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

Prepared for:

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EXECUTIVE SUMMARY

The City of Kingman, 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 Kingman 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 Kingman's Infrastructure Improvements Plan and associated update to its development fees includes the following necessary public services:

1. Fire Facilities
2. Parks and Recreational Facilities
3. Police Facilities
4. Street 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 methodology has advantages and disadvantages in a particular situation and can be used simultaneously for different cost components.

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

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

DEVELOPMENT FEE COMPONENTS

Figure 1 summarizes service areas, methodologies, and infrastructure cost components for each necessary public service.

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

Necessary Public Service	Service Area	Cost Recovery	Incremental Expansion	Plan-Based	Cost Allocation
Fire	Kingman	N/A	Facilities, Apparatus, Communications Equipment	Development Fee Report	Population, Jobs
Parks and Recreational	Kingman	N/A	Park Land, Improved Park Land, Park Amenities	Development Fee Report	Population, Jobs
Police	Kingman	N/A	Facilities, Vehicles, Communications Equipment	Development Fee Report	Population, Vehicle Trips
Street	Kingman	N/A	Arterials, Improved Intersections	Development Fee Report	Vehicle Miles Traveled

Proposed Development Fees

Development fees for residential development will be assessed per dwelling unit, based on the type of unit. Nonresidential development fees will be assessed per square foot of floor area, based on four general development types. Kingman will assess development fees on hotel development based on the number of rooms, and it will assess development on assisted living development based on the number of beds.

Fees shown below represent the maximum allowable fees. Kingman 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 Kingman'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.

Proposed Development Fees

Residential Development	Fees per Unit				
Development Type	Fire	Parks & Recreational	Police	Street	Total
Single Family	$893	$1,535	$413	$2,533	$5,374
Multi-Family	$577	$991	$267	$1,494	$3,329
Mobile Home	$547	$940	$253	$1,626	$3,366
All Other	$372	$640	$172	$1,105	$2,289

Nonresidential Development	Fees per Square Foot				
Development Type	Fire	Parks & Recreational	Police	Street	Total
Industrial	$0.08	$0.14	$0.12	$0.78	$1.12
Commercial	$0.11	$0.21	$0.62	$4.00	$4.94
Office & Other Services	$0.14	$0.26	$0.24	$1.52	$2.16
Institutional	$0.13	$0.25	$0.18	$1.11	$1.67
Hotel (per room)	$27	$51	$207	$1,342	$1,627
Assited Living (per bed)	$28	$54	$65	$407	$554

Current Development Fees

Kingman does not currently assesses development fees for the following necessary public service: Fire Facilities, Parks and Recreational Facilities, Police Facilities, and Street Facilities.

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 firefighters or officers from more than one station or substation."*

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

Proportionate Share

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Fire Facilities IIP and development fees allocate the cost of necessary public services between residential and nonresidential based on calls for service from 2016 through 2018. As shown below, residential development generates 94 percent of demand for fire services and nonresidential development generates the remaining six percent of demand.

Figure F1: Proportionate Share

Development Type	2016	2017	2018	Total
Residential	5,832	5,996	6,301	94%
Nonresidential	388	411	426	6%
Total	6,220	6,407	6,727	100%

Source: Kingman Fire Department

Service Area

Kingman's Fire Department strives to provide a uniform response time within the city limits; therefore, there is a single service area for the Fire Facilities IIP.

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 the number of persons per housing unit. For nonresidential development, the table displays the number of employees per thousand square feet of floor area.

Figure F2: Ratio of Service Unit to Development Unit

Residential Development	
Development Type	Persons per Housing Unit[1]
Single Family	2.40
Multi-Family	1.55
Mobile Home	1.47
All Other	1.00

Nonresidential Development	
Development Type	Jobs per 1,000 Sq Ft[1]
Industrial	1.63
Commercial	2.34
Office & Other Services	2.97
Institutional	2.83
Hotel (per room)	0.58
Assited 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."*

Fire Facilities – Incremental Expansion

The City of Kingman has four fire stations with a combined floor area of 16,200 square feet, and the City plans to construct additional fire facilities to serve future development. To allocate the proportionate share of demand for fire facilities to residential and nonresidential development, this analysis uses calls for service outlined in Figure F1. Kingman's existing level of service for residential development is 0.4970 square feet per person (16,200 square feet X 94 percent residential share / 30,531 persons). The nonresidential level of service is 0.0612 square feet per job (16,200 square feet X six percent nonresidential share / 16,769 jobs).

Based on estimates provided by Kingman, the construction cost for a new fire facility is $400 per square foot ($6,000,000 construction cost / 15,000 square feet). Although the analysis uses a specific project to determine the construction cost per square foot, this is used as a proxy for all fire facility costs. Kingman may choose to expand existing fire facilities or construct a new fire facility other than the planned fire facility used in the analysis. For fire facilities, the cost is $198.81 per person (0.4970 square feet per person X $400 per square foot) and $24.46 per job (0.0612 square feet per job X $400 per square foot).

Figure F3: Fire Facilities Level of Service

Description	Square Feet
Fire Station 21	3,900
Fire Station 22	3,900
Fire Station 23	4,900
Fire Station 24	3,500
Total	16,200

Cost Factors	
Planned Fire Station Cost	$6,000,000
Planned Fire Station Square Feet	15,000
Cost per Square Foot	$400

Level-of-Service (LOS) Standards	
Existing Square Feet	16,200
Residential	
Residential Share	94%
2020 Population	30,531
Square Feet per Person	0.4970
Cost per Person	$198.81
Nonresidential	
Nonresidential Share	6%
2020 Jobs	16,769
Square Feet per Job	0.0612
Cost per Job	$24.46

Source: Kingman Fire Department

Fire Apparatus – Incremental Expansion

The City of Kingman has eight fire apparatus with a total cost of $5,360,000, and the City plans to acquire additional fire apparatus to serve future development. To allocate the proportionate share of demand for fire apparatus to residential and nonresidential development, this analysis uses calls for service outlined in Figure F1. Kingman's existing level of service for residential development is 0.00025 units per person (eight units X 94 percent residential share / 30,531 persons). The nonresidential level of service is 0.00003 units per job (eight units X six percent nonresidential share / 16,769 jobs).

