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

Prepared for:
Flagstaff, Arizona

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EXECUTIVE SUMMARY

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

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

1. Fire Facilities
2. Police Facilities

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

ARIZONA DEVELOPMENT FEE ENABLING LEGISLATION

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

Necessary Public Services

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

1. Development fees were pledged to repay debt service obligations related to the construction of the facility.
2. After August 1, 2014, any development fees collected are used solely for the payment of principal and interest on the portion of the bonds, notes, or other debt service obligations issued before June 1, 2011 to finance construction of the facility.

Infrastructure Improvements Plan

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

1. A description of the existing necessary public services in the service area and the costs to update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.
2. An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.
3. A description of all or the parts of the necessary public services or facility expansions and their costs necessitated by and attributable to development in the service area based on the approved Land Use Assumptions, including a forecast of the costs of infrastructure, improvements, real property, financing, engineering and architectural services, which shall be prepared by qualified professionals licensed in this state, as applicable.
4. A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial, and industrial.
5. The total number of projected service units necessitated by and attributable to new development in the service area based on the approved Land Use Assumptions and calculated pursuant to generally accepted engineering and planning criteria.
6. The projected demand for necessary public services or facility expansions required by new service units for a period not to exceed ten years.
7. A forecast of revenues generated by new service units other than development fees, which shall include estimated state-shared revenue, highway users revenue, federal revenue, ad valorem property taxes, construction contracting or similar excise taxes and the capital recovery portion of utility fees attributable to development based on the approved Land Use Assumptions and a plan to include these contributions in determining the extent of the burden imposed by the development.

Qualified Professionals

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

Conceptual Development Fee Calculation

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

Evaluation of Credits/Offsets

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

DEVELOPMENT FEE REPORT

METHODOLOGY

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

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

- **Cost Recovery** (past improvements) - The rationale for recoupment, often called cost recovery, is that future development is paying for its share of the useful life and remaining capacity of facilities already built, or land already purchased, from which future development will benefit. This method is often used for utility systems that must provide adequate capacity before future 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 deficiencies or surplus capacity in existing infrastructure. Future development is paying only its proportionate share for growth-related infrastructure. Revenue will be used to expand or provide additional facilities, as needed, to accommodate future development. An incremental expansion cost method is best suited for public facilities that will be expanded in regular increments to keep pace with development.
- **Plan-Based** (future improvements) - The plan-based method allocates costs for a specified set of improvements to a specified amount of development. Improvements are typically identified in a long-range facility plan and development potential is identified by a land use plan. There are two basic options for determining the cost per demand unit: (1) total cost of a public facility can be divided by total demand units (average cost), or (2) the growth-share of the public facility cost can be divided by the net increase in demand units over the planning timeframe (marginal cost).

DEVELOPMENT FEE COMPONENTS

Figure 1 summarizes service areas, methodologies, and infrastructure cost components for each necessary public service. Appendix E includes a map of the service area.

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

Necessary Public Services	Service Area	Cost Recovery	Incremental Expansion	Plan-Based	Cost Allocation
Fire	Flagstaff	N/A	Facilities, Apparatus, Communications Equipment	Development Fee Report	Peak Population, Jobs
Police	Flagstaff	N/A	Facilities, Vehicles, Communications Equipment	Development Fee Report	Peak Population, Vehicle Trips

PROPOSED DEVELOPMENT FEES

Development fees for residential development will be assessed per dwelling unit, based on the type of unit and number of bedrooms. Nonresidential development fees will be assessed per square foot of floor area, based on the type of development. As directed by staff, the proposed development fee schedule varies residential fees based on the number of bedrooms. For nonresidential development, the proposed development fee schedule includes three additional development types: hotel, nursing home, and assisted living.

Fees shown below represent the maximum allowable fees. Flagstaff 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 Flagstaff'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 2: Proposed Development Fees

Residential Development	Fees per Unit		
Development Type	Fire	Police	Total
Single-Family Units			
0-1 Bedrooms	$778	$385	$1,163
2 Bedrooms	$892	$442	$1,334
3 Bedrooms	$1,071	$531	$1,602
4+ Bedrooms	$1,357	$672	$2,029
Multi-Family Units			
0-1 Bedrooms	$643	$319	$962
2 Bedrooms	$896	$444	$1,340
3+ Bedrooms	$1,352	$670	$2,022

Nonresidential Development	Fees per Square Foot		
Development Type	Fire	Police	Total
Industrial / Flex	$0.40	$0.10	$0.50
Commercial / Retail	$0.81	$0.78	$1.59
Office / Institutional	$1.03	$0.30	$1.33
Hotel (per room)	$202	$263	$465
Nursing Home (per bed)	$364	$96	$460
Assisted Living (per bed)	$212	$82	$294

Current Development Fees

Flagstaff currently charges development fees to residential development based on the type of unit: single family or multi-family. For nonresidential development, Flagstaff currently charges development fees based on three development types: industrial / flex, commercial / retail, and office / institutional. Shown below, Figure 3 includes current development fees.

Figure 3: Current Development Fees

Residential Development	Fees per Unit		
Development Type	Fire	Police	Total
Single Family	$366	$182	$548
Multi-Family	$342	$170	$512

Nonresidential Development	Fees per Square Foot		
Development Type	Fire	Police	Total
Industrial Flex	$0.08	$0.03	$0.11
Commercial	$0.59	$0.29	$0.88
Office	$0.23	$0.11	$0.34

Difference Between Proposed and Current Development Fees

The differences between the proposed and current development fees are displayed below in Figure 4.

Figure 4: Difference Between Proposed and Current Development Fees

Residential Development	Fees per Unit		
Development Type	Fire	Police	Total
Single-Family Units			
0-1 Bedrooms	$412	$203	$615
2 Bedrooms	$526	$260	$786
3 Bedrooms	$705	$349	$1,054
4+ Bedrooms	$991	$490	$1,481
Multi-Family Units			
0-1 Bedrooms	$301	$149	$450
2 Bedrooms	$554	$274	$828
3+ Bedrooms	$1,010	$500	$1,510

Nonresidential Development	Fees per Square Foot		
Development Type	Fire	Police	Total
Industrial / Flex	$0.32	$0.07	$0.39
Commercial / Retail	$0.22	$0.49	$0.71
Office / Institutional	$0.80	$0.19	$0.99
Hotel (per room)	N/A	N/A	N/A
Nursing Home (per bed)	N/A	N/A	N/A
Assisted Living (per bed)	N/A	N/A	N/A

FIRE FACILITIES IIP

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

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

The Fire Facilities IIP includes components for facilities, apparatus, communications equipment, and the cost of preparing the Fire Facilities IIP and related Development Fee Report. The incremental expansion methodology is used for facilities, apparatus, and communications equipment. A plan-based methodology is used for the Development Fee Report.

Service Area

Flagstaff's Fire Department strives to provide a uniform response time citywide, and its fire stations operate as an integrated network. The service area for the Fire 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. The Fire Facilities IIP and development fees are assessed on both residential and nonresidential development based on functional population shown in Figure F1. Based on 2015 functional population data, residential development accounts for approximately 67 percent of functional population and nonresidential development is responsible for the remaining 33 percent.

Figure F1: Proportionate Share

Demand Units in 2015					
Residential				Demand Hours/Day	Person Hours
	Population	59,640			
	Residents Not Working		29,181	20	583,628
	Employed Residents		30,459		
	Employed in Flagstaff		19,842	14	277,788
	Employed outside Flagstaff		10,617	14	148,638
				Residential Subtotal	1,010,054
				Residential Share	67%
Nonresidential					
	Non-working Residents		29,181	4	116,726
	Jobs Located in Flagstaff		37,109		
	Residents Employed in Flagstaff		19,842	10	198,420
	Non-Resident Workers (inflow commuters)		17,267	10	172,670
				Nonresidential Subtotal	487,816
				Nonresidential Share	33%
				Total	1,497,870

Source: U.S. Census Bureau, OnTheMap 6.1.1 Application and LEHD Origin-Destination Employment Statistics.

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 F2 displays the demand indicators for residential and nonresidential land uses. For residential development, the table displays persons per household based on unit type and number of bedrooms. For nonresidential development, the table displays the number of jobs per thousand square feet of floor area.

Figure F2: Ratio of Service Unit to Development Unit

Development Type	Persons per Household[1]
Single Family	
0-1 Bedrooms	1.91
2 Bedrooms	2.19
3 Bedrooms	2.63
4+ Bedrooms	3.33
Multi-Family	
0-1 Bedrooms	1.58
2 Bedrooms	2.20
3+ Bedrooms	3.32

Development Type	Jobs per 1,000 Sq Ft[1]
Industrial / Flex	1.16
Commercial / Retail	2.34
Office / Institutional	2.97
Hotel (per room)	0.58
Nursing Home (per bed)	1.05
Assisted Living (per bed)	0.61

1. See Land Use Assumptions

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

ARS § 9-463.05(E)(1) requires:

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

ARS § 9-463.05(E)(2) requires:

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

Facilities – Incremental Expansion

The City of Flagstaff plans to expand its current inventory of fire facilities to serve future development. Shown below in Figure F3, Flagstaff's existing fire facilities include 55,500 square feet. Functional population provides the proportionate share of demand for fire facilities from residential and nonresidential development. Flagstaff's existing level of service for residential development is 0.4909 square feet per person (55,500 square feet X 67 percent residential share / 75,756 persons). The nonresidential level of service is 0.4146 square feet per job (55,500 square feet X 33 percent nonresidential share / 44,172 jobs).

