Resident Workers (inflow Commuters)	6,362	10	63,620	
<i>Nonresidential Subtotal</i>			174,400	20%
TOTAL			860,302	100%

Source: Maricopa Association of Governments 2015 Population Estimate ; U.S. Census Bureau, OnTheMap 6.5 Application, 2015.

RATIO OF SERVICE UNITS TO DEVELOPMENT UNITS

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/retail, industrial, and office/other services.”

Figure P2 displays the ratio of service units to various types of land uses for residential and nonresidential development. The residential development table displays the persons per household for single-family (or single unit), multi-family units and other units (RV, etc.).

Nonresidential development fees are calculated using trips as the service unit. TischlerBise recommends using nonresidential vehicle trips as the best demand indicator for police facilities and vehicles. Trip generation rates are used for nonresidential development because vehicle trips are highest for commercial/retail developments, such as shopping centers, and lowest for industrial development. Office and institutional trip rates fall between the other two categories. This ranking of trip rates is consistent

with the relative demand for police from nonresidential development. Other possible nonresidential demand indicators, such as employment or floor area, will not accurately reflect the demand for service. For example, if employees per thousand square feet were used as the demand indicator, police development fees would be too high for office and institutional development because offices typically have more employees per 1,000 square feet than retail uses. If floor area were used as the demand indicator, police development fees would be too high for industrial development.

Trip generation rates are from the reference book Trip Generation published by the Institute of Transportation Engineers (ITE 10th Edition 2017). 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 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%.

For commercial development, the trip adjustment factor is less than 50% because retail development and some services 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, the ITE data indicates that 34% of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66% 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% multiplied by 50%, or approximately 33% of the vehicle trips. These factors are shown to derive inbound vehicle trips for each type of nonresidential land use.

Figure P2: Police Facilities Ratio of Service Unit to Development Unit

Residential (per unit)

<i>Unit Type</i>	<i>Persons per Household ¹</i>
Single-Family	2.34
Multi-Family	2.28
Boat, RV, Van, Etc.	1.77

1. See Figure A1.

Nonresidential (per square foot)

<i>Land Use Type</i>	<i>Veh Trips per 1,000 Sq Ft ²</i>
Industrial	4.96
Commercial / Retail	37.75
Office & Other Services	9.74

2. See Figure A5.

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

The Police Department operates out of a central station, totaling 15,989 square feet of floor area. The incremental expansion methodology is used to calculate the facility portion of the fee, with new development maintaining the current infrastructure standards.

As shown in Figure P3, the level of service for residential development is 0.3180 square feet per person, and the nonresidential level of service is 0.1370 square feet per vehicle trip end. This is determined by multiplying the total square footage by the proportionate share factors (80% for residential and 20% for nonresidential), and then dividing the respective totals by the current service units (40,287 persons for residential and 23,279 vehicle trips for nonresidential). The City estimates the replacement cost for this facility at \$400 per square foot. The levels of service are multiplied by the cost per square foot (\$400) to determine costs per service unit of \$127.20 per person and \$54.80 per vehicle trip end.

Figure P3: Police Facilities and LOS

<i>Description</i>	<i>Square Feet</i>
Police Station	15,989
Total	15,989

Level-of-Service (LOS) Standards

Existing Square Feet	15,989
2018 Population	40,287
2018 Nonresidential Vehicle Trips	23,279
Residential Share	80%
Nonresidential Share	20%

Square Feet per Person	0.318
Square Feet per 1,000 Nonres. Trips	0.137

Cost Analysis

Cost per Square Foot	\$400
LOS: Square Feet per Person	0.3180
LOS: Square Feet per Vehicle Trip	0.1370
Cost per Person	\$127.20
Cost per Vehicle Trip	\$54.80

Source: City of Apache Junction

Police Vehicles – Incremental Expansion

The inventory summary of Apache Junction’s police vehicles and equipment is displayed in Figure P4. The Apache Junction Police Department owns 59 vehicles, which have a total replacement cost of \$4.3 million. Dividing the total cost by the total number of units yields an average cost per unit of \$73,440. The current residential level of service is 0.0012 units per resident, which was obtained by multiplying the 59 units by the residential proportionate share (80%) and dividing this amount by the current population (40,287). Similarly, the nonresidential level of service is 0.0005 units per vehicle trip. Multiplying the average cost per unit (\$73,440) by the residential and nonresidential levels of service results in a cost per person of \$88.13 and \$36.72 per vehicle trip.

Figure P4: Police Vehicles and Equipment Inventory and LOS

<i>Description</i>	<i>Number of Units</i>	<i>Cost per Unit</i>	<i>Replacement Cost</i>
Marked Patrol Vehicles	26	\$53,342	\$2,690,119
Unmarked Patrol Vehicles	23	\$31,298	\$600,920
Detention Vans	2	\$51,238	\$173,846
Vans (Victim Services)	2	\$41,049	\$267,775
Motorcycles	4	\$32,184	\$176,255
Mobile Command Van	1	\$319,822	\$74,064
Bear Cat G3 Off-Road	1	\$350,000	\$350,000
Total	59	\$73,440	\$4,332,979

Level-of-Service (LOS) Standards

Existing Units	59
2018 Population	40,287
2018 Nonresidential Vehicle Trips	23,279
Residential Share	80%
Nonresidential Share	20%

LOS per Person	0.0012
LOS per Nonresidential Trip	0.0005

Cost Analysis

Cost per Vehicle	\$73,440
LOS: Vehicles per Person	0.0012
LOS: Vehicles per Vehicle Trip	0.0005
Cost per Person	\$88.13
Cost per Vehicle Trip	\$36.72

Source: City of Apache Junction

Communications Equipment – Incremental Expansion

The inventory summary of Apache Junction’s communications equipment is displayed in Figure P5. The Apache Junction Police Department owns 170 pieces of communications equipment with, which have a total replacement cost of approximately \$2 million. Dividing the total cost by the total number of units yields an average cost per unit of \$11,894. The current residential level of service is 0.0034 units per resident, which was obtained by multiplying the 170 units by the residential proportionate share (80%) and dividing this amount by the current population (40,287). Similarly, the nonresidential level of service is 0.0015 units per vehicle trip. Multiplying the average cost per unit (\$11,894) by the residential and nonresidential levels of service results in a cost per person of \$40.44 and \$17.84 per vehicle trip.

Figure P5: Police Communications Inventory and LOS

<i>Description</i>	<i>Number of Units</i>	<i>Cost per Unit</i>	<i>Replacement Cost</i>
Portable Radios	104	\$5,800	\$611,841
Mobile Radios	62	\$5,600	\$85,000
Dispatch Consoles	4	\$20,000	\$1,325,214
Total	170	\$11,894	\$2,022,055

Level-of-Service (LOS) Standards

Existing Units	170
2018 Population	40,287
2018 Nonresidential Vehicle Trips	23,279
Residential Share	80%
Nonresidential Share	20%
Units per Person	0.0034
Units per Nonres. Trip	0.0015

Cost Analysis

Cost per Unit	\$11,894
LOS: Vehicles per Person	0.0034
LOS: Vehicles per Vehicle Trip	0.0015
Cost per Person	\$40.44
Cost per Vehicle Trip	\$17.84

Source: City of Apache Junction

Development Fee Report

The cost to prepare the Police Facilities IIP and related Development Fee Report totals \$13,800. Apache Junction 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 per person is \$4.54 and the cost per nonresidential trip is \$0.23.

Figure P6: Development Fee Report Cost Allocation

<i>Necessary Public Service</i>	<i>Cost</i>	<i>Assessed Against</i>	<i>Proportionate Share</i>	<i>Demand Unit</i>	<i>2018</i>	<i>2023</i>	<i>Change</i>	<i>Cost per Demand Unit</i>
Police	\$13,800	Residential	80%	Population	40,287	42,720	2,433	\$4.54
		Nonresidential	20%	Nonres. Trips	114,771	126,708	11,937	\$0.23

PROJECTED SERVICE UNITS AND PROJECTED DEMAND FOR SERVICES AND IIP

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.”

The Land Use Assumptions projects an additional 5,933 persons and 17,953 nonresidential vehicle trips over the next 10 years, as shown in Figure P7.

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.”

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.”