Based on the total cost of Kingman's existing fire apparatus, the weighted average cost for a new fire apparatus is $670,000 per unit ($5,360,000 total cost / eight apparatus). Kingman may use development fees to acquire additional fire apparatus similar to its existing inventory. For fire apparatus, the cost is $164.45 per person (0.00025 units per person X $670,000 per unit) and $20.23 per job (0.00003 units per job X $670,000 per unit).

Figure F4: Fire Apparatus Level of Service

Description	Units	Unit Cost	Total Cost
Type 1	4	$750,000	$3,000,000
Quint	1	$1,360,000	$1,360,000
Medical Rescue	1	$700,000	$700,000
Brush Truck	1	$175,000	$175,000
Staff Vehicle	1	$125,000	$125,000
Total	8	$670,000	$5,360,000

Cost Factors	
Weighted Average per Apparatus	$670,000

Level-of-Service (LOS) Standards	
Existing Apparatus	8
Residential	
Residential Share	94%
2020 Population	30,531
Units per Person	0.00025
Cost per Person	$164.45
Nonresidential	
Nonresidential Share	6%
2020 Jobs	16,769
Units per Job	0.00003
Cost per Job	$20.23

Source: Kingman Fire Department

Fire Communications Equipment – Incremental Expansion

The City of Kingman has 38 units of fire communications equipment with a total cost of $166,000, and the City plans to acquire additional fire communications equipment to serve future development. To allocate the proportionate share of demand for fire communications equipment to residential and nonresidential development, this analysis uses calls for service outlined in Figure F1. Kingman's existing level of service for residential development is 0.0012 units per person (38 units X 94 percent residential share / 30,531 persons). The nonresidential level of service is 0.0001 units per job (38 units X six percent nonresidential share / 16,769 jobs).

Based on the total cost of Kingman's existing fire communications equipment, the weighted average cost for new fire communications equipment is $4,368 per unit ($166,000 total cost / 38 units). Kingman may use development fees to acquire additional fire communications equipment similar to its existing inventory. For fire communications equipment, the cost is $5.09 per person (0.0012 units per person X $4,368 per unit) and $0.63 per job (0.0001 units per job X $4,368 per unit).

Figure F5: Fire Communications Equipment Level of Service

Description	Units	Unit Cost	Total Cost
Portable radios	20	$5,000	$100,000
Mobile Data Terminals	10	$5,000	$50,000
ePCR (IPADS)	8	$2,000	$16,000
Total	38	$4,368	$166,000

Cost Factors	
Weighted Average per Unit	$4,368

Level-of-Service (LOS) Standards	
Existing Communications Equipment	38
Residential	
Residential Share	94%
2020 Population	30,531
Units per Person	0.0012
Cost per Person	$5.09
Nonresidential	
Nonresidential Share	6%
2020 Jobs	16,769
Units per Job	0.0001
Cost per Job	$0.63

Source: Kingman Fire Department

Development Fee Report – Plan-Based

The cost to prepare the Fire Facilities IIP and related Development Fee Report totals $12,100. Kingman plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of future development from the *Land Use Assumptions* document, the cost is $3.78 per person and $1.31 per job.

Figure F6: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Fire	$12,100	Residential	94%	Population	2,998	$3.78
		Nonresidential	6%	Jobs	583	$1.31

Projected Demand for Services and Costs

ARS § 9-463.05(E)(5) requires:

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

ARS § 9-463.05(E)(6) requires:

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

As shown in the *Land Use Assumptions* document, Kingman's population is expected to increase by 5,996 persons and employment is expected to increase by 1,166 jobs over the next 10 years. To maintain the existing levels of service, Kingman will need to construct approximately 3,052 square feet of fire facilities, acquire approximately 1.5 fire apparatus, and acquire approximately 7.2 units of fire communications equipment over the next 10 years. The following pages include a more detailed projection of demand for services and costs for the Fire Facilities IIP.

Fire Facilities – Incremental Expansion

Kingman plans to maintain its existing level of service for fire facilities over the next 10 years. Based on a projected population increase of 5,996 persons, future residential development demands an additional 2,980.2 square feet of fire facilities (5,996 additional persons X 0.4970 square feet per person). With projected employment growth of 1,166 jobs, future nonresidential development demands an additional 71.3 square feet of fire facilities (1,166 additional jobs X 0.0612 square feet per job). Future development demands approximately 3,051.5 additional square feet of fire facilities at a cost of $1,220,597 (3,051.5 square feet X $400 per square foot).

Figure F7: Projected Demand for Fire Facilities

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Fire Facilities	0.4970 Square Feet	per Person	$400
	0.0612 Square Feet	per Job	

Demand for Fire Facilities					
Year	Population	Jobs	Square Feet		
			Residential	Nonresidential	Total
2020	30,531	16,769	15,174.5	1,025.5	16,200.0
2021	31,130	16,885	15,472.5	1,032.6	16,505.1
2022	31,730	17,002	15,770.5	1,039.8	16,810.3
2023	32,329	17,118	16,068.6	1,046.9	17,115.4
2024	32,929	17,235	16,366.6	1,054.0	17,420.6
2025	33,529	17,352	16,664.6	1,061.2	17,725.7
2026	34,128	17,468	16,962.6	1,068.3	18,030.9
2027	34,728	17,585	17,260.6	1,075.4	18,336.0
2028	35,327	17,702	17,558.6	1,082.6	18,641.2
2029	35,927	17,818	17,856.7	1,089.7	18,946.3
2030	36,527	17,935	18,154.7	1,096.8	19,251.5
10-Yr Increase	5,996	1,166	2,980.2	71.3	3,051.5

Growth-Related Expenditures	$1,192,069	$28,529	$1,220,597

Fire Apparatus – Incremental Expansion

Kingman plans to maintain its existing level of service for fire apparatus over the next 10 years. Based on a projected population increase of 5,996 persons, future residential development demands an additional 1.50 units of fire apparatus (5,996 additional persons X 0.00025 units per person). With projected employment growth of 1,166 jobs, future nonresidential development demands an additional 0.04 units of fire apparatus (1,166 additional jobs X 0.00003 units per job). Future development demands approximately 1.51 additional units of fire apparatus at a cost of $1,028,598 (1.51 units X $670,000 per unit).