Based on estimates provided by Flagstaff's Fire Department, construction of a 10,000-square-foot fire station will cost $4.635 million and land acquisition will cost $500,000 for approximately two acres – this results in a facility cost of $514 per square foot. The cost is $252.05 per person (0.4909 square feet per person X $514 per square foot) and $212.91 per job (0.4146 square feet per job X $514 per square foot).

Figure F3: Existing Facilities Level of Service

Description	Square Feet
Station 1	8,000
Station 2	10,000
Station 3	10,000
Station 4	6,500
Station 5	8,000
Station 6	8,000
Wildfire Crew Station	2,000
Administrative Offices	3,000
Total	55,500

Cost Allocation Factors	
Planned Station Cost	$5,135,000
Planned Station Square Feet	10,000
Cost per Square Foot	$514

Level-of-Service (LOS) Standards	
Existing Square Feet	55,500
Residential	
Residential Share	67%
2019 Peak Population	75,756
Square Feet per Person	0.4909
Cost per Person	$252.05
Nonresidential	
Nonresidential Share	33%
2019 Jobs	44,172
Square Feet per Job	0.4146
Cost per Job	$212.91

Source: Flagstaff Fire Department

Apparatus – Incremental Expansion

Development fees will be used to expand Flagstaff's fleet of fire apparatus. The current inventory includes 42 units with a total replacement cost of $15,736,000 – the average cost per unit is $374,667. Flagstaff's existing LOS for residential development is 0.0004 units per person (42 units X 67 percent residential share / 75,756 persons). The nonresidential level of service is 0.0003 units per job (42 units X 33 percent nonresidential share / 44,172 jobs). The cost is $139.17 per person (0.0004 units per person X $374,667 per unit) and $117.56 per job (0.0003 units per job X $374,667 per unit).

Figure F4: Existing Apparatus Level of Service

Description	Units	Unit Cost[1]	Replacement Cost
3/4-Ton 4x4 Truck (WFM)	3	$90,000	$270,000
3/4-Ton 4x4 Truck (RTC)	2	$80,000	$160,000
Aerial Truck (Quint Ladder)	2	$1,345,000	$2,690,000
4x4 SUV-Tahoe (BC/DC)	3	$62,500	$187,500
Rescue Vehicle	2	$300,000	$600,000
Engine Type 6	4	$210,000	$840,000
1/2-Ton 2WD Truck	1	$30,000	$30,000
Engine Type 1	8	$780,000	$6,240,000
4x4 SUV CRR	7	$47,500	$332,500
1-Ton 4x4 Rescue Truck	1	$90,000	$90,000
Engine Type 3	3	$430,000	$1,290,000
Water Tender Type 2	2	$415,000	$830,000
HAZMAT Truck	1	$675,000	$675,000
Heavy Rescue	1	$925,000	$925,000
UTV	2	$18,000	$36,000
SCBA Packs/Bottles[2]			$540,000
Total	42	$374,667	$15,736,000

1. Includes the cost of equipment
2. Includes 90 SCBA packs/bottles with cost allocated to all apparatus

Cost Allocation Factors	
Average Cost per Unit	$374,667

Level-of-Service (LOS) Standards	
Existing Units	42
Residential	
Residential Share	67%
2019 Peak Population	75,756
Units per Person	0.0004
Cost per Person	$139.17
Nonresidential	
Nonresidential Share	33%
2019 Jobs	44,172
Units per Job	0.0003
Cost per Job	$117.56

Source: Flagstaff Fire Department

Communications Equipment – Incremental Expansion

Flagstaff will use development fees to expand its inventory of communications equipment. The current inventory includes 235 units with a total replacement cost of $1,587,500. The average cost for communications equipment is $6,755 per unit.

As previously discussed, functional population is used to allocate the proportionate share of demand to residential and nonresidential development. Flagstaff's existing LOS for residential development is 0.0021 units per person (235 units X 67 percent residential share / 75,756 persons). The nonresidential level of service is 0.0018 units per job (235 units X 33 percent nonresidential share / 44,172 jobs). The cost is $14.04 per person (0.0021 units per person X $6,755 per unit) and $11.86 per job (0.0018 units per job X $6,755 per unit).

Figure F5: Existing Communications Equipment Level of Service

Description	Units	Unit Cost	Replacement Cost
Portable Radios 800mhz	100	$8,000	$800,000
Wildland VHF Radios	60	$2,500	$150,000
Mobile Radios 800mhz/VHF	75	$8,500	$637,500
Total	235	$6,755	$1,587,500

Cost Allocation Factors	
Average Cost per Unit	$6,755

Level-of-Service (LOS) Standards	
Existing Units	235
Residential	
Residential Share	67%
2019 Peak Population	75,756
Units per Person	0.0021
Cost per Person	$14.04
Nonresidential	
Nonresidential Share	33%
2019 Jobs	44,172
Units per Job	0.0018
Cost per Job	$11.86

Source: Flagstaff Fire Department

IIP and Development Fee Report – Plan-Based

The cost to prepare the Fire Facilities IIP and development fees totals $22,500. Flagstaff 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 $2.25 per person and $4.54 per job.

Figure F6: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Demand Unit	5-Year Increase	Cost per Demand Unit
Fire	$22,500	Residential	67%	Peak Population	6,706	$2.25
		Nonresidential	33%	Jobs	1,635	$4.54
Police	$22,250	Residential	66%	Peak Population	6,706	$2.19
		Nonresidential	34%	Vehicle Trips	5,854	$1.29
Total	$44,750					

Fire Facilities Infrastructure Improvements Plan

The Flagstaff Fire Department identified necessary public services that are eligible for Fire Facilities development fees. These improvements, shown in Figure F7, total $13,295,000 and a portion of this total can be funded with development fees.

Figure F7: Fire Facilities Infrastructure Improvements Plan

Description	Units	Total Cost
Fire Station 7 - Building & Equipment	10,000 sq ft	$4,635,000
Fire Station 7 - Land	2 acres	$500,000
Fire Station 8 - Building & Equipment	10,000 sq ft	$4,635,000
Fire Station 8 - Land	2 acres	$500,000
Type 1 Engine[1]	1	$780,000
Quint[1]	1	$1,345,000
Rescue[1]	1	$300,000
Type 3 Engine[1]	1	$430,000
SCBAs (Quint, Engine, Rescue)	10	$60,000
Type 1 Engine Radios	5	$35,000
Quint Radios	5	$35,000
Rescue Radios	5	$40,000
Total		$13,295,000

Source: Flagstaff Fire Department

1. Includes equipment

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(5) requires:

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

ARS § 9-463.05(E)(6) requires:

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

Facilities

Shown in Figure F8, Flagstaff's peak population is projected to increase by 13,412 persons by 2029, and employment is projected to increase by 3,270 jobs during the same period. Using the 2019 LOS, future residential development will demand 6,584 additional square feet of fire facilities (13,412 additional persons X 0.4909 square feet per person), and future nonresidential development will demand 1,356 additional square feet of fire facilities (3,270 additional jobs X 0.4146 square feet per job). Based on demand for 7,939 square feet of new fire facilities and an average cost of $514 per square foot, the growth-related expenditure on facilities is $4,076,760.

Figure F8: Projected Demand for Facilities

Type of Infrastructure	Level of Service	Demand Unit	Cost per Sq. Ft.
Facilities	0.4909 Square Feet	per Person	$514
	0.4146 Square Feet	per Job	

Demand for Facilities					
Year	Peak Population	Jobs	Residential	Nonresidential	Total
2019	75,756	44,172	37,185	18,315	55,500
2020	77,097	44,499	37,843	18,451	56,294
2021	78,438	44,826	38,502	18,586	57,088
2022	79,780	45,153	39,160	18,722	57,882
2023	81,121	45,480	39,818	18,857	58,676
2024	82,462	45,807	40,477	18,993	59,470
2025	83,803	46,134	41,135	19,128	60,263
2026	85,145	46,461	41,793	19,264	61,057
2027	86,486	46,788	42,452	19,400	61,851
2028	87,827	47,115	43,110	19,535	62,645
2029	89,168	47,441	43,769	19,671	63,439
10-Yr Increase	13,412	3,270	6,584	1,356	7,939

Growth-Related Expenditures	$3,380,637	$696,124	$4,076,760

Apparatus

Shown in Figure F9, peak population is projected to increase by 13,412 persons citywide by 2029, and citywide employment is projected to increase by 3,270 jobs during the same period. Using the 2019 LOS, future residential development generates demand for five additional apparatus (0.0004 units per person X 13,412 additional persons), and future nonresidential development generates demand for one additional apparatus (0.0003 units per job X 3,270 additional jobs). The 10-year demand for additional apparatus equals six units at a cost of $2,251,747.