As shown in Figure P7, this new development will demand approximately 4,346 square feet of police space. The 10-year total of the projected demand for new police space is multiplied by the cost per square foot to determine the total cost to accommodate the projected demand over the next 10 years. The projected demand for additional police facility floor space will cost approximately \$1.73 million in total.

Figure P7: Projected Demand for Police Facilities

<i>Type of Infrastructure</i>		<i>Level of Service</i>		<i>Demand Unit</i>	<i>Cost per Sq. Ft.</i>
Police Facilities		0.318 Square Feet		Per Person	\$400
		0.137 Square Feet		Per Nonres. Trip	

<i>Need for Police Facilities</i>					
<i>Year</i>	<i>Population</i>	<i>Nonres. Trips</i>	<i>Residential</i>	<i>Nonresidential</i>	<i>Total Square Feet</i>
Base 2018	40,287	23,279	12,811	3,189	16,001
Year 1 2019	40,543	24,198	12,893	3,315	16,208
Year 2 2020	40,800	25,117	12,974	3,441	16,415
Year 3 2021	41,440	27,131	13,178	3,717	16,895
Year 4 2022	42,080	29,146	13,381	3,993	17,374
Year 5 2023	42,720	31,160	13,585	4,269	17,854
Year 6 2024	43,360	33,175	13,789	4,545	18,333
Year 7 2025	44,000	35,189	13,992	4,821	18,813
Year 8 2026	44,740	37,204	14,227	5,097	19,324
Year 9 2027	45,480	39,218	14,463	5,373	19,836
Year 10 2028	46,220	41,233	14,698	5,649	20,347
10-Yr Increase	5,933	17,953	1,887	2,460	4,346

Growth-Related Expenditures =>	\$754,720	\$983,840	\$1,738,560
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Growth-Related Expenditure on Police Facilities	\$1,738,560
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As shown in Figure P8, new development will demand approximately 16 additional police vehicles. The 10-year total of the projected demand for new police vehicles is multiplied by the cost per vehicle to determine the total cost to accommodate the projected demand over the next 10 years. The projected demand for additional police vehicles will cost approximately \$1.18 million in total.

Figure P8: Projected Demand for Police Vehicles

	Type of Infrastructure	Level of Service		Demand Unit	Cost per Unit	
	Vehicles and Equipment	0.0012 Units		Per Person	\$73,440	
		0.0005 Units		Per Nonres. Trip		
Need for Police Vehicles and Equipment						
	Year	Population	Nonres. Trips	Residential	Nonresidential	Total Square Feet
Base	2018	40,287	23,279	48	12	60
Year 1	2019	40,543	24,198	49	12	61
Year 2	2020	40,800	25,117	49	13	62
Year 3	2021	41,440	27,131	50	14	63
Year 4	2022	42,080	29,146	51	15	65
Year 5	2023	42,720	31,160	51	16	67
Year 6	2024	43,360	33,175	52	17	69
Year 7	2025	44,000	35,189	53	18	70
Year 8	2026	44,740	37,204	54	19	72
Year 9	2027	45,480	39,218	55	20	74
Year 10	2028	46,220	41,233	55	21	76
10-Yr Increase		5,933	17,953	7	9	16
Growth-Related Expenditures =>				\$522,893	\$659,491	\$1,182,384
Growth-Related Expenditure on Police Vehicles and Equipment						\$1,182,384

As shown in Figure P9, new development will demand approximately 47 additional pieces of communications equipment. The 10-year total of the projected demand for new police communications equipment is multiplied by the cost per unit to determine the total cost to accommodate the projected demand over the next 10 years. The projected demand for additional police communications equipment will cost approximately \$560,000 in total.

Figure P9: Projected Demand for Police Communications Equipment

Type of Infrastructure		Level of Service		Demand Unit	Cost per Unit	
Communications Equipment		0.0034 Units		Per Person	\$11,894	
		0.0015 Units		Per Nonres. Trip		
Need for Police Communications Equipment						
Year	Population	Nonres. Trips	Residential	Nonresidential	Total Square Feet	
Base	2018	40,287	23,279	137	35	172
Year 1	2019	40,543	24,198	138	36	174
Year 2	2020	40,800	25,117	139	38	176
Year 3	2021	41,440	27,131	141	41	182
Year 4	2022	42,080	29,146	143	44	187
Year 5	2023	42,720	31,160	145	47	192
Year 6	2024	43,360	33,175	147	50	197
Year 7	2025	44,000	35,189	150	53	202
Year 8	2026	44,740	37,204	152	56	208
Year 9	2027	45,480	39,218	155	59	213
Year 10	2028	46,220	41,233	157	62	219
10-Yr Increase		5,933	17,953	20	27	47
Growth-Related Expenditures =>			\$240,021	\$320,305	\$560,326	
Growth-Related Expenditure on Police Comm. Equipment					\$560,326	

POLICE FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is not necessary for the Police Facilities development fees because 10-year growth costs approximate the amount of revenue that is projected to be generated by development fees according to the Land Use Assumptions, as shown in Figure P11.

Proposed Police Facilities Development Fees

The proposed Police Facilities development fees are shown in Figure P10. Cost factors for police facilities, vehicles and equipment, communications equipment and professional services are summarized at the top of the figure. The residential development fees are calculated by multiplying the \$260.31 cost per person by the service unit ratios (persons per household unit) for each housing type. Nonresidential development fees are calculated by multiplying the \$109.59 per vehicle trip by the average weekday vehicle trips per 1,000 square feet ratios and the trip adjustment factors for each development type. Proposed development fees for Police increased for all development types from the current fees.

Figure P10: Proposed Police Facilities Development Fees

<i>Fee Component</i>	<i>Cost per Person</i>	<i>Cost per Nonres. Trip</i>
Facilities	\$127.20	\$54.80
Vehicles and Equipment	\$88.13	\$36.72
Communications Equipment	\$40.44	\$17.84
Development Fee Study	\$4.54	\$0.23
Total	\$260.31	\$109.59

Residential (per unit)

<i>Unit Type</i>	<i>Persons per Household</i>	<i>Proposed Fee</i>	<i>Current Fee</i>	<i>Increase / Decrease</i>
Single-Family	2.34	\$609	\$161	\$448
Multi-Family	2.28	\$594	\$129	\$465
Boat, RV, Van, Etc.	1.77	\$461	\$113	\$348

Nonresidential (per square foot)

<i>Land Use Type</i>	<i>Avg Wkdy Veh Trip Ends</i>	<i>Trip Rate Adjustment</i>	<i>Proposed Fee</i>	<i>Current Fee</i>	<i>Increase / Decrease</i>
Industrial	4.96	50%	\$0.27	\$0.03	\$0.24
Commercial	37.75	33%	\$1.37	\$0.15	\$1.22
Office / Institutional	9.74	50%	\$0.53	\$0.05	\$0.48

FORECAST OF REVENUES

Appendix B contains the forecast of revenues required by Arizona's Enabling Legislation.

Development Fee Revenues for Police Facilities

Revenue projections shown below assume implementation of the proposed Police Facility development fees and that development over the next 10 years is consistent with the Land Use Assumptions. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the development fee revenue. As shown in Figure P11, the 10-year growth costs of police facilities, vehicles and communication total approximately \$3.5 million, and approximately \$3.5 million will be collected from development fees.

Figure P9: Projected Police Development Fee Revenue

	Growth Share
	Within 10 Yrs
Facilities	\$1,738,560
Vehicles and Equipment	\$1,182,384
Communications Equipment	\$560,326
Development Fee Study	\$13,800
	\$3,495,070

Police Facilities Development Fee Revenue

		Single-Family \$609 per unit	Multi-Family \$594 per unit	Industrial \$0.27 per sq. ft.	Commercial \$1.37 per sq. ft.	Office / Inst \$0.53 per sq. ft.
<i>Year</i>		<i>Hsg Unit</i>	<i>Hsg Unit</i>	<i>KSF</i>	<i>KSF</i>	<i>KSF</i>
Base	2018	55,879	54,447	441	1,239	1,386
Year 1	2019	55,974	54,463	445	1,310	1,391
Year 2	2020	56,068	54,480	448	1,381	1,396
Year 3	2021	56,304	54,521	457	1,537	1,408
Year 4	2022	56,539	54,563	465	1,692	1,420
Year 5	2023	56,775	54,604	473	1,847	1,431
Year 6	2024	57,011	54,646	482	2,003	1,443
Year 7	2025	57,246	54,687	490	2,158	1,455
Year 8	2026	57,518	54,735	499	2,314	1,467
Year 9	2027	57,791	54,783	524	2,469	1,478
Year 10	2028	58,063	54,831	532	2,625	1,490
Ten-Year Increase		2,184	385	91	1,385	104
Projected Revenue		\$1,330,152	\$228,402	\$24,700	\$1,898,050	\$55,378
Projected Development Fee Revenue						\$3,536,682

STREET FACILITIES INFRASTRUCTURE IMPROVEMENT PLAN

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 arterial street improvements and the cost of professional services for preparing the Street Facilities IIP and related Development Fee Report. An incremental expansion methodology is used for arterial street improvements, and a plan-based methodology is used for the Development Fee Report.