Figure F8: Projected Demand for Fire Apparatus

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Fire Apparatus	0.00025 Units	per Person	$670,000
	0.00003 Units	per Job	

Demand for Fire Apparatus					
Year	Population	Jobs	Units		
			Residential	Nonresidential	Total
2020	30,531	16,769	7.49	0.51	8.00
2021	31,130	16,885	7.64	0.51	8.15
2022	31,730	17,002	7.79	0.51	8.30
2023	32,329	17,118	7.94	0.52	8.45
2024	32,929	17,235	8.08	0.52	8.60
2025	33,529	17,352	8.23	0.52	8.75
2026	34,128	17,468	8.38	0.53	8.90
2027	34,728	17,585	8.52	0.53	9.05
2028	35,327	17,702	8.67	0.53	9.21
2029	35,927	17,818	8.82	0.54	9.36
2030	36,527	17,935	8.97	0.54	9.51
10-Yr Increase	5,996	1,166	1.50	0.04	1.51

Growth-Related Expenditures	$1,005,000	$23,598	$1,028,598

Fire Communications Equipment – Incremental Expansion

Kingman plans to maintain its existing level of service for fire communications equipment over the next 10 years. Based on a projected population increase of 5,996 persons, future residential development demands an additional 6.99 units of fire communications equipment (5,996 additional persons X 0.0012 units per person). With projected employment growth of 1,166 jobs, future nonresidential development demands an additional 0.17 units of fire communications equipment (1,166 additional jobs X 0.0001 units per job). Future development demands approximately 7.16 additional units of fire communications equipment at a cost of $31,268 (7.16 units X $4,368 per unit).

Figure F9: Projected Demand for Fire Communications Equipment

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Fire Communications Equipment	0.0012 Units	per Person	$4,368
	0.0001 Units	per Job	

Demand for Fire Communications Equipment					
Year	Population	Jobs	Units		
			Residential	Nonresidential	Total
2020	30,531	16,769	35.59	2.41	38.00
2021	31,130	16,885	36.29	2.42	38.72
2022	31,730	17,002	36.99	2.44	39.43
2023	32,329	17,118	37.69	2.46	40.15
2024	32,929	17,235	38.39	2.47	40.86
2025	33,529	17,352	39.09	2.49	41.58
2026	34,128	17,468	39.79	2.51	42.29
2027	34,728	17,585	40.49	2.52	43.01
2028	35,327	17,702	41.19	2.54	43.73
2029	35,927	17,818	41.89	2.56	44.44
2030	36,527	17,935	42.59	2.57	45.16
10-Yr Increase	5,996	1,166	6.99	0.17	7.16

Growth-Related Expenditures	$30,538	$731	$31,268

FIRE FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

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

Fire Facilities Development Fees

Infrastructure components and cost factors for Fire Facilities are summarized in the upper portion of Figure F10. The cost per service unit for Fire Facilities is $372.13 per person and $46.63 per job.

Fire Facilities development fees for residential development are assessed according to the number of persons per housing unit. The single-family fee of $893 is calculated using a cost per service unit of $372.13 per person multiplied by a demand unit of 2.40 persons per housing unit.

Nonresidential development fees are calculated using jobs as the service unit. The fee of $0.11 per square foot of commercial development is derived from a cost per service unit of $46.63 per job, multiplied by a demand unit of 2.34 jobs per 1,000 square feet, divided by 1,000.

Figure F10: Schedule of Fire Facilities Development Fees

Fee Component	Cost per Person	Cost per Job
Fire Facilities	$198.81	$24.46
Fire Apparatus	$164.45	$20.23
Fire Communications Equipment	$5.09	$0.63
Development Fee Report	$3.78	$1.31
Total	$372.13	$46.63

Residential Development	Fees per Unit	
Development Type	Persons per Housing Unit[1]	Proposed Fees
Single Family	2.40	$893
Multi-Family	1.55	$577
Mobile Home	1.47	$547
All Other	1.00	$372

Nonresidential Development	Fees per Square Foot	
Development Type	Jobs per 1,000 Sq Ft[1]	Proposed Fees
Industrial	1.63	$0.08
Commercial	2.34	$0.11
Office & Other Services	2.97	$0.14
Institutional	2.83	$0.13
Hotel (per room)	0.58	$27
Assited Living (per bed)	0.61	$28

1. See Land Use Assumptions

FIRE FACILITIES DEVELOPMENT FEE REVENUE

Appendix A contains the forecast of revenues required by Arizona's enabling legislation (ARS § 9-463.05(E)(7)). In accordance with state law, this report includes an IIP for Fire Facilities needed to accommodate future development. Projected fee revenue shown in Figure F11 is based on the development projections in the *Land Use Assumptions* document and the updated Fire Facilities development fees. If development occurs at a more rapid rate than projected, the demand for infrastructure will increase and development fee revenue will increase at a corresponding rate. If development occurs at a slower rate than projected, the demand for infrastructure will also decrease, along with development fee revenue. Projected development fee revenue equals approximately $2.27 million, and projected expenditures equal approximately $2.29 million.

Figure F11: Projected Fire Facilities Development Fee Revenue

Fee Component	Growth Share	Existing Share	Total
Fire Facilities	$1,220,597	$0	$1,220,597
Fire Apparatus	$1,028,598	$0	$1,028,598
Fire Comm. Equipment	$31,268	$0	$31,268
Development Fee Report	$12,100	$0	$12,100
Total	$2,292,564	$0	$2,292,564

		Single Family $893 per unit	Multi-Family $577 per unit	Industrial $0.08 per sq ft	Commercial $0.11 per sq ft	Office & Other $0.14 per sq ft	Institutional $0.13 per sq ft
Year		Hsg Unit	Hsg Unit	KSF	KSF	KSF	KSF
Base	2020	10,970	1,884	752	2,075	1,143	2,582
Year 1	2021	11,214	1,893	758	2,090	1,151	2,600
Year 2	2022	11,458	1,902	763	2,104	1,159	2,618
Year 3	2023	11,702	1,911	768	2,118	1,167	2,635
Year 4	2024	11,946	1,920	773	2,133	1,175	2,653
Year 5	2025	12,190	1,929	779	2,147	1,183	2,671
Year 6	2026	12,434	1,938	784	2,162	1,191	2,689
Year 7	2027	12,678	1,947	789	2,176	1,199	2,707
Year 8	2028	12,922	1,956	794	2,191	1,207	2,725
Year 9	2029	13,166	1,965	800	2,205	1,215	2,743
Year 10	2030	13,410	1,974	805	2,219	1,223	2,761
10-Year Increase		2,440	90	52	144	80	180
Projected Revenue		$2,168,127	$51,649	$3,922	$15,527	$10,923	$23,420