Figure F9: Projected Demand for Apparatus

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Apparatus	0.0004 Units	per Person	$374,667
	0.0003 Units	per Job	

Demand for Apparatus					
Year	Peak Population	Jobs	Residential	Nonresidential	Total
2019	75,756	44,172	28.1	13.9	42.0
2020	77,097	44,499	28.6	14.0	42.6
2021	78,438	44,826	29.1	14.1	43.2
2022	79,780	45,153	29.6	14.2	43.8
2023	81,121	45,480	30.1	14.3	44.4
2024	82,462	45,807	30.6	14.4	45.0
2025	83,803	46,134	31.1	14.5	45.6
2026	85,145	46,461	31.6	14.6	46.2
2027	86,486	46,788	32.1	14.7	46.8
2028	87,827	47,115	32.6	14.8	47.4
2029	89,168	47,441	33.1	14.9	48.0
10-Yr Increase	13,412	3,270	5.0	1.0	6.0

Growth-Related Expenditures	$1,865,840	$385,907	$2,251,747

Communications Equipment

Shown in Figure F10, peak population is projected to increase by 13,412 persons citywide by 2029, and citywide employment is projected to increase by 3,270 jobs during the same period. Using the 2019 LOS, future residential development generates demand for 27.9 additional units (0.0021 units per person X 13,412 additional persons), and future nonresidential development generates demand for 5.7 additional units (0.0018 units per job X 3,270 additional jobs). The 10-year demand for additional communications equipment equals 33.6 units at a cost of $227,114.

Figure F10: Projected Demand for Communications Equipment

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Communications Equipment	0.0021 Units	per Person	$6,755
	0.0018 Units	per Job	

Demand for Communications Equipment					
Year	Peak Population	Jobs	Residential	Nonresidential	Total
2019	75,756	44,172	157.5	77.6	235.0
2020	77,097	44,499	160.2	78.1	238.4
2021	78,438	44,826	163.0	78.7	241.7
2022	79,780	45,153	165.8	79.3	245.1
2023	81,121	45,480	168.6	79.8	248.4
2024	82,462	45,807	171.4	80.4	251.8
2025	83,803	46,134	174.2	81.0	255.2
2026	85,145	46,461	177.0	81.6	258.5
2027	86,486	46,788	179.8	82.1	261.9
2028	87,827	47,115	182.5	82.7	265.3
2029	89,168	47,441	185.3	83.3	268.6
10-Yr Increase	13,412	3,270	27.9	5.7	33.6

Growth-Related Expenditures	$188,338	$38,776	$227,114

FIRE FACILITIES DEVELOPMENT FEES

Infrastructure components and cost factors for Fire Facilities are summarized in the upper portion of Figure F11. The cost per service unit for Fire Facilities is $407.51 per person and $346.87 per job.

Fire Facilities development fees for residential development are assessed according to the number of persons per household, based on unit type and number of bedrooms. For a single-family unit with three bedrooms, the fee of $1,071 is calculated using a cost per service unit of $407.51 per person multiplied by a demand unit of 2.63 persons per household.

Nonresidential development fees are calculated using jobs as the service unit. The fee of $0.81 per square foot of commercial development is derived from a cost per service unit of $346.87 per job, multiplied by a demand unit of 2.34 jobs per 1,000 square feet, divided by 1,000.

Figure F11: Schedule of Fire Facilities Development Fees

Fee Component	Cost per Person	Cost per Job
Facilities	$252.05	$212.91
Apparatus	$139.17	$117.56
Communications Equipment	$14.04	$11.86
Development Fee Report	$2.25	$4.54
Total	$407.51	$346.87

Residential Development	Fees per Unit			
Development Type	Persons per Household[1]	Proposed Fees	Current Fees	Change
Single-Family Units				
0-1 Bedrooms	1.91	$778	$366	$412
2 Bedrooms	2.19	$892	$366	$526
3 Bedrooms	2.63	$1,071	$366	$705
4+ Bedrooms	3.33	$1,357	$366	$991
Multi-Family Units				
0-1 Bedrooms	1.58	$643	$342	$301
2 Bedrooms	2.20	$896	$342	$554
3+ Bedrooms	3.32	$1,352	$342	$1,010

Nonresidential Development	Fees per Square Foot			
Development Type	Jobs per 1,000 Sq Ft[1]	Proposed Fees	Current Fees	Change
Industrial / Flex	1.16	$0.40	$0.08	$0.32
Commercial / Retail	2.34	$0.81	$0.59	$0.22
Office / Institutional	2.97	$1.03	$0.23	$0.80
Hotel (per room)	0.58	$202	N/A	N/A
Nursing Home (per bed)	1.05	$364	N/A	N/A
Assisted Living (per bed)	0.61	$212	N/A	N/A

1. See Land Use Assumptions

Fire Facilities Development Fee Revenue

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

Projected fee revenue shown in Figure F12 is based on the development projections in the *Land Use Assumptions* document and the updated Fire Facilities development fees. If development occurs faster than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs slower than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate. Projected development fee revenue is $6,578,077 over the next 10 years, and the projected growth-related cost of fire infrastructure is $6,578,121.

Figure F12: Projected Fire Facilities Development Fee Revenue

Fee Component	Growth Share	Existing Share	Total
Facilities	$4,076,760	$0	$4,076,760
Apparatus	$2,251,747	$0	$2,251,747
Communications Equipment	$227,114	$0	$227,114
Development Fee Report	$22,500	$0	$22,500
Total	$6,578,121	$0	$6,578,121

Year		Single Family $1,083 per unit	Multi-Family $868 per unit	Ind / Flex $0.40 per Sq Ft	Comm / Retail $0.81 per Sq Ft	Office / Inst $1.03 per Sq Ft
		Hsg Unit	Hsg Unit	KSF	KSF	KSF
Base	2019	14,441	12,565	4,987	7,360	5,344
Year 1	2020	14,705	12,865	4,992	7,434	5,394
Year 2	2021	14,969	13,165	4,997	7,508	5,444
Year 3	2022	15,233	13,465	5,002	7,582	5,494
Year 4	2023	15,497	13,765	5,007	7,655	5,544
Year 5	2024	15,761	14,065	5,012	7,729	5,594
Year 6	2025	16,025	14,365	5,017	7,803	5,644
Year 7	2026	16,289	14,665	5,022	7,877	5,694
Year 8	2027	16,553	14,965	5,027	7,950	5,744
Year 9	2028	16,817	15,265	5,032	8,024	5,794
Year 10	2029	17,081	15,565	5,037	8,098	5,844
10-Year Increase		2,640	3,000	50	737	500
Projected Revenue		$2,853,830	$2,596,829	$20,113	$595,457	$511,847

Projected Fee Revenue	$6,578,077
Total Expenditures	$6,578,121

POLICE FACILITIES IIP

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

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

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

Service Area

Flagstaff's Police Department strives to provide a uniform response time citywide. The service area for the Police 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. The Police Facilities IIP and development fees are assessed on both residential and nonresidential development based calls for service shown in Figure P1. Based on 2015-2018 calls for service data, residential development accounts for approximately 66 percent of demand for police services and nonresidential development is responsible for the remaining 34 percent.

Figure P1: Proportionate Share

Year	Residential	Nonresidential
2015	63%	37%
2016	72%	28%
2017	65%	35%
2018	64%	36%
Average	66%	34%

Source: Flagstaff Police Department

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 P2 displays the demand indicators for residential and nonresidential land uses. For residential development, the table displays the persons per household based on unit type and number of bedrooms. For nonresidential development, the table displays the number of vehicle trips generated per thousand square feet of floor area.

Figure P2: Ratio of Service Unit to Development Unit

Development Type	Persons per Household[1]
Single Family	
0-1 Bedrooms	1.91
2 Bedrooms	2.19
3 Bedrooms	2.63
4+ Bedrooms	3.33
Multi-Family	
0-1 Bedrooms	1.58
2 Bedrooms	2.20
3+ Bedrooms	3.32

Development Type	AWVTE per 1,000 Sq Ft[1]	Trip Adjustment	AWVT per 1,000 Sq Ft[1]
Industrial / Flex	3.37	50%	1.69
Commercial / Retail	37.75	33%	12.46
Office / Institutional	9.74	50%	4.87
Hotel (per room)	8.36	50%	4.18
Nursing Home (per bed)	3.06	50%	1.53
Assisted Living (per bed)	2.60	50%	1.30

1. See Land Use Assumptions

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

ARS § 9-463.05(E)(1) requires:

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

ARS § 9-463.05(E)(2) requires:

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

Facilities – Incremental Expansion

Flagstaff plans to use development fees to expand its current inventory of police facilities. Shown below in Figure P3, Flagstaff's existing police facilities include 43,172 square feet.