Service Area

The City of Apache Junction’s provides a uniform level of service for the street facilities network. Therefore, a citywide service area is recommended for the Street Facilities IIP.

METHODOLOGY

Street Facilities development fees use an incremental expansion methodology and allocate capital costs to residential and nonresidential development based on vehicle miles of travel using average weekday vehicle trips and average trip lengths. This methodology allows Apache Junction to maintain the current level of service standard as growth occurs. Development fee revenue collected using this methodology may not be used to replace or rehabilitate existing improvements.

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 length, trip generation rates and trip adjustment factors are used to determine the proportionate impact of residential, commercial, office, and industrial land uses on the City’s street network.

RATIO OF SERVICE UNITS TO LAND USE

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.”

Service Units

The appropriate service unit for the Street Facilities development fees is vehicle miles of travel (VMT). VMT creates the link between supply (roadway capacity) and demand (traffic generated by new development). Components used to determine VMT include trip generation rates, adjustments for

commuting patterns and pass-by trips, and trip length weighting factors, are discussed further in this section.

Figure S1: Summary of Service Units

Development Type	ITE Code	Weekday VTE	Dev Unit	Trip Adj	Adj Trip Rate	Local Trip Length
Single-Family	210	6.40	HU	64%	4.10	6.76
Multi-Family	220	4.30	HU	64%	2.75	6.76
Boat, RV, Van, Etc.	260	4.30	HU	64%	2.75	6.76
Industrial (KSF)	110	4.96	KSF	50%	2.48	4.22
Commercial / Retail (KSF)	820	37.75	KSF	33%	12.46	4.33
Office & Other (KSF)	710	9.74	KSF	50%	4.87	4.22

Trip Generation Rates

For nonresidential development, the trip generation rates are from the 10th edition of the reference book Trip Generation published by the Institute of Transportation Engineers (2017). A vehicle trip end represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). As an alternative to using the national average trip generation rate for residential development, the Institute of Transportation Engineers (ITE) publishes regression curve formulas that may be used to derive custom trip generation rates using local demographic data. This is explained in more detail in Appendix A: Land Use Assumptions.

Adjustments for Commuting Patterns and Pass-By Trips

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%. 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.

Residential development has a larger trip adjustment factor of 64% to account for commuters leaving Apache Junction for work. According to the 2009 National Household Travel Survey, weekday work trips are typically 31% of production trips (i.e., all out-bound trips, which are 50% of all trips). As shown in Figure S2, the Census Bureau's web application OnTheMap indicates that 90% of resident workers traveled outside the City for work in 2015. In combination, these factors ($0.31 \times 0.50 \times 0.90 = .14$) support the additional 14% allocation of trips to residential development.

Figure S2: Inflow/Outflow Analysis

Trip Adjustment Factor for Commuters¹	
Employed Residents	14,293
Residents Working in Apache Junction	1,362
Residents Working Outside Apache Junction (Commuters)	12,931
Percent Commuting out of Apache Junction	90%
Additional Production Trips²	
	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 96 percent of Apache Junction’s workers travel outside the city for work. In combination, these factors ($0.3099 \times 0.50 \times 0.96 = 0.14018$) 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"

For commercial development, the trip adjustment factor is less than 50% because retail development and some services 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, the ITE data indicates that 34% of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66% 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% multiplied by 50%, or approximately 33% of the trips. These factors are shown to derive inbound vehicle trips for each type of nonresidential land use.

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.”

As shown in Appendix C, the City of Apache Junction provided an inventory of arterial road segments, including segment lengths, lane quantities, and annual average daily traffic (AADT) counts. Multiplying each segment’s length by the number of lanes yields the number of lane miles per segment. The City’s arterial road network consists of 149 lane miles (the actual total is a few miles higher, but these are the

roads with traffic counts). By multiplying the traffic counts and segment lengths, the daily vehicle miles of travel (VMT) is obtained. The sum of each arterial road segment's VMT is 733,346.

Figure S3 documents the capacity of Apache Junction's arterial road network. Generally, the City's arterial streets operate at a Level of Service C, and the average number of lanes for arterials is roughly 4 lanes. The Maricopa Association of Governments' Regional Transportation Model (2017) suggests that a mile segment of a 4-lane arterial street with a Level of Service C should maintain a daily volume of 35,400 vehicles, or 8,850 vehicles per lane mile over a 24 hour period. This means that the total daily lane mile capacity of the City's arterial road network of 149 lane miles is approximately 1.32 million.

As noted above, current daily volume on Apache Junction's arterial network is approximately 733,346 VMT. The resulting VMC to VMT ratio is 1.80 (1.32 million VMC / 733,346 VMT). The baseline VMC/VMT ratio for any incremental expansion method is 1.0 (i.e., VMC=VMT), therefore the current ratio of 1.80 exceeds current LOS ensuring that new capacity built with development fee funds will be at or below current LOS.

Figure S3: Arterial Road Network Capacity and Usage

Total Vehicle Lane Miles	149
Capacity per Lane Mile (LOS C)*	8,850
Total Capacity (Vehicle Miles)	1,322,367
Existing Vehicle Miles of Travel	733,346
VMC/VMT Ratio	1.80

*Source: MAG Regional Transportation Model.

Cost per VMT

Figure S4 contains a list of potential transportation projects which Apache Junction may construct over the next 10 years. The total estimated cost of these projects was used to determine the weighted average cost per lane mile of \$1,003,561. This includes a credit of \$1.4 million for street development impact fees which were collected between 2013 and 2018 but have not yet been spent.

Figure S4: Potential Street Facilities Improvement Projects and Costs

Project	Location	Description	New Lanes	Distance	Lane Miles	Total Project Cost
Intersection Improvement	Meridian Drive/Baseline Avenue	New Traffic Signal	N/A	N/A	N/A	\$2,710,000
Baseline Avenue	Meridian Drive to Ironwood Drive	Widen to 4 Lanes	3	1	3.0	\$3,500,000
Meridian Drive	Broadway Avenue to Southern Avenue	Widen to 5 Lanes	3	1	3.0	\$3,500,000
Meridian Drive	Southern Avenue to Baseline Avenue	Widen to 5 Lanes	3	1	3.0	\$3,500,000
Baseline Avenue	Ironwood Drive - East Gldfield Road	Widen to 5 Lanes	3	3.25	9.8	\$9,250,000
Delaware Drive	Broadway Avenue to 16th Avenue	Widen to 3 Lanes	1	0.5	0.5	\$2,500,000
Southern Avenue	San Marcos to Idaho	Widen to 5 Lanes	3	0.5	1.5	\$2,500,000
Southern Avenue	Meridian Drive to Delaware Drive	Widen to 5 Lanes	3	0.5	1.5	\$2,500,000
Idaho Road	Apache Trail to Baseline Avenue	Widen to 6 lanes	2	1.25	2.5	\$5,600,000
Elliot Road	Meridian Drive to Idaho Road	Widen to 4 Lanes	4	1.5	6.0	\$6,000,000
Warner Road	Meridian Drive to Idaho Road	Widen to 4 Lanes	4	2	8.0	\$6,000,000
Ray Road	Meridian Drive to Idaho Road	Widen to 4 Lanes	4	2	8.0	\$6,000,000
Williams Field Road	Meridian Drive to Idaho Road	Widen to 4 Lanes	4	2	8.0	\$6,000,000
Idaho Road	Elliot Road to Frye Road	Widen to 4 Lanes	4	3.5	14.0	\$12,000,000
Meridian Drive	Frye Road to Baseline Avenue	Widen to 2 Lanes	2	5.5	11.0	\$8,000,000
Ironwood Road	Southern Avenue to Baseline Avenue	Widen to 6 lanes	2	1	2.0	\$4,000,000
Ironwood Road	Baseline Avenue to Frye Road	Widen to 6 lanes	4	5.5	22.0	\$22,000,000
Total					103.75	\$105,560,000
2018 DIF Balance						-\$1,440,545
Total Cost						\$104,119,455
Lane Miles						103.75
Cost per Lane Mile						\$1,003,561

A cost per vehicle mile of capacity (VMC) is calculated based on the average cost per lane mile of \$1,003,561 and the average lane capacity of 8,850 average daily vehicle trips (per 1 lane mile). This results in a \$113.40 cost per VMC. The incremental expansion methodology assumes the ratio of VMC to VMT is 1, therefore the cost per VMT is also \$113.40.