Projected Fee Revenue	$2,273,567
Total Expenditures	$2,292,564

PARKS AND RECREATIONAL FACILITIES IIP

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

> *"Neighborhood parks and recreational facilities on real property up to thirty acres in area, or parks and recreational facilities larger than thirty acres if the facilities provide a direct benefit to the development. Park and recreational facilities do not include vehicles, equipment or that portion of any facility that is used for amusement parks, aquariums, aquatic centers, auditoriums, arenas, arts and cultural facilities, bandstand and orchestra facilities, bathhouses, boathouses, clubhouses, community centers greater than three thousand square feet in floor area, environmental education centers, equestrian facilities, golf course facilities, greenhouses, lakes, museums, theme parks, water reclamation or riparian areas, wetlands, zoo facilities or similar recreational facilities, but may include swimming pools."*

The Parks and Recreational Facilities IIP includes components for park land, improved park land, park amenities, and the cost of preparing the Parks and Recreational Facilities IIP and related Development Fee Report. The incremental expansion methodology is used for park land, improved park land, and park amenities. A plan-based methodology is used for the Development Fee Report.

Proportionate Share

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Parks and Recreational Facilities IIP and development fees will allocate the cost of public services between residential and nonresidential based on daytime population. Based on 2017 estimates from the U.S. Census Bureau's OnTheMap web application, 7,548 inflow commuters traveled to Kingman for work. The proportionate share is based on cumulative impact days per year with residents potentially impacting parks and recreational facilities 8,760 hours per year (24 hours per day X 365 days per year). Inflow commuters potentially impact parks and recreational facilities 2,500 hours per year, assuming 10 hours per day and five workdays per week multiplied by 50 weeks per year. For parks and recreational facilities, residential development generates 93 percent of demand and nonresidential development generates the remaining seven percent of demand.

Figure PR1: Proportionate Share

Development Type	Service Unit	Impact Days per Year	Total Impact Hours per Year	Proportionate Share
Residential	29,600 residents	8,760 hours	259,296,000	93%
Nonresidential	7,548 inflow commuters	2,500 hours	18,870,000	7%
Total			278,166,000	100%

Residential Impact: 8,760 hours per year (24 hours per day X 365 days per year)

Nonresidential Impact: 2,500 hours per year (10 hours per day X 5 days per week X 50 weeks per year)

Service Area

Kingman plans to provide a uniform level of service and equal access to parks and recreational facilities within the city limits; therefore, there is a single service area for the Parks and Recreational IIP.

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 PR2 displays the demand indicators for residential and nonresidential land uses. For residential development, the table displays the number of persons per housing unit. For nonresidential development, the table displays the number of employees per thousand square feet of floor area.

Figure PR2: Ratio of Service Unit to Development Unit

Residential Development	
Development Type	Persons per Housing Unit[1]
Single Family	2.40
Multi-Family	1.55
Mobile Home	1.47
All Other	1.00

Nonresidential Development	
Development Type	Jobs per 1,000 Sq Ft[1]
Industrial	1.63
Commercial	2.34
Office & Other Services	2.97
Institutional	2.83
Hotel (per room)	0.58
Assited 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."*

Park Land – Incremental Expansion

Kingman's existing park inventory includes 115.3 acres of park land, and the City plans to acquire additional park land to serve future development. The definition of necessary public services for Parks and Recreational Facilities includes parks or facilities on real property up to 30 acres in area, or parks and facilities larger than 30 acres if the facilities provide a direct benefit to the development. The analysis includes all 41 acres of park land at Centennial Park and all 45 acres at Southside Park, because these parks provide a direct benefit to development. To allocate the proportionate share of demand for park land to residential and nonresidential development, this analysis uses daytime population outlined in Figure PR1. Kingman's existing LOS for residential development is approximately 0.0035 acres per person (115.3 acres X 93 percent residential share / 30,531 persons). For nonresidential development, the existing LOS is approximately 0.0005 acres per job (115.3 acres X seven percent nonresidential share / 16,769 jobs).

Kingman's Parks and Recreation Department provided land acquisition costs of $20,000 per acre. For park land, the cost is $70.24 per person (0.0035 acres per person X $20,000 per acre) and $9.63 per job (0.0005 acres per job X $20,000 per acre).

Figure PR3: Park Land Level of Service

Description	Total Acres
Cecil B. Davis Park	5.0
Centennial Park	41.0
Firefighter's Memorial Park	8.3
Lewis Kingman Park	9.0
Monsoon Park	7.0
Southside Park	45.0
Total	115.3

Cost Factors	
Cost per Acre - Land Acquisition	$20,000

Level-of-Service (LOS) Standards	
Existing Acres	115.3
Residential	
Residential Share	93%
2020 Population	30,531
Acres per Person	0.0035
Cost per Person	$70.24
Nonresidential	
Nonresidential Share	7%
2020 Jobs	16,769
Acres per Job	0.0005
Cost per Job	$9.63

Source: Kingman Parks & Recreation Department

Improved Park Land – Incremental Expansion

Kingman's existing park inventory includes 33 acres of improved park land, and the City plans to improve additional park land to serve future development. This includes all turf areas but excludes any areas included in the park amenities inventory.

To allocate the proportionate share of demand for improved park land to residential and nonresidential development, this analysis uses daytime population outlined in Figure PR1. Kingman's existing LOS for residential development is approximately 0.0010 improved acres per person (33 acres X 93 percent residential share / 30,531 persons). For nonresidential development, the existing LOS is approximately 0.0001 improved acres per job (33 acres X seven percent nonresidential share / 16,769 jobs).

Kingman's Parks and Recreation Department provided site preparation costs of $80,000 per acre – site preparation includes costs related to earthwork, utilities, drainage, electrical distribution, and irrigation. For improved park land, the cost is $80.42 per person (0.0010 acres per person X $80,000 per acre) and $11.02 per job (0.0001 acres per job X $80,000 per acre).