Calls for service provide the proportionate share of demand for police facilities from residential and nonresidential development. Flagstaff's existing level of service for residential development is 0.3761 square feet per person (43,172 square feet X 66 percent residential share / 75,756 persons). The nonresidential level of service is 0.1164 square feet per vehicle trip (43,172 square feet X 34 percent / 126,120 vehicle trips). Using estimates for the planned LEAF expansion, the cost is $375 per square foot ($3,000,000 / 8,000 square feet). The cost is $141.05 per person (0.3272 square feet per person X $375 per square foot) and $43.64 per vehicle trip (0.1323 square feet per vehicle trip X $375 per square foot).

Figure P3: Existing Facilities Level of Service

Description	Square Feet
LEAF Facility	31,148
Commerce Warehouse	9,000
Southside Substation	64
Sunnyside Substation	400
Pod Storage	2,560
Total	43,172

Cost Allocation Factors	
Cost per Square Foot	$375

Level-of-Service (LOS) Standards	
Existing Square Feet	43,172
Residential	
Residential Share	66%
2019 Peak Population	75,756
Square Feet per Person	0.3761
Cost per Person	$141.05
Nonresidential	
Nonresidential Share	34%
2019 Vehicle Trips	126,120
Square Feet per Vehicle Trip	0.1164
Cost per Vehicle Trip	$43.64

Source: Flagstaff Police Department

Vehicles – Incremental Expansion

Development fees will be used to expand Flagstaff's inventory of police vehicles. Figure P4 lists the current vehicles used by Flagstaff's Police Department – 91 units with a replacement cost of $4,491,898, or $49,362 per unit. Calls for service are used to allocate the proportionate share of demand to residential and nonresidential development. The level of service for residential development is 0.0008 units per person (91 units X 66 percent residential share / 75,756 persons). The nonresidential level of service is 0.0002 units per vehicle trip (91 units X 34 percent nonresidential share / 126,120 vehicle trips). The cost is $39.13 per person ($49,362 per unit X 0.0008 units per person) and $12.11 per vehicle trip ($49,362 per unit X 0.0002 units per vehicle trip).

Figure P4: Existing Vehicles Level of Service

Description	Units	Unit Cost[1]	Replacement Cost
Patrol Sedans	42	$60,000	$2,520,000
Patrol Motorcycles	6	$35,000	$210,000
Patrol Motorcycle Trainer	3	$11,480	$34,440
Patrol Truck 4X4	1	$28,594	$28,594
Prisoner Transport Van	1	$44,220	$44,220
Patrol Surveillance Van	1	$40,000	$40,000
Bomb Squad Vehicle	1	$176,028	$176,028
Bomb Squad Trailer	1	$85,038	$85,038
SWAT Armored Vehicle	1	$295,000	$295,000
DUI Van	1	$60,377	$60,377
Radar/Sign Board Trailer	3	$25,511	$76,533
Full Service Sedan	23	$29,000	$667,000
Street Crimes Task Force Vehicle	4	$36,779	$147,116
Utility Trailer	1	$3,720	$3,720
Animal Control Truck 4X4	2	$51,916	$103,832
Total	91	$49,362	$4,491,898

1. Includes the cost of equipment

Cost Allocation Factors	
Average Cost per Unit	$49,362

Level-of-Service (LOS) Standards	
Existing Units	91
Residential	
Residential Share	66%
2019 Peak Population	75,756
Units per Person	0.0008
Cost per Person	$39.13
Nonresidential	
Nonresidential Share	34%
2019 Vehicle Trips	126,120
Units per Vehicle Trip	0.0002
Cost per Vehicle Trip	$12.11

Source: Flagstaff Police Department

Communications Equipment – Incremental Expansion

Flagstaff will use development fees to expand its inventory of communications equipment. The current inventory includes 247 units with a total replacement cost of $2,257,500. The average cost for communications equipment is $9,140 per unit.

Calls for service are used to allocate the proportionate share of demand to residential and nonresidential development. Flagstaff's existing level of service for residential development is 0.0022 units per person (247 units X 66 percent residential share / 75,756 persons). The nonresidential level of service is 0.0007 units per vehicle trip (247 units X 34 percent nonresidential share / 126,120 vehicle trips). The cost is $19.67 per person ($9,140 per unit X 0.0022 units per person) and $6.09 per vehicle trip ($9,140 per unit X 0.0007 units per vehicle trip).

Figure P5: Existing Communications Equipment Level of Service

Description	Units	Unit Cost	Replacement Cost
Portable Radios 800mhz	154	$8,000	$1,232,000
Mobile Radios 800mhz/VHF	83	$8,500	$705,500
Dispatch Consoles	10	$32,000	$320,000
Total	247	$9,140	$2,257,500

Cost Allocation Factors	
Average Cost per Unit	$9,140

Level-of-Service (LOS) Standards	
Existing Units	247
Residential	
Residential Share	66%
2019 Peak Population	75,756
Units per Person	0.0022
Cost per Person	$19.67
Nonresidential	
Nonresidential Share	34%
2019 Vehicle Trips	126,120
Units per Vehicle Trip	0.0007
Cost per Vehicle Trip	$6.09

Source: Flagstaff Police Department

Development Fee Report – Plan-Based

The cost to prepare the Police Facilities IIP and related Development Fee Report totals $22,250. Flagstaff 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 $2.19 per person and $1.29 per vehicle trip.

Figure P6: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Demand Unit	5-Year Increase	Cost per Demand Unit
Fire	$22,500	Residential	67%	Peak Population	6,706	$2.25
		Nonresidential	33%	Jobs	1,635	$4.54
Police	$22,250	Residential	66%	Peak Population	6,706	$2.19
		Nonresidential	34%	Vehicle Trips	5,854	$1.29
Total	$44,750					

Police Facilities Infrastructure Improvements Plan

The Flagstaff Police Department identified necessary public services that are eligible for Police Facilities development fees. These improvements, shown in Figure P7, total $7,540,000 and a portion of this total can be funded with development fees.

Figure P7: Police Facilities Infrastructure Improvements Plan

Description	Units	Total Cost
Metal Building on Commerce Site		$3,000,000
Dispatch Expansion		$600,000
LEAF Expansion		$3,000,000
Patrol Vehicles	10	$600,000
Patrol Motorcycles	4	$140,000
Portable Radios 800mhz	25	$200,000
Mobile Radios 800mhz/VHF	10	$85,000
Dispatch Consoles	2	$64,000
Total		$7,540,000

Source: Flagstaff Police Department

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(5) requires:

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

ARS § 9-463.05(E)(6) requires:

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

Facilities

Over the next 10 years, Flagstaff's peak population is projected to increase by 13,412 persons and nonresidential vehicle trips are projected to increase by 11,707. Using the 2019 LOS standards shown at the top of Figure P8, future residential development generates demand for 5,045 additional square feet of police facilities (0.3761 square feet per person X 13,412 additional persons), and future nonresidential development generates demand for 1,363 additional square feet of police facilities (0.1164 square feet per vehicle trip X 11,707 additional vehicle trips). The 10-year demand for additional police facilities equals 6,407 square feet at a cost of $2,407,719.

Figure P8: Projected Demand for Facilities

Type of Infrastructure	Level of Service	Demand Unit	Cost per Sq. Ft.
Facilities	0.3761 Square Feet	per Person	$375
	0.1164 Square Feet	per Vehicle Trip	

Demand for Facilities					
Year	Peak Population	Vehicle Trips	Residential	Nonresidential	Total
2019	75,756	126,120	28,494	14,678	43,172
2020	77,097	127,290	28,998	14,815	43,813
2021	78,438	128,461	29,502	14,951	44,453
2022	79,780	129,632	30,007	15,087	45,094
2023	81,121	130,803	30,511	15,223	45,735
2024	82,462	131,973	31,016	15,360	46,376
2025	83,803	133,144	31,520	15,496	47,016
2026	85,145	134,315	32,025	15,632	47,657
2027	86,486	135,485	32,529	15,769	48,298
2028	87,827	136,656	33,034	15,905	48,939
2029	89,168	137,827	33,538	16,041	49,579
10-Yr Increase	13,412	11,707	5,045	1,363	6,407

Growth-Related Expenditures	$1,891,767	$510,952	$2,402,719

Vehicles

Shown in Figure P9, peak population is projected to increase by 13,12 persons by 2029, and nonresidential vehicle trips will increase by 11,707 trips during the same period. Using the 2019 LOS standards shown in Figure P9, future residential development generates demand for 10.6 additional units (0.0008 units per person X 13,412 additional persons), and future nonresidential development generates demand for 2.9 additional units (0.0002 units per vehicle trip X 11,707 additional vehicle trips). The 10-year demand for additional police vehicles equals 13.5 units at a cost of $666,652.