Figure S5: Cost per VMT Factors

Cost per Lane Mile	\$1,003,561
Vehicle Miles of Capacity per Lane Mile	8,850
Cost per VMC	\$113.40

Vehicle Trips

Figure S6 shows the calculation of vehicle trips generated by existing development. When the average weekday VTE and Trip Adjustment percentages (shown in Figure S1) are multiplied by the development unit quantities for Apache Junction from the Land Use Assumption in Appendix A (housing units and nonresidential KSF), the total number of vehicle trips generated by existing development is determined. As shown in Figure S6, this totals 116,986 adjusted vehicle trips.

Figure S6: Vehicle Trips

Development Type	ITE Code	Weekday VTE	Dev Unit	Trip Adj	2018 Dev Units
Single-Family*	210	6.40	HU	64%	85,303
Multi-Family	220	4.30	HU	64%	6,572
Boat, RV, Van, Etc.	260	4.30	HU	64%	1,833
Industrial (KSF)	110	4.96	KSF	50%	1,093
Commercial / Retail (KSF)	820	37.75	KSF	33%	15,439
Office & Other (KSF)	710	9.74	KSF	50%	6,748
Total Adjusted Vehicle Trips					116,986

*Includes mobile homes

Average Trip Length

For the incremental expansion methodology, it is necessary to determine the average trip length on the City's arterial network. To do this, national trip generation rates and average trip lengths from the 2017 *National Household Travel Survey* are used to determine *expected* VMT on the City's transportation network.

Figure S7 shows average trip lengths from the *National Household Travel Survey (2017)*.¹

Figure S7: National Average Trip Lengths

Land Use	National Average Trip Length (miles)
Residential	12.32
Industrial	7.70
Commercial/Retail	7.90
Institutional	7.70
Office and Other	7.70

* U.S. Department of Transportation, Federal Highway Administration, 2017 National Household Transportation Survey, adjusted for land use

The national average trip length needs to be adjusted to reflect actual local demand on the City's arterial network. To do this, TischlerBise first determines expected demand (VMT) on the City's complete transportation network using the above national travel demand characteristics.

Average daily trips from existing development in each land use category are multiplied by the applicable average trip lengths.

¹ U.S. Department of Transportation, Federal Highway Administration, 2017 National Household Travel Survey. URL: <http://nhts.ornl.gov>

Figure S8. Expected VMT in the City of Apache Junction

Land Use	ADT	National Avg Trip Length (miles)	Expected VMT
Single-Family*	85,303	12.32	1,050,927
Multi-Family	6,572	12.32	80,965
Boat, RV, Van, Etc.	1,833	12.32	22,580
Industrial	1,093	7.70	8,415
Commercial/Retail	15,439	7.90	121,965
Office & Other	6,748	7.70	51,957
Total			1,336,811

*Includes mobile homes

Because expected VMT reflects anticipated travel demand from City development on the entire roadway system, it is therefore higher than actual VMT on the arterial system in the City. To calibrate demand on the arterial system, expected travel demand is compared to actual VMT (see Appendix C). The ratio between actual and expected VMT provides a local adjustment factor that can be applied to national average trip lengths by type of land use. The local adjustment factor is shown in Figure S9.

Figure S9. Local Trip Length Adjustment Factor

Actual Local VMT on Arterials*	733,346
Expected Local VMT^	1,336,811
Actual to Expected VMT	0.549

* City of Apache Junction

^ TischlerBise analysis

As shown in Figure S10, the national average trips lengths are adjusted to reflect local conditions.

Figure S10. Local Average Trip Lengths by Land Use

	National Avg Trip Length (miles)	Local Adj. Factor	Local Trip Length
Residential	12.32	0.549	6.76
Industrial	7.70	0.549	4.22
Commercial/Retail	7.90	0.549	4.33
Institutional	7.70	0.549	4.22
Office and Other	7.70	0.549	4.22

Sources: National trip length from 2017 NHTS and TischlerBise; local adjustment from Figure S9.

Using the above factors, VMT per service unit is calculated, shown below in Figure S11.

Figure S11. VMT per Service Unit on Arterial Network

Development Type	ITE Code	Weekday VTE	Trip Adj	Adj Trip Rate	Local Trip Length	VMT per Service Unit
Single-Family*	210	6.40	64%	4.10	6.76	27.68
Multi-Family	220	4.30	64%	2.75	6.76	18.60
Boat, RV, Van, Etc.	260	4.30	64%	2.75	6.76	18.60
Industrial (KSF)	110	4.96	50%	2.48	4.22	10.48
Commercial / Retail (KSF)	820	37.75	33%	12.46	4.33	53.99
Office & Other (KSF)	710	9.74	50%	4.87	4.22	20.57

*Includes mobile homes

SERVICE UNITS, DEMAND, AND COST FOR 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.”

TischlerBise created an aggregate travel model to convert development units within Apache Junction to vehicle trips and vehicle miles of travel. This includes the factors discussed above, as well as average trip length, and is shown in Figure S12.

Travel Demand Model

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 development in Apache Junction over the next 10 years, and the corresponding need for additional lane miles is shown in Figure S12. Trip generation rates and trip adjustment factors convert project development into average weekday vehicle trips. New development in Apache Junction will generate 27,957 trips.

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 above (Figure S11) are used to derive level of service in Vehicle Miles of Travel and future needs of lane miles. A Vehicle Mile of Travel (VMT) is a measurement unit equal to one vehicle traveling one mile. As shown in Figure S12, based on the increase in vehicle miles of travel (145,338), the City of Apache Junction would need to construct an additional 16.4 lane miles of arterials to accommodate projected development over the next 10 years.

Figure S12: Projected Travel Demand Model

		2018	2019	2020	2021	2022	2023	2028	10-Year Increase
		Base	1	2	3	4	5	10	
Development	Single-Family	20,826	20,920	21,015	21,250	21,486	21,721	23,010	2,184
	Multi-Family	2,388	2,405	2,421	2,463	2,504	2,546	2,773	385
	Boat, RV, Van, Etc.	666	666	666	666	666	666	666	0
	Industrial KSF	441	445	448	457	465	473	515	75
	Commercial / Retail (KSF)	1,239	1,310	1,381	1,537	1,692	1,847	2,625	1,385
Average Weekday Vehicle Trips	Office & Other (KSF)	1,386	1,391	1,396	1,408	1,420	1,431	1,490	104
	Single Unit Res Trips	85,303	85,689	86,076	87,041	88,006	88,971	94,247	8,944
	Multifamily Unit Res Trips	6,572	6,618	6,663	6,778	6,892	7,006	7,631	1,059
	Mobile Home/RV Res Trips	1,833	1,833	1,833	1,833	1,833	1,833	1,833	0
	Industrial Trips	1,093	1,102	1,112	1,133	1,153	1,174	1,278	185
	Commercial Trips	15,439	16,322	17,205	19,142	21,078	23,015	32,698	17,259
	Office & Other Trips	6,748	6,774	6,800	6,857	6,914	6,971	7,257	509
	Total Vehicle Trips	116,986	118,338	119,690	122,783	125,877	128,970	144,943	27,957
VMT	Vehicle Miles of Travel	733,346	740,249	747,152	763,166	779,180	795,194	878,684	145,338
NEED	Additional Lane Miles		0.78	0.78	1.81	1.81	1.81	1.94	16.4
	Growth-Related Cost		\$782,767	\$782,767	\$1,815,959	\$1,815,959	\$1,815,959	\$1,945,171	\$16,480,841

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.”

Multiplying the increase in number of lane miles (16.4) by the cost per lane mile from Figure S4 (\$1.003 million) results in a 10-year cost of approximately \$16.48 million attributed to arterial lane miles.