Figure PR4: Improved Park Land Level of Service

Description	Improved Acres
Cecil B. Davis Park	4.0
Centennial Park	9.5
Firefighter's Memorial Park	7.0
Lewis Kingman Park	5.0
Monsoon Park	6.0
Southside Park	1.5
Total	33.0

Cost Factors	
Cost per Acre - Site Preparation[1]	$80,000

Level-of-Service (LOS) Standards	
Existing Improved Acres	33.0
Residential	
Residential Share	93%
2020 Population	30,531
Improved Acres per Person	0.0010
Cost per Person	$80.42
Nonresidential	
Nonresidential Share	7%
2020 Jobs	16,769
Improved Acres per Job	0.0001
Cost per Job	$11.02

Source: Kingman Parks & Recreation Department

1. Includes earthwork, utilities, drainage, electrical distribution, and irrigation

Park Amenities – Incremental Expansion

Kingman currently provides 337 park amenities in its existing parks, and the City plans to construct additional park amenities to serve future development. Based on costs provided by Kingman's Parks and Recreation Department to construct recent park amenities, the total cost of Kingman's existing park amenities is $15,949,265. The weighted average cost is $47,327 per park amenity ($15,949,265 total cost / 337 park amenities).

Figure PR5: Existing Park Amenities

Description	Amenities	Unit Cost	Total Cost
Baseball / Softball Field with Lights	13	$400,000	$5,200,000
Basketball Court	7	$95,000	$665,000
Bench	47	$1,100	$51,700
Bocce Ball	2	$10,000	$20,000
Dog Park	3	$12,000	$36,000
Drinking Fountain	27	$4,000	$108,000
Exercise Equipment	6	$1,700	$10,200
Frisbee Golf	1	$5,000	$5,000
Grill	29	$260	$7,540
Horseshoe Pit	11	$1,000	$11,000
Multi-Purpose Field with Lights	3	$380,000	$1,140,000
Picnic Table	100	$1,200	$120,000
Playground	12	$200,000	$2,400,000
Racquetball	2	$60,000	$120,000
Ramada	20	$29,000	$580,000
Restroom	12	$340,000	$4,080,000
Skate Park	1	$543,825	$543,825
Splash Pad	1	$255,000	$255,000
Swing	34	$8,000	$272,000
Tennis Court	4	$55,000	$220,000
Volleyball Court	2	$52,000	$104,000
Total	337	$47,327	$15,949,265

Source: Kingman Parks & Recreation Department

To allocate the proportionate share of demand for park amenities to residential and nonresidential development, this analysis uses daytime population shown in Figure PR1. Kingman's existing LOS for residential development is 0.0103 amenities per person (337 amenities X 93 percent residential share / 30,531 persons). For nonresidential development, the existing LOS is 0.0014 amenities per job (337 amenities X seven percent nonresidential share / 16,769 jobs).

Based on the total cost of Kingman's existing park amenities, the weighted average cost for new park amenities is $47,327 per improvement ($15,949,265 total cost / 337 amenities). Kingman may use development fees to construct additional park amenities similar to its existing inventory. For park amenities, the cost is $485.84 per person (0.0103 amenities per person X $47,327 per amenity) and $66.58 per job (0.0014 amenities per job X $47,327 per amenity).

Figure PR6: Park Amenities Level of Service

Cost Factors	
Weighted Average per Amenity	$47,327

Level-of-Service (LOS) Standards	
Existing Amenities	337
Residential	
Residential Share	93%
2020 Population	30,531
Amenities per Person	0.0103
Cost per Person	$485.84
Nonresidential	
Nonresidential Share	7%
2020 Jobs	16,769
Amenities per Job	0.0014
Cost per Job	$66.58

Source: Kingman Parks & Recreation Department

Development Fee Report – Plan-Based

The cost to prepare the Parks and Recreational Facilities IIP and development fees totals $10,200. Kingman plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of new development from the *Land Use Assumptions* document, the cost is $3.16 per person and $1.22 per job.

Figure PR7: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Parks and Recreational	$10,200	Residential	93%	Population	2,998	$3.16
		Nonresidential	7%	Jobs	583	$1.22

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(5) requires:

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

ARS § 9-463.05(E)(6) requires:

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

As shown in the *Land Use Assumptions* document, Kingman's population is expected to increase by 5,996 persons and employment is expected to increase by 1,166 jobs over the next 10 years. To maintain the existing levels of service, Kingman will need to acquire approximately 21.6 acres of park land, improve approximately 6.2 acres of park land, and construct approximately 63.2 park amenities over the next 10 years. The following pages include a more detailed projection of demand for services and costs for the Parks and Recreational Facilities IIP.

Park Land – Incremental Expansion

Kingman plans to maintain its existing level of service for park land over the next 10 years. Based on a projected population increase of 5,996 persons, future residential development demands an additional 21.1 acres of park land (5,996 additional persons X 0.0035 acres per person). With projected employment growth of 1,166 jobs, future nonresidential development demands an additional 0.6 acres of park land (1,166 additional jobs X 0.0005 acres per job). Future development demands approximately 21.6 additional acres of park land at a cost of $432,408 (21.6 acres X $20,000 per acre).

Figure PR8: Projected Demand for Park Land

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Park Land	0.0035 Acres	per Person	$20,000
	0.0005 Acres	per Job	

Demand for Park Land					
Year	Population	Jobs	Acres		
			Residential	Nonresidential	Total
2020	30,531	16,769	107.2	8.1	115.3
2021	31,130	16,885	109.3	8.1	117.5
2022	31,730	17,002	111.4	8.2	119.6
2023	32,329	17,118	113.5	8.2	121.8
2024	32,929	17,235	115.7	8.3	123.9
2025	33,529	17,352	117.8	8.4	126.1
2026	34,128	17,468	119.9	8.4	128.3
2027	34,728	17,585	122.0	8.5	130.4
2028	35,327	17,702	124.1	8.5	132.6
2029	35,927	17,818	126.2	8.6	134.8
2030	36,527	17,935	128.3	8.6	136.9
10-Yr Increase	5,996	1,166	21.1	0.6	21.6

Growth-Related Expenditures	$421,181	$11,226	$432,408

Improved Park Land – Incremental Expansion

Kingman plans to maintain its existing level of service for improved park land over the next 10 years. Based on a projected population increase of 5,996 persons, future residential development demands an additional 6.0 acres of improved park land (5,996 additional persons X 0.0010 improved acres per person). With projected employment growth of 1,166 jobs, future nonresidential development demands an additional 0.2 acres of improved park land (1,166 additional jobs X 0.0001 improved acres per job). Future development demands approximately 6.2 additional acres of improved park land at a cost of $495,038 (6.2 improved acres X $80,000 per acre).