Figure P9: Projected Demand for Vehicles

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Vehicles	0.0008 Units	per Person	$49,362
	0.0002 Units	per Vehicle Trip	

Demand for Vehicles					
Year	Peak Population	Vehicle Trips	Residential	Nonresidential	Total
2019	75,756	126,120	60.1	30.9	91.0
2020	77,097	127,290	61.1	31.2	92.4
2021	78,438	128,461	62.2	31.5	93.7
2022	79,780	129,632	63.3	31.8	95.1
2023	81,121	130,803	64.3	32.1	96.4
2024	82,462	131,973	65.4	32.4	97.8
2025	83,803	133,144	66.4	32.7	99.1
2026	85,145	134,315	67.5	33.0	100.5
2027	86,486	135,485	68.6	33.2	101.8
2028	87,827	136,656	69.6	33.5	103.2
2029	89,168	137,827	70.7	33.8	104.5
10-Yr Increase	13,412	11,707	10.6	2.9	13.5

Growth-Related Expenditures	$524,885	$141,767	$666,652

Communications Equipment

Shown in Figure P10, peak population is projected to increase by 13,12 persons by 2029, and nonresidential vehicle trips will increase by 11,707 trips during the same period. Using the 2019 LOS standards shown in Figure P10, future residential development generates demand for 28.9 additional units (0.0022 units per person X 13,412 additional persons), and future nonresidential development generates demand for 7.8 additional units (0.0007 units per vehicle trip X 11,707 additional vehicle trips). The 10-year demand for additional communications equipment equals 36.7 units at a cost of $335,041.

Figure P10: Projected Demand for Communications Equipment

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Communications Equipment	0.0022 Units	per Person	$9,140
	0.0007 Units	per Vehicle Trip	

Demand for Communications Equipment					
Year	Peak Population	Vehicle Trips	Residential	Nonresidential	Total
2019	75,756	126,120	163.0	84.0	247.0
2020	77,097	127,290	165.9	84.8	250.7
2021	78,438	128,461	168.8	85.5	254.3
2022	79,780	129,632	171.7	86.3	258.0
2023	81,121	130,803	174.6	87.1	261.7
2024	82,462	131,973	177.5	87.9	265.3
2025	83,803	133,144	180.3	88.7	269.0
2026	85,145	134,315	183.2	89.4	272.7
2027	86,486	135,485	186.1	90.2	276.3
2028	87,827	136,656	189.0	91.0	280.0
2029	89,168	137,827	191.9	91.8	283.7
10-Yr Increase	13,412	11,707	28.9	7.8	36.7
Growth-Related Expenditures			$263,792	$71,248	$335,041

POLICE FACILITIES DEVELOPMENT FEES

Police Facilities Development Fees

Infrastructure components and cost factors for Police Facilities are summarized in the upper portion of Figure P11. The cost per service unit for Police Facilities is $202.04 per person and $63.13 per vehicle trip.

Police Facilities development fees for residential development are assessed according to the number of persons per household, based on unit type and number of bedrooms. For a single-family unit with three bedrooms, the fee of $531 is calculated using a cost per service unit of $202.04 per person multiplied by a demand unit of 2.63 persons per household.

Nonresidential development fees are calculated using vehicle trips as the service unit. The fee of $0.78 per square foot of commercial development is derived from a cost per service unit of $63.13 per vehicle trip, multiplied by a demand unit of 12.46 vehicle trips per 1,000 square feet, divided by 1,000.

Figure P11: Schedule of Police Facilities Development Fees

Fee Component	Cost per Person	Cost per Veh Trip
Facilities	$141.05	$43.64
Vehicles	$39.13	$12.11
Communications Equipment	$19.67	$6.09
Development Fee Report	$2.19	$1.29
Total	$202.04	$63.13

Residential Development	Fees per Unit			
Development Type	Persons per Household[1]	Proposed Fees	Current Fees	Change
Single-Family Units				
0-1 Bedrooms	1.91	$385	$182	$203
2 Bedrooms	2.19	$442	$182	$260
3 Bedrooms	2.63	$531	$182	$349
4+ Bedrooms	3.33	$672	$182	$490
Multi-Family Units				
0-1 Bedrooms	1.58	$319	$170	$149
2 Bedrooms	2.20	$444	$170	$274
3+ Bedrooms	3.32	$670	$170	$500

Nonresidential Development	Fees per Square Foot			
Development Type	AWVT per 1,000 Sq Ft[1]	Proposed Fees	Current Fees	Change
Industrial / Flex	1.69	$0.10	$0.03	$0.07
Commercial / Retail	12.46	$0.78	$0.29	$0.49
Office / Institutional	4.87	$0.30	$0.11	$0.19
Hotel (per room)	4.18	$263	N/A	N/A
Nursing Home (per bed)	1.53	$96	N/A	N/A
Assisted Living (per bed)	1.30	$82	N/A	N/A

1. See Land Use Assumptions

POLICE FACILITIES DEVELOPMENT FEE REVENUE

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

Projected fee revenue shown in Figure P12 is based on the development projections in the *Land Use Assumptions* document and the updated Police Facilities development fees. If development occurs faster than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs slower than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate. Projected development fee revenue is $3,426,662 over the next 10 years, and the projected growth-related cost of police infrastructure is $3,426,662.

Figure P12: Projected Revenue from Police Facilities Development Fees

Fee Component	Growth Share	Existing Share	Total
Facilities	$2,402,719	$0	$2,402,719
Vehicles	$666,652	$0	$666,652
Communications Equipment	$335,041	$0	$335,041
Development Fee Report	$22,250	$0	$22,250
Total	$3,426,662	$0	$3,426,662

Year		Single Family $537 per unit	Multi-Family $430 per unit	Ind / Flex $0.10 per Sq Ft	Comm / Retail $0.78 per Sq Ft	Office / Inst $0.30 per Sq Ft
		Hsg Unit	Hsg Unit	KSF	KSF	KSF
Base	2019	14,441	12,565	4,987	7,360	5,344
Year 1	2020	14,705	12,865	4,992	7,434	5,394
Year 2	2021	14,969	13,165	4,997	7,508	5,444
Year 3	2022	15,233	13,465	5,002	7,582	5,494
Year 4	2023	15,497	13,765	5,007	7,655	5,544
Year 5	2024	15,761	14,065	5,012	7,729	5,594
Year 6	2025	16,025	14,365	5,017	7,803	5,644
Year 7	2026	16,289	14,665	5,022	7,877	5,694
Year 8	2027	16,553	14,965	5,027	7,950	5,744
Year 9	2028	16,817	15,265	5,032	8,024	5,794
Year 10	2029	17,081	15,565	5,037	8,098	5,844
10-Year Increase		2,640	3,000	50	737	500
Projected Revenue		$1,411,103	$1,284,026	$5,307	$574,015	$152,211

Projected Fee Revenue	$3,426,662
Total Expenditures	$3,426,662

APPENDIX A: FORECAST OF REVENUES OTHER THAN FEES

ARS § 9-463.05(E)(7) requires:

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

ARS § 9-463.05(B)(12) states,

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

REVENUE PROJECTIONS

Flagstaff does not have a higher than normal construction excise tax rate; therefore, the required offset described above is not applicable. The required forecast of non-development fee revenue from identified sources that can be attributed to future development over the next 10 years is summarized below. These funds are available for capital investments; however, the City of Flagstaff directs these revenues to non-development fee eligible capital needs including maintenance, repair, and replacement.

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

Figure A1: Revenue Projections of Future Development

Revenue Source	2017	2018	2019	2020	2021	2022	2023	2024
Primary Property Taxes	$5,707,178	$6,171,607	$6,707,510	$6,776,500	$7,024,405	$7,287,311	$7,550,217	$7,813,122
Secondary Property Taxes	$5,879,357	$6,271,311	$6,733,265	$7,268,436	$7,358,820	$7,671,830	$7,984,840	$8,297,850
City Sales Tax	$19,226,470	$21,079,067	$21,493,997	$21,881,468	$23,011,773	$23,847,818	$24,683,863	$25,519,908
State Sales Tax	$6,445,302	$6,868,398	$7,100,000	$7,182,893	$7,492,603	$7,732,277	$7,971,950	$8,211,624
State Income Tax	$8,603,145	$8,850,877	$8,716,221	$9,451,184	$9,547,842	$9,818,552	$10,089,263	$10,359,974

Source: For 2017 - 2020, Flagstaff Budgets, FY2017 - FY2020; for 2021 - 2024, TischlerBise trend analysis.

The figure below includes per capita revenues for the previous three years and per capita revenue projections for the next five years – all per capita revenues are shown in 2019 dollars. As shown, the annual revenue generated over the next five years will remain relatively flat. These funds are available for capital investments; however, the City of Flagstaff directs these revenues to non-development fee eligible capital needs including maintenance, repair, and replacement.