Development Fee Report

The cost to prepare the Street Facilities IIP and Development Fee Report totals \$25,800. Apache Junction 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 \$0.42 per average weekday VMT.

Figure S13: Development Fee Report Cost Allocation

Necessary Public Service	Cost	Assessed Against	Proportionate Share	Demand Unit	2018	2023	Change	Cost per Demand Unit
Streets	\$25,800	Residential Nonresidential	100%	VMT	733,346	795,194	61,848	\$0.42

STREET FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is not necessary for the Street Facility development fees because 10-year growth costs approximates the amount of revenue that is projected to be generated by development fees according to the Land Use Assumptions, as shown in Figure S15.

Proposed Street Facilities Development Fees

The proposed development fees for Street Facilities are shown in Figure S14. Cost factor for road improvements and professional services are summarized at the top of the figure. Residential development fees are expressed per housing unit. Nonresidential development fees are expressed per square feet of floor area. The Street Facilities development fees are calculated by multiplying the \$113.82 net cost per VMT/VMC by the VMT per development unit for each land use type.

Figure S14: Proposed Street Facilities Development Fees

Input Variables

Cost per VMT/VMC	\$113.40
Development Fee Study	\$0.42
Net Cost per VMT	\$113.82

Residential Development (per Housing Unit)

<i>Development Type</i>	<i>VMT per Development Unit</i>	<i>Proposed Fees</i>	<i>Current Fee</i>	<i>Increase / Decrease</i>
Single-Family	27.68	\$3,151	\$2,364	\$787
Multi-Family	18.60	\$2,117	\$1,856	\$261
Boat, RV, Van, Etc.	18.60	\$2,117	\$1,895	\$222

Nonresidential Development (per Sq. Ft.)

<i>Development Type</i>	<i>VMT per Development Unit</i>	<i>Proposed Fees</i>	<i>Current Fee</i>	<i>Increase / Decrease</i>
Industrial	10.48	\$1.19	\$1.36	(\$0.17)
Commercial/Retail	53.99	\$6.14	\$5.04	\$1.10
Office / Institutional	20.57	\$2.34	\$2.18	\$0.16

PROJECTED STREET FACILITIES DEVELOPMENT FEE REVENUE

Projected fee revenue shown in Figure S15 is based on the development projections in the Land Use Assumptions (see Appendix A) and the updated Street Facilities development fees (see Figure S14). Expenditures on arterial street improvements are derived from the anticipated need for approximately 16.4 new lane miles (including additional intersections) over the next 10 years (see Figure S12) at an average cost of \$1.003 million per lane mile (see Figure S4). 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. Anticipated development fee revenue is approximately \$16.5 million over the next 10 years, while expenditures are also estimated at \$16.5 million.

Figure S15: Projected Street Facilities Development Fee Revenue

Growth-Related Road Needs Development Fee Study		Within 10 Yrs				
		\$16,480,841				
		\$25,800				
		\$16,506,641				
Street Facilities Development Fee Revenue						
		Single-Family \$3,151 per unit	Multi-Family \$2,117 per unit	Industrial \$1.19 per sq. ft.	Commercial \$6.14 per sq. ft.	Office / Serv \$2.34 per sq. ft.
Year		Hsg Unit	Hsg Unit	KSF	KSF	KSF
Base	2018	20,826	2,388	441	1,239	1,386
Year 1	2019	20,920	2,405	445	1,310	1,391
Year 2	2020	21,015	2,421	448	1,381	1,396
Year 3	2021	21,250	2,463	457	1,537	1,408
Year 4	2022	21,486	2,504	465	1,692	1,420
Year 5	2023	21,721	2,546	473	1,847	1,431
Year 6	2024	21,957	2,587	482	2,003	1,443
Year 7	2025	22,192	2,629	490	2,158	1,455
Year 8	2026	22,465	2,677	499	2,314	1,467
Year 9	2027	22,737	2,725	507	2,469	1,478
Year 10	2028	23,010	2,773	515	2,625	1,490
Ten-Year Increase		2,184	385	75	1,385	104
Projected Revenue		\$6,880,349	\$814,662	\$89,082	\$8,513,149	\$244,640
Projected Development Fee Revenue						\$16,541,883

APPENDIX A: LAND USE ASSUMPTIONS

EXECUTIVE SUMMARY

For municipalities in Arizona, the state enabling legislation requires supporting documentation on land use assumptions, a plan for infrastructure improvements, and development fee calculations. This document contains the land use assumptions for the City of Apache Junction 2018 development fee update. Development fees must be updated every five years, making short-range projections the critical time frame. The Infrastructure Improvements Plan (IIP) is limited to 10 years for non-utility fees, thus a very long-range “build-out” analysis may not be used to derive development fees.

Arizona Revised Statutes (ARS) § 9-463.05 (T)(6) requires the preparation of a Land Use Assumptions document which shows:

“Projections of change in land uses, densities, intensities and population for a specified service area over a period of at least 10 years and pursuant to the General Plan of the municipality.”

TischlerBise prepared current demographic estimates and future development projections for both residential and nonresidential development that will be used in the Infrastructure Improvement Plan (IIP) and calculation of the development fees. Demographic data for 2018 (as of October 31) is used in calculating levels-of-service (LOS) provided to existing development in the City of Apache Junction. Although long-range projections are necessary for planning infrastructure systems, a shorter time frame of five to 10 years is critical for the impact fees analysis.

Arizona’s Development Fee Act requires fees to be updated at least every five years and limits the IIP to a maximum of 10 years for non-utility fees. Therefore, the use of a very long-range “build-out” analysis is no longer acceptable for deriving development fees in Arizona municipalities.

RESIDENTIAL DEVELOPMENT

Current estimates and future projections of residential development are detailed in this section, including population and housing units by type (e.g., single-family versus multi-family units).

Persons per Housing Unit

In 2010 the U.S. Census Bureau transitioned from the traditional long-form questionnaire to the American Community Survey (ACS), which is less detailed and has smaller sample sizes. As a result, Census data now has more limitations than before. For example, data on detached housing units are now combined with attached single units (commonly known as townhouses). For development fees in Apache Junction, “single-unit” residential includes detached units and townhouses that share a common sidewall, but are constructed on an individual parcel of land. The second residential category includes all multi-family structures with two or more units on an individual parcel of land. The third residential category includes mobile homes and recreational vehicles but is not included in the fee schedule since additional units of this type are not expected.

According to the Census Bureau, a household is a housing unit that is occupied by year-round residents. Development fees often use per capita standards and persons per housing unit, or persons per household, to derive proportionate-share fee amounts. When persons per housing unit are used in the fee

calculations, infrastructure standards are derived using year-round population. When persons per household are used in the fee calculations, the impact fee methodology assumes all housing units will be occupied, this requiring seasonal or peak population to be used when deriving infrastructure standards.

Because of the seasonal nature of the City's population, TischlerBise recommends that development fees for residential development in the City of Apache Junction be imposed according to a number of persons in occupied households. For the development fee calculations, TischlerBise used the ACS results shown at the top of Figure A1 to indicate the relative number of persons per household, by units in a residential structure, and the housing mix in Apache Junction. The ratio of persons per household (PPH) across housing types is 2.31. As shown in Figure A1, single-family units (which includes mobile homes) represent the greatest share of housing units in the City at almost 87%.

Figure A1: Persons per Household and Persons per Housing Unit by Type of Housing

<i>Units in Structure</i>	<i>Persons</i>	<i>Households</i>	<i>Persons per Household</i>	<i>Housing Units</i>	<i>Persons per Housing Unit</i>	<i>Housing Mix</i>	<i>Vacancy Rate</i>
Single-Family Unit ¹	33,247	14,180	2.34	19,120	1.74	86.9%	26%
Multi-Family Unit ²	3,888	1,704	2.28	2,204	1.76	10.0%	23%
Boat, RV, Van, etc.	1,177	666	1.77	666	1.77	3.0%	0%
TOTAL	38,312	16,550	2.31	21,990	1.74		25%

Source: TischlerBise analysis and calculation based on U.S. Census Bureau, 2013-2017 American Community Survey, 5-Year Estimates.