Figure PR9: Projected Demand for Improved Park Land

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Improved Park Land	0.0010 Improved Acres	per Person	$80,000
	0.0001 Improved Acres	per Job	

Demand for Improved Park Land					
Year	Population	Jobs	Improved Acres		
			Residential	Nonresidential	Total
2020	30,531	16,769	30.7	2.3	33.0
2021	31,130	16,885	31.3	2.3	33.6
2022	31,730	17,002	31.9	2.3	34.2
2023	32,329	17,118	32.5	2.4	34.9
2024	32,929	17,235	33.1	2.4	35.5
2025	33,529	17,352	33.7	2.4	36.1
2026	34,128	17,468	34.3	2.4	36.7
2027	34,728	17,585	34.9	2.4	37.3
2028	35,327	17,702	35.5	2.4	38.0
2029	35,927	17,818	36.1	2.5	38.6
2030	36,527	17,935	36.7	2.5	39.2
10-Yr Increase	5,996	1,166	6.0	0.2	6.2

Growth-Related Expenditures	$482,185	$12,853	$495,038

Park Amenities – Incremental Expansion

Kingman plans to maintain its existing level of service for park amenities over the next 10 years. Based on a projected population increase of 5,996 persons, future residential development demands an additional 61.6 park amenities (5,996 additional persons X 0.0103 amenities per person). With projected employment growth of 1,166 jobs, future nonresidential development demands an additional 1.6 park amenities (1,166 additional jobs X 0.0014 amenities per job). Future development demands approximately 63.2 additional park amenities at a cost of $2,990,714 (63.2 amenities X $47,327 per amenity).

Figure PR10: Projected Demand for Park Amenities

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Park Amenities	0.0103 Amenities	per Person	$47,327
	0.0014 Amenities	per Job	

Demand for Park Amenities					
Year	Population	Jobs	Amenities		
			Residential	Nonresidential	Total
2020	30,531	16,769	313.4	23.6	337.0
2021	31,130	16,885	319.6	23.8	343.3
2022	31,730	17,002	325.7	23.9	349.6
2023	32,329	17,118	331.9	24.1	356.0
2024	32,929	17,235	338.0	24.2	362.3
2025	33,529	17,352	344.2	24.4	368.6
2026	34,128	17,468	350.3	24.6	374.9
2027	34,728	17,585	356.5	24.7	381.2
2028	35,327	17,702	362.7	24.9	387.6
2029	35,927	17,818	368.8	25.1	393.9
2030	36,527	17,935	375.0	25.2	400.2
10-Yr Increase	5,996	1,166	61.6	1.6	63.2

Growth-Related Expenditures	$2,913,067	$77,647	$2,990,714

PARKS AND RECREATIONAL FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is unnecessary for Parks and Recreational Facilities fees, because costs generated by projected development exceed revenues generated by projected development. Appendix A contains the forecast of revenues required by Arizona's Enabling Legislation (ARS § 9-463.05(E)(7)).

Parks and Recreational Facilities Development Fees

Infrastructure components and cost factors for Parks and Recreational Facilities are summarized in the upper portion of Figure PR11. The cost per service unit for Parks and Recreational Facilities is $639.66 per person and $88.45 per job.

Parks and Recreational Facilities development fees for residential development are assessed according to the number of persons per housing unit. For example, the single-family fee of $1,535 is calculated using a cost per service unit of $639.66 per person multiplied by a demand unit of 2.40 persons per housing unit.

Nonresidential development fees are calculated using jobs as the service unit. The fee of $0.21 per square foot of commercial development is derived from a cost per service unit of $88.45 per job, multiplied by a demand unit of 2.34 jobs per 1,000 square feet, divided by 1,000.

Figure PR11: Schedule of Parks and Recreational Facilities Development Fees

Fee Component	Cost per Person	Cost per Job
Park Land	$70.24	$9.63
Improved Park Land	$80.42	$11.02
Park Amenities	$485.84	$66.58
Development Fee Report	$3.16	$1.22
Total	$639.66	$88.45

Residential Development	Fees per Unit	
Development Type	Persons per Housing Unit[1]	Proposed Fees
Single Family	2.40	$1,535
Multi-Family	1.55	$991
Mobile Home	1.47	$940
All Other	1.00	$640

Nonresidential Development	Fees per Square Foot	
Development Type	Jobs per 1,000 Sq Ft[1]	Proposed Fees
Industrial	1.63	$0.14
Commercial	2.34	$0.21
Office & Other Services	2.97	$0.26
Institutional	2.83	$0.25
Hotel (per room)	0.58	$51
Assited Living (per bed)	0.61	$54

1. See Land Use Assumptions

Parks and Recreational Facilities Development Fee Revenue

Appendix A contains the forecast of revenues required by Arizona's Enabling Legislation (ARS § 9-463.05(E)(7)). In accordance with state law, this report includes an IIP for Parks and Recreational Facilities needed to accommodate new development. Projected fee revenue shown in Figure PR12 is based on the development projections in the *Land Use Assumptions* document and the updated development fees for Parks and Recreational Facilities shown in Figure PR11. If development occurs at a more rapid rate than projected, the demand for infrastructure will increase and development fee revenue will increase at a corresponding rate. If development occurs at a slower rate than projected, the demand for infrastructure will also decrease, along with development fee revenue. Projected development fee revenue equals approximately $3.93 million, and projected expenditures equal approximately $3.93 million.

Figure PR12: Projected Parks and Recreational Facilities Development Fee Revenue

Fee Component	Growth Share	Existing Share	Total
Park Land	$432,408	$0	$432,408
Improved Park Land	$495,038	$0	$495,038
Park Amenities	$2,990,714	$0	$2,990,714
Development Fee Report	$10,200	$0	$10,200
Total	$3,928,359	$0	$3,928,359

		Single Family $1,535 per unit	Multi-Family $991 per unit	Industrial $0.14 per sq ft	Commercial $0.21 per sq ft	Office & Other $0.26 per sq ft	Institutional $0.25 per sq ft
Year		Hsg Unit	Hsg Unit	KSF	KSF	KSF	KSF
Base	2020	10,970	1,884	752	2,075	1,143	2,582
Year 1	2021	11,214	1,893	758	2,090	1,151	2,600
Year 2	2022	11,458	1,902	763	2,104	1,159	2,618
Year 3	2023	11,702	1,911	768	2,118	1,167	2,635
Year 4	2024	11,946	1,920	773	2,133	1,175	2,653
Year 5	2025	12,190	1,929	779	2,147	1,183	2,671
Year 6	2026	12,434	1,938	784	2,162	1,191	2,689
Year 7	2027	12,678	1,947	789	2,176	1,199	2,707
Year 8	2028	12,922	1,956	794	2,191	1,207	2,725
Year 9	2029	13,166	1,965	800	2,205	1,215	2,743
Year 10	2030	13,410	1,974	805	2,219	1,223	2,761
10-Year Increase		2,440	90	52	144	80	180
Projected Revenue		$3,736,609	$89,012	$7,493	$29,665	$20,745	$44,634

Projected Fee Revenue	$3,928,158
Total Expenditures	$3,928,359

POLICE FACILITIES IIP

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

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

The Police Facilities IIP includes components for police facilities, police vehicles, police 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 to calculate the components for police facilities, police vehicles, and police communications equipment. A plan-based methodology is used for the Development Fee Report.