Figure A2: Per Capita Revenue Projections, 2019 Dollars

Revenue Source	2017	2018	2019	2020	2021	2022	2023	2024
Primary Property Taxes	$51.19	$52.97	$55.93	$54.94	$55.57	$56.20	$56.84	$57.47
Secondary Property Taxes	$52.73	$53.82	$56.14	$55.59	$56.17	$56.76	$57.34	$57.93
City Sales Tax	$172.44	$180.91	$179.22	$183.41	$186.12	$188.83	$191.54	$194.25
State Sales Tax	$57.81	$58.95	$59.20	$59.68	$60.17	$60.66	$61.15	$61.64
State Income Tax	$77.16	$75.96	$72.68	$74.08	$73.79	$73.49	$73.19	$72.90
Total General Fund Revenues	$411.33	$422.60	$423.18	$427.69	$431.81	$435.94	$440.06	$444.19

Source: For 2017 - 2020, Flagstaff Budgets, FY2017 - FY2020 adjusted to 2019 dollars; for 2021 - 2024, TischlerBise trend analysis in 2019 dollars.
U.S. Department of Commerce, Bureau of Economic Analysis, GDP 2017 - 2019.

APPENDIX B: PROFESSIONAL SERVICES

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

Figure B1: Cost of Professional Services

Necessary Public Service	Cost	Proportionate Share		Demand Unit	5-Year Increase	Cost per Demand Unit
Fire	$22,500	Residential	67%	Peak Population	6,706	$2.25
		Nonresidential	33%	Jobs	1,635	$4.54
Police	$22,250	Residential	66%	Peak Population	6,706	$2.19
		Nonresidential	34%	Vehicle Trips	5,854	$1.29
Total	$44,750					

APPENDIX C: LAND USE ASSUMPTIONS

The estimates and projections of residential and nonresidential development in this *Land Use Assumptions* document are for areas within the boundaries of the City of Flagstaff. The map in Appendix E illustrates the area within the Flagstaff Development Fee Service Area.

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

> *"projections of changes in land uses, densities, intensities and population for a specified service area over a period of at least ten years and pursuant to the General Plan of the municipality."*

The City of Flagstaff, Arizona, retained TischlerBise to analyze the impacts of development on its capital facilities and to calculate development impact fees based on that analysis. TischlerBise prepared current demographic estimates and future development projections for both residential and nonresidential development used in the Infrastructure Improvements Plan (IIP) and calculation of the development fees. Current demographic data estimates for 2019 are used in calculating levels of service (LOS) provided to existing development in the City of Flagstaff. Arizona's Enabling Legislation requires fees to be updated at least every five years and limits the IIP to a maximum of 10 years.

SUMMARY OF GROWTH INDICATORS

Key land use assumptions for the City of Flagstaff development fee study are population, housing units, and employment projections. TischlerBise uses housing unit estimates provided by Flagstaff's Planning Department for the 2019 base year estimate. For 2019 population estimates, the analysis combines 2018 population estimates published by Arizona's Office of Economic Opportunity and converts 2018 housing unit increases to population using persons per household factors. For nonresidential development, the analysis adjusts 2018 Esri Business Analyst Online employment estimates to the 2019 base year using Coconino County Tax Assessor data. The 2010-2018 average annual nonresidential floor area growth by industry sector, according to Coconino County Tax Assessor data, provides the nonresidential floor area projection for each year beyond the 2019 base year. The nonresidential floor area projections are converted into jobs based on floor area ratios published by the Institute of Transportation Engineers. Three nonresidential development prototypes are discussed further below (see Figure C6 and related text). The projections contained in this document provide the foundation for the Development Fee Report. These metrics are the service units and demand indicators used in the Development Fee Report.

Development projections are summarized in Figure C13. These projections will be used to estimate development fee revenue and to indicate the anticipated need for growth-related infrastructure. However, development fee methodologies are designed to reduce sensitivity to development projections in the determination of the proportionate share fee amounts. If actual development is slower than projected, fee revenue will decline, but so will the need for growth-related infrastructure. In contrast, if development is faster than anticipated, Flagstaff will receive an increase in fee revenue, but will also need to accelerate infrastructure improvements to keep pace with the actual rate of development.

During the next 10 years, citywide development projections indicate an average increase of approximately 560 housing units per year and approximately 130,000 square feet of nonresidential floor area per year.

RESIDENTIAL DEVELOPMENT

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

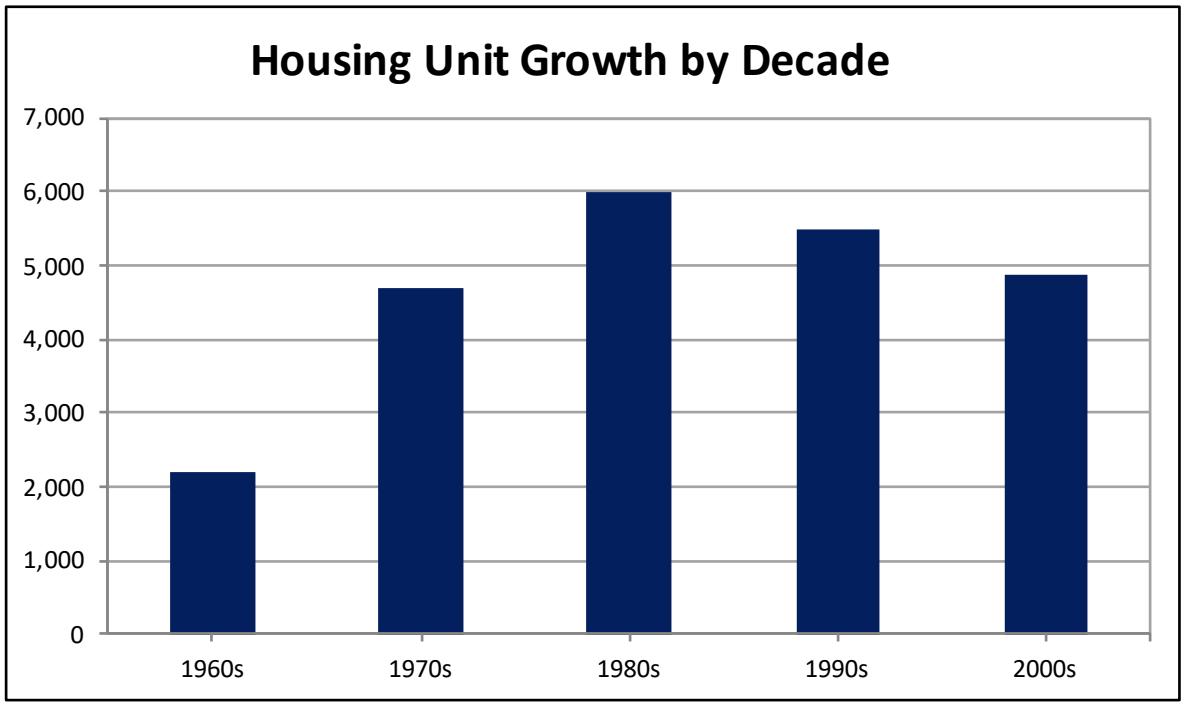
Recent Residential Construction

Development fees require an analysis of current levels of service. For residential development, current levels of service are determined using estimates of population and housing units. Shown below, Figure C1 indicates the estimated number of housing units added by decade according to data obtained from the U.S. Census Bureau. Flagstaff experienced strong growth in the 1980s and 1990s. From 2000 to 2010, housing inventory increased by an average of 486 units per year.

Figure C1: Housing Units by Decade

Census 2010 Housing Units	26,254
Census 2000 Housing Units	21,396
New Housing Units 2000 to 2010	4,858

Flagstaff's housing stock grew by an average of 486 housing units per year from 2000 to 2010.



Source: U.S. Census Bureau, Census 2010 Summary File 1, Census 2000 Summary File 1, 2013-2017 5-Year American Community Survey (for 1990s and earlier, adjusted to yield total units in 2000).

Household Size

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

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

Based on American Community Survey 2013-2017 5-Year Estimates, single-family units average 2.66 persons per household and multi-family units average 2.13 persons per household.

Figure C2: Persons per Household

Housing Type	Persons	Households	Persons per Household	Housing Units	Persons per Housing Unit	Housing Mix	Vacancy Rate
Single-Family Units[1]	40,421	15,188	2.66	17,230	2.35	63.7%	11.90%
Multi-Family Units[2]	18,033	8,477	2.13	9,826	1.84	36.3%	13.70%
Total	58,454	23,665	2.47	27,056	2.16	100.0%	12.50%

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates, Tables B25024, B25032, B25033.

1. Includes detached, attached (i.e. townhouses), and mobile home units.

2. Includes dwellings in structures with two or more units.

Occupancy by Unit Type and Bedrooms

Development fees must be proportionate to the demand for infrastructure. Because occupancy per housing unit has a strong, positive correlation to the number of bedrooms, TischlerBise recommends residential fee schedules that increase by unit size. Custom tabulations of demographic data by bedroom range can be created from individual survey responses provided by the U.S. Census Bureau in files known as Public Use Microdata Samples (PUMS). PUMS files are only available for areas of at least 100,000 persons with Flagstaff included in Public Use Microdata Area (PUMA) 0400.