1. Includes detached, attached (townhouse) and mobile homes.

2. Includes structures with two or more units.

Recent Residential Construction

The City of Apache Junction provided TischlerBise with recent residential building permit activity, shown in Figure A2. There has been a total of 287 residential permits issued between May of 2014 and October of 2018. This equates to an average of approximately 65 residential permits a year, an amount that is anticipated to increase over time. Figure A2 also indicates that the majority of new housing units are single-family units, at 85 percent.

Figure A2: Recent Residential Permit Activity

<i>Year*</i>	<i>Single Family</i>	<i>%</i>	<i>Multi-Family</i>	<i>%</i>	<i>Total</i>
2014-2018	244	85%	43	15%	287

Source: City of Apache Junction, Arizona.

*May, 2014 to October, 2018

Population and Housing Units

To estimate the current number of housing units and residents, TischlerBise used Maricopa Association of Governments' (MAG) estimates (shown in yellow cells) for Apache Junction (Socioeconomic Projections, June 2016). These estimates are shown in Figure A3 below, along with MAG's 2030 projections. MAG estimates there were 40,030 persons and 23,769 housing units in Apache Junction in 2015. To determine base year (2018) estimates, the difference between the MAG 2020 projection and

2017 estimate are straight-lined. As Figure A3 indicates, MAG projects 47,700 persons by 2030, an increase of 7,413. The number of persons in group quarters was assumed to remain constant at 319 in the population projection, so the population in households increase is the same as the overall population increase.

To project future housing unit growth, TischlerBise applied the persons per household factor from Figure A1 to the population projections. Housing units are projected increase by 3,209 units from 2018 to 2030.

Figure A3: Apache Junction Population and Housing Estimates for 2018 and 2030

				Base	1	2	3	4	5	7	10	12	12-Year
	2010	2015	2017	2018	2019	2020	2021	2022	2023	2025	2028	2030	Increase
Population*	35,840	38,583	40,030	40,287	40,543	40,800	41,440	42,080	42,720	44,000	46,220	47,700	7,413
Population in Households	35,557	38,278	39,711	39,968	40,224	40,481	41,121	41,761	42,401	43,681	45,901	47,381	7,413
Population in Group Quarters*	283	305	319	319	319	319	319	319	319	319	319	319	0
Housing Units#	22,564	23,475	23,769	23,880	23,991	24,102	24,379	24,656	24,934	25,488	26,449	27,089	3,209

*Maricopa Association of Governments

#TischlerBise, based on MAG population projection

Population and Housing Units

Using the projection of housing units from Figure A3 above, TischlerBise estimated housing units by type, using the housing unit split for recent housing unit development shown in Figure A2. A total of 3,280 housing units are projected in Apache Junction by 2030. Given recent residential construction trends, 2,728 units, or 85 percent, are projected to be single-family units. The remaining 481 units are assumed to be multi-family units. Little or no additional RV units are anticipated.

Figure A4: Apache Junction Housing Unit by Type Projections

		1	2	3	4	5	7	10	12	12-Year
	Housing Units by Type	2019	2020	2021	2022	2023	2025	2028	2030	Increase
85%	Single Family	94	94	236	236	236	236	272	272	2,728
15%	Multi-Family	17	17	42	42	42	42	48	48	481
0%	Boat, RV, Van, etc.	0	0	0	0	0	0	0	0	0
		111	111	277	277	277	277	320	320	3,209

NONRESIDENTIAL DEVELOPMENT

In addition to data on residential development, the infrastructure improvements plan and development fees require data on nonresidential development in Apache Junction. Current estimates and future projections of nonresidential development are detailed in this section, including jobs and floor area by type. TischlerBise uses the terms “jobs” to refer to employment by place of work.

Employment Density Factors

The prototype for future commercial / retail development is an average-size Shopping Center (ITE 820). Commercial / retail development (i.e. retail and eating / drinking places) is assumed to average 427 square feet per job. For future industrial development, Light Industrial (ITE 110) is a reasonable proxy with an

average of 615 square feet per job. For office / other service development, General Office (ITE 710) is the prototype for future development, with an average of 337 square feet per job.

Figure A5: Employment Density Factors

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	4.96	3.05	1.63	615
130	Industrial Park	1,000 Sq Ft	3.37	2.91	1.16	864
140	Manufacturing	1,000 Sq Ft	3.93	2.47	1.59	628
150	Warehousing	1,000 Sq Ft	1.74	5.05	0.34	2,902
520	Elementary School	1,000 Sq Ft	19.52	21.00	0.93	1,076
610	Hospital	1,000 Sq Ft	10.72	3.79	2.83	354
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
760	Research & Dev Center	1,000 Sq Ft	11.26	3.29	3.42	292
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).

Jobs and Nonresidential Floor Area

Because the Maricopa Association of Governments' employment projections for Apache Junction are for the Municipal Planning Area, which is greater than the City's municipal boundary, TischlerBise used the US Census Bureau's OnTheMap data from 2015. As shown in Figure A6, the 2015 employment is 7,391. Using square footage per employee factors from the Institute of Transportation Engineers (ITE), TischlerBise estimates 2015 nonresidential square footage at approximately 2.89 million. Similar to the discussion on residential permit information, the City tracks permitted nonresidential square footage since 2015, which totaled 174,737 as of the end of October 2018. Therefore, estimated 2018 nonresidential floor area is approximately 3.06 million. Finally, using the same ITE square footage per employee factors, TischlerBise estimates 411 new jobs have been added since 2015, for a total 7,802 jobs as of October of 2018.

Figure A6: Apache Junction Jobs Estimates for 2015 and 2018

Nonresidential Category	2015 Jobs ¹	% of 2015 Total Jobs	Sq. Ft. Per Job*	2015 Estimated Floor Area**	Sq. Ft. Since 2015#	New Jobs Since 2015##	% of New Jobs Since 2015	2018 Jobs	2018 Estimated Floor Area
Industrial	703	9.5%	615	432,345	8,344	14	3.3%	717	440,689
Commercial / Retail	2,540	34.4%	427	1,084,580	154,724	362	88.3%	2,902	1,239,304
Institutional	3,425	46.3%	330	1,130,250	563	2	0.4%	3,427	1,130,813
Office and Other Services	723	9.8%	337	243,651	11,106	33	8.0%	756	254,757
TOTAL	7,391	100%		2,890,826	174,737	411	100%	7,802	3,065,563

1. OnTheMap 2015 estimates

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

**Jobs multiplied square feet per job

#Based on City building permit data

Jobs and Nonresidential Floor Area

To determine future employment growth in Apache Junction, TischlerBise utilized MAG's 2015 employment projections for the Municipal Planning Area. As shown in Figure A6, the 2018 employment

estimate for Apache Junction discussed above in Figure A5 is 72.4 percent of total employment for the Municipal Planning Area. This percentage was held constant and applied to the Municipal Planning Area projection to 2030. TischlerBise applied the distribution of jobs added since 2015 from Figure A5 to future employment projections as well. As shown in Figure A7, the City is expected to add a total of approximately 4,500 jobs by 2030. Most of these jobs will be in the retail sector.

Figure A7: Apache Junction Job Projections

	Base	1	2	3	4	5	7	10	12	12-Year
	2018	2019	2020	2021	2022	2023	2025	2028	2030	Increase
OnTheMap/TischlerBise										
Industrial	717	723	729	743	756	770	797	838	865	149
Commercial / Retail	2,902	3,068	3,234	3,599	3,963	4,327	5,055	6,147	6,875	3,973
Institutional	3,427	3,427	3,428	3,430	3,432	3,433	3,437	3,442	3,445	19
Office & Other Services	756	771	786	819	852	885	952	1,051	1,117	361
Total	7,802	7,990	8,178	8,590	9,003	9,415	10,240	11,478	12,303	4,501
MAG										
	Base	1	2	3	4	5	7	10	12	12-Year
	2018	2019	2020	2021	2022	2023	2025	2028	2030	Increase
Total	10,780	11,040	11,300	11,870	12,440	13,010	14,150	15,860	17,000	6,220
	72.4%	72.4%	72.4%	72.4%	72.4%	72.4%	72.4%	72.4%	72.4%	

Using the floor area per employee factors from Figure A5 and applying them to the increase in employment shown above in Figure A7, TischlerBise projected the increase in nonresidential floor area, which is shown below in Figure A8. The 12-year forecast for nonresidential floor area, broken down by category, is shown in Figure A8, which is estimated at 1.9 million additional square feet.