Proportionate Share

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Police Facilities IIP and development fees will allocate the cost of public services between residential and nonresidential based on functional population. Based on 2017 estimates from the U.S. Census Bureau's OnTheMap web application, residential development accounts for approximately 72 percent of functional population and nonresidential development is responsible for the remaining 28 percent.

Figure P1: Proportionate Share

Demand Units in 2017					
Residential				Demand Hours/Day	Person Hours
	Population	29,600			
	Residents Not Working		17,890	20	357,800
	Employed Residents		11,710		
	Employed in Kingman		5,088	14	71,232
	Employed outside Kingman		6,622	14	92,708
				Residential Subtotal	521,740
				Residential Share	**72%**
Nonresidential					
	Non-working Residents		17,890	4	71,560
	Jobs Located in Kingman		12,636		
	Residents Employed in Kingman		5,088	10	50,880
	Non-Resident Workers (inflow commuters)		7,548	10	75,480
				Nonresidential Subtotal	197,920
				Nonresidential Share	**28%**
				Total	719,660

Source: Arizona Office of Economic Opportunity (population), U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics, Version 6.6 (employment).

Service Area

Kingman's Police Department strives to provide a uniform response time within the city limits; therefore, there is a single service area for the Police Facilities IIP.

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 housing unit. For nonresidential development, the table displays the number of average weekday vehicle trips generated per thousand square feet of floor area.

Figure P2: Ratio of Service Unit to Development Unit

Residential Development	
Development Type	Persons per Housing Unit[1]
Single Family	2.40
Multi-Family	1.55
Mobile Home	1.47
All Other	1.00

Nonresidential Development			
Development Type	AWVTE per 1,000 Sq Ft[1]	Trip Rate Adjustment	AWVT per 1,000 Sq Ft[1]
Industrial	4.96	50%	2.48
Commercial	37.75	33%	12.46
Office & Other Services	9.74	50%	4.87
Institutional	10.72	33%	3.54
Hotel (per room)	8.36	50%	4.18
Assited 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."*

Police Facilities – Incremental Expansion

The City of Kingman has one police station with 10,040 square feet of floor area, and the City plans to construct additional police facilities to serve future development. To allocate the proportionate share of demand for police facilities to residential and nonresidential development, this analysis uses functional population outlined in Figure P1. Kingman's existing level of service for residential development is 0.2368 square feet per person (10,040 square feet X 72 percent residential share / 30,531 persons). The nonresidential level of service is 0.0663 square feet per vehicle trip (10,040 square feet X 28 percent nonresidential share / 42,418 vehicle trips).

Based on estimates provided by Kingman, the construction cost for a new police facility is $400 per square foot ($600,000 construction cost / 1,500 square feet). Although the analysis uses a specific project to determine the construction cost per square foot, this is used as a proxy for all police facility costs. Kingman may choose to expand existing police facility or construct a new police facility other than the planned police facility used in the analysis. For police facilities, the cost is $94.71 per person (0.2368 square feet per person X $400 per square foot) and $26.51 per vehicle trip (0.0663 square feet per vehicle trip X $400 per square foot).

Figure P3: Police Facilities Level of Service

Description	Square Feet
Police Headquarters	10,040

Cost Factors	
Planned Police Station Cost	$600,000
Planned Police Station Square Feet	1,500
Cost per Square Foot	$400

Level-of-Service (LOS) Standards	
Existing Square Feet	10,040
Residential	
Residential Share	72%
2020 Population	30,531
Square Feet per Person	0.2368
Cost per Person	$94.71
Nonresidential	
Nonresidential Share	28%
2020 Vehicle Trips	42,418
Square Feet per Vehicle Trip	0.0663
Cost per Vehicle Trip	$26.51

Source: Kingman Police Department

Police Vehicles – Incremental Expansion

The City of Kingman has 58 police vehicles with a total cost of $2,836,732, and the City plans to acquire additional police vehicles to serve future development. To allocate the proportionate share of demand for police vehicles to residential and nonresidential development, this analysis uses functional population outlined in Figure P1. Kingman's existing level of service for residential development is 0.0014 vehicles per person (58 vehicles X 72 percent residential share / 30,531 persons). The nonresidential level of service is 0.0004 vehicles per vehicle trip (58 vehicles X 28 percent nonresidential share / 42,418 vehicle trips).

Based on the total cost of Kingman's existing police vehicles, the weighted average cost for a new police vehicles is $48,909 per vehicle ($2,836,732 total cost / 58 vehicles). Kingman may use development fees to acquire additional police vehicles similar to its existing inventory. For police vehicles, the cost is $66.90 per person (0.0014 vehicles per person X $48,909 per vehicle) and $18.73 per vehicle trip (0.0004 vehicles per vehicle trip X $48,909 per vehicle).

Figure P4: Police Vehicles Level of Service

Description	Vehicles	Unit Cost	Total Cost
Police Patrol Vehicle	44	$53,758	$2,365,352
Detective Unmarked Vehicle	14	$33,670	$471,380
Total	58	$48,909	$2,836,732

Cost Factors	
Weighted Average per Vehicle	$48,909

Level-of-Service (LOS) Standards	
Existing Vehicles	58
Residential	
Residential Share	72%
2020 Population	30,531
Vehicles per Person	0.0014
Cost per Person	$66.90
Nonresidential	
Nonresidential Share	28%
2020 Vehicle Trips	42,418
Vehicles per Vehicle Trip	0.0004
Cost per Vehicle Trip	$18.73

Source: Kingman Police Department

Communications Equipment – Incremental Expansion

The City of Kingman has 150 units of police communications equipment with a total cost of $316,286, and the City plans to acquire additional police communications equipment to serve future development. To allocate the proportionate share of demand for police communications equipment to residential and nonresidential development, this analysis uses functional population outlined in Figure P1. Kingman's existing level of service for residential development is 0.0035 units per person (150 units X 72 percent residential share / 30,531 persons). The nonresidential level of service is 0.0010 units per vehicle trip (150 units X 28 percent nonresidential share / 42,418 vehicle trips).