Single-Family Occupancy by Bedroom Range

Cells shaded yellow below are single-family unit survey results for PUMA 0400. Unadjusted persons per household factors, derived from PUMS data for the PUMA listed above, are adjusted downward to match the single-family unit control total for Flagstaff (2.66), as shown in Figure C3. Adjusted persons per household factors for single-family units are shaded in gray and range from 1.91 persons per household for units with less than two bedrooms to 3.33 persons per household for units with four or more bedrooms.

Figure C3: Single-Family Unit Occupancy by Bedroom Range

Bedroom Range	Persons[1]	Households[1]	Unadjusted PPH	Adjusted PPH[2]
0-1	4,959	2,460	2.02	1.91
2	17,810	7,716	2.31	2.19
3	51,778	18,672	2.77	2.63
4+	31,227	8,905	3.51	3.33
Total	105,774	37,753	2.80	2.66

1. American Community Survey, Public Use Microdata Sample for AZ PUMA 0400 (2013-2017 5-Year Estimates).
2. Adjusted multipliers are scaled to make the average PUMS values match single-family control totals for Flagstaff (2.66), based on American Community Survey 2013-2017 5-Year Estimates.

Multi-Family Occupancy by Bedroom Range

Cells shaded yellow below are multi-family unit survey results for PUMA 0400. Unadjusted persons per household factors, derived from PUMS data for the PUMA listed above, are adjusted downward to match the multi-family unit control total for Flagstaff (2.13), as shown in Figure C4. Adjusted persons per household factors for multi-family units are shaded in gray and range from 1.58 persons per household for units with less than two bedrooms to 3.32 persons per household for units with three or more bedrooms.

Figure C4: Multi-Family Unit Occupancy by Bedroom Range

Bedroom Range	Persons[1]	Households[1]	Unadjusted PPH	Adjusted PPH[2]
0-1	5,669	3,721	1.52	1.58
2	9,912	4,671	2.12	2.20
3+	4,622	1,443	3.20	3.32
Total	20,203	9,835	2.05	2.13

1. American Community Survey, Public Use Microdata Sample for AZ PUMA 0400 (2013-2017 5-Year Estimates).
2. Adjusted multipliers are scaled to make the average PUMS values match multi-family control totals for Flagstaff (2.13), based on American Community Survey 2013-2017 5-Year Estimates.

Residential Estimates

Flagstaff's Planning Department estimates there were 14,441 single-family housing units and 12,565 multi-family housing units in 2019. To estimate the 2019 population, the analysis first uses the 2018 Arizona Office of Economic Opportunity population estimate of 74,736 persons. Next, TischlerBise applies occupancy factors shown in Figure C2 to 2018 residential building permit data – 377 single-family permits and eight multi-family permits. This results in a 2019 population estimate of 75,756 (74,736 population in 2018 + (377 single-family units X 2.66 persons per household) + (8 multi-family units X 2.13 persons per household) = 75,756 population in 2019).

Residential Projections

Based on single-family residential permits from 2015 through 2018, the analysis projects single-family housing units at 264 units per year. For multi-family housing units, Flagstaff's Planning Department recommends 300 housing units per year – slightly more than the 2015 through 2018 average of 228 per year. To project population, TischlerBise applies occupancy factors shown in Figure C2 to projected housing units. For this study, it is assumed that the household size will remain constant. Based on a 10-year housing unit increase of 2,640 single-family units and 3,000 multi-family units, the associated 10-year population growth equals 13,412 persons ((2,640 single-family units X 2.66 persons per household) + (3,000 multi-family units X 2.13 persons per household)).

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

Figure C5: Residential Development Projections

	2019	2020	2021	2022	2023	2024	2029	10-Year
	Base Year	1	2	3	4	5	10	Increase
Population	**75,756**	**77,097**	**78,438**	**79,780**	**81,121**	**82,462**	**89,168**	**13,412**
Housing Units								
Single Family	14,441	14,705	14,969	15,233	15,497	15,761	17,081	**2,640**
Multi-Family	12,565	12,865	13,165	13,465	13,765	14,065	15,565	**3,000**
Total Housing Units	**27,006**	**27,570**	**28,134**	**28,698**	**29,262**	**29,826**	**32,646**	**5,640**

NONRESIDENTIAL DEVELOPMENT

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

Nonresidential Estimates

In addition to data on residential development, the calculation of development fees requires data on employment (number of jobs) and nonresidential square footage in Flagstaff. TischlerBise uses the term "jobs" to refer to employment by place of work. TischlerBise uses Esri Business Analyst Online for 2018 employment estimates and Coconino County Tax Assessor data for 2018 floor area estimates.

Figure C6: 2018 Employment and Floor Area Estimates

Nonresidential Category	2018 Jobs[1]	Percent of Total Jobs	Square Feet per Job	2018 Estimated Floor Area[2]	Jobs per 1,000 Sq. Ft.
Industrial / Flex[3]	5,352	12%	931	4,981,849	1.07
Commercial / Retail[4]	13,949	32%	522	7,286,729	1.91
Office / Institutional[5]	24,544	56%	216	5,293,656	4.64
Total	43,845	100%		17,562,234	

1. Esri Business Analyst Online, Business Summary (2018)
2. Coconino County Tax Assessor
3. Major sectors are Wholesale Trade and Manufacturing
4. Major sectors are Retail Trade and Food Services
5. Major sectors are Health Care and Public Administration

Based on Coconino County Tax Assessor data from 2010 through 2018, industrial development grew by 5,040 square feet per year, commercial/retail development grew by 73,741 square feet per year, office development grew by 12,676 square feet per year, and institutional development grew by 37,343 square feet per year. To estimate floor area in 2019, TischlerBise adds the average annual floor area increase to the 2018 floor area estimates in Figure C6. For 2019, TischlerBise estimates Flagstaff has approximately 17.69 million square feet of nonresidential floor area and 44,172 jobs.

Figure C7: 2019 Employment and Floor Area Estimates

Nonresidential Category	2019 Jobs[1]	Percent of Total Jobs	Square Feet per Job	2019 Estimated Floor Area[2]	Jobs per 1,000 Sq. Ft.
Industrial / Flex[3]	5,358	12%	931	4,986,889	1.07
Commercial / Retail[4]	14,122	32%	521	7,360,470	1.92
Office / Institutional[5]	24,692	56%	216	5,343,675	4.62
Total	44,172	100%		17,691,034	2.50

1. TischlerBise calculation based on 2018 Esri Business Analyst Online estimates
2. TischlerBise calculation based on Coconino County Tax Assessor data
3. Major sectors are Wholesale Trade and Manufacturing
4. Major sectors are Retail Trade and Food Services
5. Major sectors are Health Care and Public Administration

Nonresidential Square Footage Estimates

TischlerBise uses 2017 Institute of Transportation Engineers (ITE) employment multipliers as a proxy for future nonresidential floor area (Figure C8). The prototype for industrial development is industrial park (ITE 130) with an average of 864 square feet per employee. For commercial development, a shopping center (ITE 820) is a reasonable proxy with 427 square feet per employee. The prototype for office / institutional development is general office (ITE 710) with an average of 337 square feet per job.

Figure C8: Institute of Transportation Engineers, Employee and Building Area Ratios

ITE Code	Land Use / Size	Demand Unit	Wkdy Trip Ends Per Dmd Unit[1]	Wkdy Trip Ends Per Employee[1]	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
254	Assisted Living	bed	2.60	4.24	0.61	na
310	Hotel	room	8.36	14.34	0.58	na
520	Elementary School	1,000 Sq Ft	19.52	21.00	0.93	1,076
530	High School	1,000 Sq Ft	14.07	22.25	0.63	1,581
565	Day Care	student	4.09	21.38	0.19	na
610	Hospital	1,000 Sq Ft	10.72	3.79	2.83	354
620	Nursing Home	bed	3.06	2.91	1.05	na
710	General Office (average size)	1,000 Sq Ft	9.74	3.28	2.97	337
715	Single Tenant Office	1,000 Sq Ft	11.25	3.77	2.98	335
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
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).

Nonresidential Projections

Future nonresidential development is projected based on 2010 through 2018 Coconino County Tax Assessor data. For each year beyond the 2019 base year, industrial development increases by 5,040 square feet per year, commercial/retail development increases by 73,741 square feet per year, office development increases by 12,676 square feet per year, and institutional development increases by 37,343 square feet per year.

To project employment, TischlerBise applies employment multipliers shown in Figure C8 to the projected floor area. For example, the industrial floor area increase of 5,040 square feet per year results in an employment increase of approximately six industrial jobs per year (5,040 square feet / 864 square feet per employee). Over the next 10 years, Flagstaff is projected to gain 3,270 jobs and 1.29 million square feet of nonresidential floor area.