Figure A8: Apache Junction Nonresidential Floor Area Projection

	Base	1	2	3	4	5	7	10	12	12-Year
	2018	2019	2020	2021	2022	2023	2025	2028	2030	Increase
Square Footage										
Industrial	440,689	444,513	448,337	456,720	465,104	473,487	490,253	515,403	532,170	91,481
Commercial / Retail	1,239,304	1,310,212	1,381,120	1,536,573	1,692,026	1,847,479	2,158,384	2,624,742	2,935,647	1,696,343
Institutional	1,130,813	1,131,071	1,131,329	1,131,895	1,132,460	1,133,026	1,134,157	1,135,854	1,136,986	6,173
Office & Other Services	254,757	259,847	264,937	276,095	287,253	298,411	320,728	354,203	376,520	121,763
Total	3,065,563	3,145,643	3,225,723	3,401,283	3,576,843	3,752,403	4,103,523	4,630,202	4,981,322	1,915,759

Estimated Residential Vehicle Trip Rates

As an alternative to simply using the national average trip generation rate for residential development, the Institute of Transportation Engineers (ITE) publishes regression curve formulas that may be used to derive custom trip generation rates, using local demographic data. Key independent variables needed for the analysis (i.e. vehicles available, housing units, households, and persons) are available from American Community Survey data. Shown in Figure A9, custom trip generation rates for Apache Junction vary dramatically from the national averages. For example, single-family residential development is expected to generate 6.40 average weekday vehicle trip ends per dwelling – compared to the national average of 9.44 (ITE 210). Multi-family residential development is expected to generate 4.30 average weekday vehicle trip ends per dwelling, which is lower than the national average of 5.44 (ITE 221).

Figure A9: Average Weekday Vehicle Trip Ends by Housing Type

	Vehicles Available ¹	Households by Structure Type ²			Vehicles per HH by
		Single-Family	Multi-Family	Total	
Owner-occupied	19,444	11,379	667	12,046	1.61
Renter-occupied	5,979	2,801	1,703	4,504	1.33
TOTAL	25,423	14,180	2,370	16,550	1.54

	Persons in Households ³	Trip Ends ⁴	Vehicles by Type of Unit	Trip Ends ⁵	Average Trip Ends	Housing Units ⁶	Trip Ends per Unit	
							Apache Junction	ITE ⁷
Single-Family	33,247	100,195	22,086	144,681	122,438	19,120	6.40	9.44
Multi-Family	5,065	11,518	3,337	13,443	12,480	2,870	4.30	5.44
TOTAL	38,312	111,713	25,423	158,124	134,918	21,990	6.10	

1. Vehicles available by tenure from Table B25046, American Community Survey, 2013-2017 5-Year Estimates.

2. Households by tenure and units in structure from Table B25032, American Community Survey, 2013-2017 5-Year

3. Total population in households from Table B25033, American Community Survey, 2013-2017 5-Year Estimates.

4. Vehicle trips ends based on persons using formulas from Trip Generation (ITE 2017). For single-family housing (ITE 210), the fitted curve equation is $EXP(0.89 \cdot \ln(\text{persons}) + 1.72)$. To approximate the average population of the ITE studies, persons were divided by 122 and the equation result multiplied by 122. For multi-family housing (ITE 221), the fitted curve equation is $(2.29 \cdot \text{persons}) - 81.02$.

5. Vehicle trip ends based on vehicles available using formulas from Trip Generation (ITE 2017). For single-family housing (ITE 210), the fitted curve equation is $EXP(0.99 \cdot \ln(\text{vehicles}) + 1.93)$. To approximate the average number of vehicles in the ITE studies, vehicles available were divided by 143 and the equation result multiplied by 143. For multi-family housing (ITE 221), the fitted curve equation is $(3.94 \cdot \text{vehicles}) + 293.58$.

6. Housing units from Table B25024, American Community Survey, 2013-2017 5-Year Estimates.

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

SUMMARY OF GROWTH INDICATORS

The growth assumptions discussed individually above are summarized below in Figure A10. These projections will be used to estimate development fee revenue and to indicate the anticipated need for growth-related infrastructure. However, development fees methodologies are designed to reduce sensitivity to accurate development projections in the determination of the proportionate-share fee amounts. If actual development is slower than projected, development fees revenues will decline, but so will the need for growth-related infrastructure. In contrast, if development is faster than anticipated, the City will receive an increase in development fee revenue but will also need to accelerate capital improvements to keep pace with development.

Figure A10: Summary of Growth Projections

	2018	2019	2020	2021	2022	2023	2028	2030	12-Year
Cumulative Increase	Base	1	2	3	4	5	10	12	Increase
Population	40,287	40,543	40,800	41,440	42,080	42,720	46,220	47,700	7,413
Housing Units	23,880	23,991	24,102	24,379	24,656	24,934	26,449	27,089	3,209
Jobs									
Industrial	717	723	729	743	756	770	838	865	149
Commercial / Retail	2,902	3,068	3,234	3,599	3,963	4,327	6,147	6,875	3,973
Institutional	3,427	3,427	3,428	3,430	3,432	3,433	3,442	3,445	19
Office & Other Services	756	771	786	819	852	885	1,051	1,117	361
Total Jobs	7,802	7,990	8,178	8,590	9,003	9,415	11,478	12,303	4,501
Nonresidential Floor Area (x 1,000)									
Industrial KSF	441	445	448	457	465	473	515	532	91
Commercial / Retail KSF	1,239	1,310	1,381	1,537	1,692	1,847	2,625	2,936	1,696
Institutional KSF	1,131	1,131	1,131	1,132	1,132	1,133	1,136	1,137	6
Office & Other Services KSF	255	260	265	276	287	298	354	377	122
Total Nonresidential KSF	3,066	3,146	3,226	3,401	3,577	3,752	4,630	4,981	1,916

	2019	2020	2021	2022	2023	2028	2030	Average
	1	2	3	4	5	10	12	Increase
	257	257	640	640	640	740	740	618
	111	111	277	277	277	320	320	267
Industrial	6	6	14	14	14	14	14	12
Commercial / Retail	166	166	364	364	364	364	364	331
Institutional	1	1	2	2	2	2	2	2
Office & Other Services	15	15	33	33	33	33	33	30
	188	188	413	413	413	413	413	375
Industrial KSF	4	4	8	8	8	8	8	8
Commercial / Retail KSF	71	71	155	155	155	155	155	141
Institutional KSF	0	0	1	1	1	1	1	1
Office & Other Services KSF	5	5	11	11	11	11	11	10
	80	80	176	176	176	176	176	160

APPENDIX B: FORECAST OF REVENUES

This section will be inserted into the next Draft.