Figure C9: Nonresidential Development Projections

	2019	2020	2021	2022	2023	2024	2029	10-Year
	Base Year	1	2	3	4	5	10	Increase
Employment								
Industrial / Flex	5,358	5,364	5,370	5,375	5,381	5,387	5,416	**58**
Commercial / Retail	14,122	14,294	14,467	14,640	14,812	14,985	15,849	**1,727**
Office / Institutional	24,692	24,841	24,989	25,138	25,286	25,435	26,177	**1,484**
Total Employment	**44,172**	**44,499**	**44,826**	**45,153**	**45,480**	**45,807**	**47,441**	**3,270**
Nonres. Floor Area (x1,000)								
Industrial / Flex	4,987	4,992	4,997	5,002	5,007	5,012	5,037	**50**
Commercial / Retail	7,360	7,434	7,508	7,582	7,655	7,729	8,098	**737**
Office / Institutional	5,344	5,394	5,444	5,494	5,544	5,594	5,844	**500**
Total Nonres. Floor Area	**17,691**	**17,820**	**17,949**	**18,077**	**18,206**	**18,335**	**18,979**	**1,288**

AVERAGE WEEKDAY VEHICLE TRIPS

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

Trip Rate Adjustments

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

Commuter Trip Adjustment

Residential development has a larger trip adjustment factor of 55 percent to account for commuters leaving Flagstaff for work. According to the 2009 National Household Travel Survey (see Table 30) weekday work trips are typically 31 percent of production trips (i.e., all out-bound trips, which are 50 percent of all trip ends). As shown in Figure C10, the U.S. Census Bureau's OnTheMap web application indicates that 35 percent of resident workers traveled outside of Flagstaff for work in 2015. In combination, these factors (0.31 x 0.50 x 0.35 = 0.05) support the additional five percent allocation of trips to residential development.

Figure C10: Commuter Trip Adjustment

Trip Adjustment Factor for Commuters[1]	
Employed Residents	30,459
Residents Living and Working in Flagstaff	19,842
Residents Commuting Outside Flagstaff for Work	10,617
Percent Commuting out of Flagstaff	35%
Additional Production Trips[2]	5%
Residential Trip Adjustment Factor	55%

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 35 percent of Flagstaff's workers travel outside the city for work. In combination, these factors (0.3099 x 0.50 x 0.35 = 0.05) account for 5 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 (5 percent of production trips) for a total of 55 percent.
*http://nhts.ornl.gov/publications.shtml ; Summary of Travel Trends - Table "Daily Travel Statistics by Weekday vs. Weekend"

Adjustment for Pass-By Trips

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

Nonresidential Vehicle Trips Ends

ITE publishes national average weekday trip generation rates for many types of development. For industrial / flex development, industrial park (ITE 130) is the prototype for future development, generating 3.37 trip ends per 1,000 square feet on an average weekday. For future commercial / retail development, an average size shopping center (ITE 820) is a reasonable proxy with 37.75 trip ends per 1,000 square feet. For future office / institutional development, an general office (ITE 710) is a reasonable proxy with 9.74 trip ends per 1,000 square feet.

Figure A11: Institute of Transportation Engineers, Average Weekday Vehicle Trip Ends

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
254	Assisted Living	bed	2.60	4.24	0.61	na
310	Hotel	room	8.36	14.34	0.58	na
520	Elementary School	1,000 Sq Ft	19.52	21.00	0.93	1,076
530	High School	1,000 Sq Ft	14.07	22.25	0.63	1,581
565	Day Care	student	4.09	21.38	0.19	na
610	Hospital	1,000 Sq Ft	10.72	3.79	2.83	354
620	Nursing Home	bed	3.06	2.91	1.05	na
710	General Office (average size)	1,000 Sq Ft	9.74	3.28	2.97	337
715	Single Tenant Office	1,000 Sq Ft	11.25	3.77	2.98	335
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
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).

Residential Vehicle Trip Ends

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

FUNCTIONAL POPULATION

TischlerBise recommends functional population to allocate the cost of certain facilities to residential and nonresidential development. As shown in Figure C12, functional population accounts for people living and working in a jurisdiction. OnTheMap is a web-based mapping and reporting application that shows where workers are employed and where they live. It describes geographic patterns of jobs by their employment locations and residential locations as well as the connections between the two locations. OnTheMap was developed through a unique partnership between the U.S. Census Bureau and its Local Employment Dynamics (LED) partner states.

Residents who do not work are assigned 20 hours per day to residential development and four hours per day to nonresidential development (annualized averages). Residents who work in Flagstaff are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents who work outside Flagstaff are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2015 functional population data for Flagstaff, residential development accounts for 67 percent of functional population while nonresidential development accounts for the remaining 33 percent.

Figure C12: Functional Population

Demand Units in 2015					
Residential				Demand Hours/Day	Person Hours
Population	59,640				
Residents Not Working		29,181		20	583,628
Employed Residents		30,459			
Employed in Flagstaff			19,842	14	277,788
Employed outside Flagstaff			10,617	14	148,638
				Residential Subtotal	1,010,054
				Residential Share	67%
Nonresidential					
Non-working Residents		29,181		4	116,726
Jobs Located in Flagstaff		37,109			
Residents Employed in Flagstaff			19,842	10	198,420
Non-Resident Workers (inflow commuters)			17,267	10	172,670
				Nonresidential Subtotal	487,816
				Nonresidential Share	33%
				Total	1,497,870

Source: U.S. Census Bureau, OnTheMap 6.1.1 Application and LEHD Origin-Destination Employment Statistics.

DEVELOPMENT PROJECTIONS

Provided below is a summary of citywide development projections used in the development fee study. Base year estimates for 2019 are used in the development fee calculations. Development projections are used to illustrate a possible future pace of demand for service units and cash flows resulting from revenues and expenditures associated with those demands.

Figure C13: Development Projections Summary

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	10-Year
	Base Year	1	2	3	4	5	6	7	8	9	10	Increase
Population	**75,756**	**77,097**	**78,438**	**79,780**	**81,121**	**82,462**	**83,803**	**85,145**	**86,486**	**87,827**	**89,168**	**13,412**
Housing Units												
Single Family	14,441	14,705	14,969	15,233	15,497	15,761	16,025	16,289	16,553	16,817	17,081	**2,640**
Multi-Family	12,565	12,865	13,165	13,465	13,765	14,065	14,365	14,665	14,965	15,265	15,565	**3,000**
Total Housing Units	**27,006**	**27,570**	**28,134**	**28,698**	**29,262**	**29,826**	**30,390**	**30,954**	**31,518**	**32,082**	**32,646**	**5,640**
Employment												
Industrial / Flex	5,358	5,364	5,370	5,375	5,381	5,387	5,393	5,399	5,405	5,410	5,416	**58**
Commercial / Retail	14,122	14,294	14,467	14,640	14,812	14,985	15,158	15,331	15,503	15,676	15,849	**1,727**
Office / Institutional	24,692	24,841	24,989	25,138	25,286	25,435	25,583	25,731	25,880	26,028	26,177	**1,484**
Total Employment	**44,172**	**44,499**	**44,826**	**45,153**	**45,480**	**45,807**	**46,134**	**46,461**	**46,788**	**47,115**	**47,441**	**3,270**
Nonres. Floor Area (x1,000)												
Industrial / Flex	4,987	4,992	4,997	5,002	5,007	5,012	5,017	5,022	5,027	5,032	5,037	**50**
Commercial / Retail	7,360	7,434	7,508	7,582	7,655	7,729	7,803	7,877	7,950	8,024	8,098	**737**
Office / Institutional	5,344	5,394	5,444	5,494	5,544	5,594	5,644	5,694	5,744	5,794	5,844	**500**
Total Nonres. Floor Area	**17,691**	**17,820**	**17,949**	**18,077**	**18,206**	**18,335**	**18,464**	**18,593**	**18,721**	**18,850**	**18,979**	**1,288**

APPENDIX D: LAND USE DEFINITIONS

RESIDENTIAL DEVELOPMENT

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

Single-Family Units:

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

Multi-Family Units:

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

NONRESIDENTIAL DEVELOPMENT

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

Assisted Living: An assisted living complex is a residential setting that provides either routine general protective oversight or assistance with activities necessary for independent living to mentally or physically limited persons. It commonly has separate living quarters for residents. Its services typically include dining, housekeeping, social and physical activities, medication administration, and transportation.

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

Hotel: A hotel is a place of lodging that provides sleeping accommodations and supporting facilities such as restaurants, cocktail lounges, meeting and banquet rooms or convention facilities, limited recreational facilities (pool, fitness room), and/or other retail and service shops.

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

Nursing Home: A nursing home is any facility whose primary function is to provide care for persons who are unable to care for themselves. Examples of such facilities include rest homes and chronic care and convalescent homes. Skilled nurses and nursing aides are present 24 hours a day at these sites.

Office / Institutional: Establishments providing management, administrative, professional, or business services, personal and health care services, public and quasi-public buildings providing educational, social assistance, or religious services. By way of example, *Office / Institutional* includes banks, business offices, hospitals, medical offices, veterinarian clinics, schools, universities, churches, daycare facilities, and government buildings.

APPENDIX E: DEVELOPMENT FEE SERVICE AREA MAP