APPENDIX C: CITY ROAD INVENTORY

Arterial Street	Location	Segment Length (Miles)	Total Lanes	Vehicle Lane Miles	Total AADT (TUBE)	Vehicle Miles of Travel
Apache Trail	Meridian Dr. to Delaware Dr.	0.5	6.0	3.0	9,695	29,085
Apache Trail	Delaware Dr. to Ironwood Dr.	0.5	6.0	3.0	10,392	31,176
Apache Trail	Ironwood Dr. to Phelps	0.8	6.0	4.5	11,901	53,555
Old West Highway	Phelps to Idaho Rd.	0.3	6.0	1.5	8,804	13,206
Old West Highway	Idaho Rd. to Tomahawk Rd.	1.5	4.0	6.0	8,979	53,874
Old West Highway	Tomahawk Rd. to Goldfield Rd.	1.5	4.0	6.0	3,931	23,586
Meridian Dr.	US60 to Southern Ave.	0.5	2.0	1.0	6,034	6,034
Meridian Dr.	Southern Ave. to Broadway Ave.	1.0	1.0	1.0	7,699	7,699
Meridian Dr.	Broadway Ave. to Apache Trail	0.5	1.0	0.5	5,129	2,565
Meridian Dr.	Apache Trail to Superstition Blvd.	0.5	2.0	1.0	5,220	5,220
Meridian Dr.	Superstition Blvd. to Lost Dutchman Blvd.	1.0	1.0	1.0	3,033	3,033
Meridian Dr.	Lost Dutchman Blvd. to McKellips Rd.	1.0	1.0	1.0	1,883	1,883
Ironwood Dr.	Elliot Rd. Alignment to Guadalupe Ave.	1.0	4.0	4.0	16,065	64,260
Ironwood Dr.	Guadalupe Ave. to Baseline Ave.	1.0	4.0	4.0	18,342	73,368
Ironwood Dr.	Baseline Ave. to US60	0.5	4.0	2.0	15,826	31,652
Ironwood Dr.	US60 to Southern Ave.	0.5	4.0	2.0	9,070	18,140
Ironwood Dr.	Southern Ave. to 16th Ave.	0.5	4.0	2.0	9,400	18,800
Ironwood Dr.	16th Ave. to Broadway Ave.	0.5	4.0	2.0	8,966	17,932
Ironwood Dr.	Broadway Ave. to Apache Trail	0.5	4.0	2.0	6,335	12,670
Ironwood Dr.	Apache Trail to Superstition Blvd.	0.5	4.0	2.0	4,369	8,738
Ironwood Dr.	Superstition Blvd. to Teepee St.	0.5	2.0	1.0	3,053	3,053
Ironwood Dr.	Teepee St. to Lost Dutchman Blvd.	0.5	2.0	1.0	2,212	2,212
Ironwood Dr.	Lost Dutchman Blvd. to McKellips Rd.	1.0	2.0	2.0	1,342	2,684
Delaware Dr.	Southern Ave. to 16th Ave.	0.5	2.0	1.0	3,872	3,872
Delaware Dr.	16th Ave. to Broadway Ave.	0.5	2.0	1.0	1,766	1,766
Delaware Dr.	Broadway Ave. to Apache Trail	0.5	2.0	1.0	3,419	3,419
Delaware Dr.	Apache Trail to Superstition Blvd.	0.5	2.0	1.0	1,712	1,712
Delaware Dr.	Superstition Blvd. to Teepee St.	0.5	2.0	1.0	1,546	1,546
Delaware Dr.	Teepee St. to Lost Dutchman Blvd.	0.5	2.0	1.0	777	777
Idaho Rd.	Baseline Ave. to US60	0.5	2.0	1.0	2,271	2,271
Idaho Rd.	North Apache Trail to Superstition Blvd.	0.3	4.0	1.0	5,141	5,141
Idaho Rd.	Superstition Blvd. to Teepee St.	0.5	2.0	1.0	2,867	2,867
Idaho Rd.	Teepee St. to Lost Dutchman Blvd.	0.5	2.0	1.0	2,004	2,004
Idaho Rd.	Lost Dutchman Blvd. to McKellips Rd.	1.0	2.0	2.0	1,315	2,630
Tomahawk Rd.	Baseline Ave. to US60	0.5	4.0	2.0	2,631	5,262
Tomahawk Rd.	US60 to Southern Ave.	0.5	4.0	2.0	4,819	9,638
Tomahawk Rd.	Southern Ave. to Old West Highway	0.8	4.0	3.0	3,049	9,147
Tomahawk Rd.	Old West Highway to Broadway Ave.	0.3	2.0	0.5	1,686	843
Tomahawk Rd.	Broadway Ave. to Superstition Blvd.	1.0	2.0	2.0	1,601	3,202
Tomahawk Rd.	Superstition Blvd. to North Apache Trail	0.8	2.0	1.5	526	789
Tomahawk Rd.	North Apache Trail to Lost Dutchman	0.8	2.0	1.6	344	550
Goldfield Rd.	Baseline Ave. to US60	0.5	4.0	2.0	732	1,464
Goldfield Rd.	US60 to Southern Ave.	0.5	4.0	2.0	872	1,744
Goldfield Rd.	Southern Ave. to Broadway Ave.	1.0	2.0	2.0	1,054	2,108
Goldfield Rd.	Broadway Ave. to Superstition Blvd.	1.0	2.0	2.0	804	1,608
Goldfield Rd.	Superstition Blvd. to Lost Dutchman Blvd.	1.0	2.0	2.0	739	1,478

Arterial Street	Location	Segment Length (Miles)	Total Lanes	Vehicle Lane Miles	Total AADT (TUBE)	Vehicle Miles of Travel
Guadalupe Rd.	Delaware Dr. to Ironwood Dr.	0.5	2.0	1.0	1,344	1,344
Baseline Ave.	W. city limit to Ironwood Dr.	0.8	2.0	1.6	5,626	9,002
Baseline Ave.	Ironwood Dr. to Idaho Rd.	1.0	2.0	2.0	3,640	7,280
Baseline Ave.	Idaho Rd. to Tomahawk Rd.	1.0	2.0	2.0	2,797	5,594
Baseline Ave.	Tomahawk Rd. to Goldfield Rd.	1.0	2.0	2.0	2,739	5,478
Southern Ave.	Meridian Dr. to Delaware Dr.	0.5	2.0	1.0	5,396	5,396
Southern Ave.	Delaware Dr. to Ironwood Dr.	0.5	2.0	1.0	4,194	4,194
Southern Ave.	Ironwood Dr. to San Marcos Rd.	0.5	4.0	2.0	3,447	6,894
Southern Ave.	San Marcos Rd. to Idaho Rd.	0.5	2.0	1.0	3,447	3,447
Southern Ave.	Idaho Rd. to Tomahawk Rd.	1.0	4.0	4.0	1,805	7,220
Southern Ave.	Tomahawk Rd. to Raindance Rd.	0.3	2.0	0.5	1,472	736
Southern Ave.	Raindance Rd. to Cortez Rd.	0.3	4.0	1.0	1,472	1,472
16th Ave.	Cedar Dr. to Delaware Dr.	0.4	2.0	0.8	953	762
16th Ave.	Delaware Dr. to Ironwood Dr.	0.5	2.0	1.0	1,233	1,233
16th Ave.	Ironwood Dr. to Idaho Rd.	1.0	2.0	2.0	1,996	3,992
Broadway Ave.	Meridian Dr. to Delaware Dr.	0.5	4.0	2.0	5,572	11,144
Broadway Ave.	Delaware Dr. to Ironwood Dr.	0.5	4.0	2.0	5,271	10,542
Broadway Ave.	Ironwood Dr. to Idaho Rd.	1.0	4.0	4.0	4,555	18,220
Broadway Ave.	Old West Highway to Tomahawk Rd.	0.5	2.0	1.0	1,226	1,226
Broadway Ave.	Tomahawk Rd. to Goldfield Rd.	1.0	2.0	2.0	1,315	2,630
Broadway Ave.	Goldfield Rd. to Arroya Dr.	0.8	2.0	1.5	1,207	1,811
Superstition Blvd.	Meridian Dr. to Delaware Dr.	0.5	4.0	2.0	6,554	13,108
Superstition Blvd.	Delaware Dr. to Ironwood Dr.	0.5	4.0	2.0	6,643	13,286
Superstition Blvd.	Ironwood Dr. to Idaho Rd.	1.0	4.0	4.0	5,631	22,524
Superstition Blvd.	Idaho Rd. to SR88	0.3	4.0	1.2	2,336	2,803
Superstition Blvd.	SR88 to Tomahawk Rd.	0.7	2.0	1.3	1,816	2,397
Superstition Blvd.	Tomahawk Rd. to Goldfield Rd.	1.0	2.0	2.0	2,061	4,122
Superstition Blvd.	Goldfield Rd. to Arroya Dr.	0.7	2.0	1.4	1,503	2,104
Tepee St.	Meridian Dr. to Delaware Dr.	0.5	2.0	1.0	278	278
Tepee St.	Delaware Dr. to Ironwood Dr.	0.5	2.0	1.0	293	293
Tepee St.	Ironwood Dr. to Idaho Rd.	1.0	2.0	2.0	239	478
Lost Dutchman Blvd.	Meridian Dr. to Delaware Dr.	0.5	2.0	1.0	2,362	2,362
Lost Dutchman Blvd.	Delaware Dr. to Ironwood Dr.	0.5	2.0	1.0	2,451	2,451
Lost Dutchman Blvd.	Ironwood Dr. to Idaho Rd.	1.0	2.0	2.0	2,024	4,048
Lost Dutchman Blvd.	Idaho Rd. to Tomahawk Rd.	1.0	2.0	2.0	1,080	2,160
Lost Dutchman Blvd.	Tomahawk Rd. to SR88	0.4	2.0	0.8	770	616
Lost Dutchman Blvd.	SR88 to Goldfield Rd.	0.6	2.0	1.2	364	437
TOTAL		55.4		149		733,346