Based on the total cost of Kingman's existing police communications equipment, the weighted average cost is $2,109 per unit ($316,286 total cost / 150 units). Kingman may use development fees to acquire additional police communications equipment similar to its existing inventory. For police communications equipment, the cost is $7.46 per person (0.0035 units per person X $2,109 per unit) and $2.09 per vehicle trip (0.0010 units per vehicle trip X $2,109 per unit).

Figure P5: Police Communications Equipment Level of Service

Description	Units	Unit Cost	Total Cost
Patrol Vehicle Radio	44	$1,371	$60,324
Portable Radio	58	$953	$55,274
Mobile Data Computer (MDC)	34	$5,000	$170,000
Detective Vehicle Radio	14	$2,192	$30,688
Total	150	$2,109	$316,286

Cost Factors	
Weighted Average per Unit	$2,109

Level-of-Service (LOS) Standards	
Existing Units	150
Residential	
Residential Share	72%
2020 Population	30,531
Units per Person	0.0035
Cost per Person	$7.46
Nonresidential	
Nonresidential Share	28%
2020 Vehicle Trips	42,418
Units per Vehicle Trip	0.0010
Cost per Vehicle Trip	$2.09

Source: Kingman Police Department

Development Fee Report – Plan-Based

The cost to prepare the Police Facilities IIP and related Development Fee Report totals $12,100. Kingman 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 $2.91 per person and $2.30 per vehicle trip.

Figure P6: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Police	$12,100	Residential	72%	Population	2,998	$2.91
		Nonresidential	28%	Vehicle Trips	1,475	$2.30

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(5) requires:

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

ARS § 9-463.05(E)(6) requires:

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

As shown in the *Land Use Assumptions* document, Kingman's population is expected to increase by 5,996 persons and nonresidential vehicle trips generated are expected to increase by 2,950 trips over the next 10 years. To maintain the existing levels of service, Kingman will need to construct approximately 1,615 square feet of police facilities, acquire approximately 9.3 police vehicles, and acquire approximately 24.1 units of police communications equipment over the next 10 years. The following pages include a more detailed projection of demand for services and costs for the Police Facilities IIP.

Police Facilities – Incremental Expansion

Kingman plans to maintain its existing level of service for police facilities over the next 10 years. Based on a projected population increase of 5,996 persons, future residential development demands an additional 1,419.7 square feet of police facilities (5,996 additional persons X 0.2368 square feet per person). With projected nonresidential vehicle trip growth of 2,950 vehicle trips, future nonresidential development demands an additional 195.5 square feet of police facilities (2,950 additional vehicle trips X 0.0663 square feet per vehicle trip). Future development demands approximately 1,615.2 additional square feet of police facilities at a cost of $646,081 (1,615.2 square feet X $400 per square foot).

Figure P7: Projected Demand for Police Facilities

Type of Infrastructure	Level of Service	Demand Unit	Cost per Sq Ft
Police Facilities	0.2368 Square Feet	per Person	$400
	0.0663 Square Feet	per Vehicle Trip	

Demand for Police Facilities					
Year	Population	Vehicle Trips	Square Feet		
			Residential	Nonresidential	Total
2020	30,531	42,418	7,228.8	2,811.2	10,040.0
2021	31,130	42,713	7,370.8	2,830.8	10,201.5
2022	31,730	43,008	7,512.7	2,850.3	10,363.0
2023	32,329	43,303	7,654.7	2,869.9	10,524.6
2024	32,929	43,598	7,796.7	2,889.4	10,686.1
2025	33,529	43,893	7,938.6	2,909.0	10,847.6
2026	34,128	44,188	8,080.6	2,928.5	11,009.1
2027	34,728	44,483	8,222.6	2,948.1	11,170.6
2028	35,327	44,778	8,364.6	2,967.6	11,332.2
2029	35,927	45,073	8,506.5	2,987.2	11,493.7
2030	36,527	45,368	8,648.5	3,006.7	11,655.2
10-Yr Increase	5,996	2,950	1,419.7	195.5	1,615.2

Growth-Related Expenditures	$567,875	$78,206	$646,081

Police Vehicles – Incremental Expansion

Kingman plans to maintain its existing level of service for police vehicles over the next 10 years. Based on a projected population increase of 5,996 persons, future residential development demands an additional 8.2 police vehicles (5,996 additional persons X 0.0014 vehicles per person). With projected nonresidential vehicle trip growth of 2,950 vehicle trips, future nonresidential development demands an additional 1.1 police vehicles (2,950 additional vehicle trips X 0.0004 vehicles per vehicle trip). Future development demands approximately 9.3 additional police vehicles at a cost of $456,364 (9.3 vehicles X $48,909 per vehicle).

Figure P8: Projected Demand for Police Vehicles

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Police Vehicles	0.0014 Vehicles	per Person	$48,909
	0.0004 Vehicles	per Vehicle Trip	

Demand for Police Vehicles					
Year	Population	Vehicle Trips	Vehicles		
			Residential	Nonresidential	Total
2020	30,531	42,418	41.8	16.2	58.0
2021	31,130	42,713	42.6	16.4	58.9
2022	31,730	43,008	43.4	16.5	59.9
2023	32,329	43,303	44.2	16.6	60.8
2024	32,929	43,598	45.0	16.7	61.7
2025	33,529	43,893	45.9	16.8	62.7
2026	34,128	44,188	46.7	16.9	63.6
2027	34,728	44,483	47.5	17.0	64.5
2028	35,327	44,778	48.3	17.1	65.5
2029	35,927	45,073	49.1	17.3	66.4
2030	36,527	45,368	50.0	17.4	67.3
10-Yr Increase	5,996	2,950	8.2	1.1	9.3

Growth-Related Expenditures	$401,123	$55,241	$456,364

Police Communications Equipment

Kingman plans to maintain its existing level of service for police communications equipment over the next 10 years. Based on a projected population increase of 5,996 persons, future residential development demands an additional 21.2 units of police communications equipment (5,996 additional persons X 0.0035 units per person). With projected nonresidential vehicle trip growth of 2,950 vehicle trips, future nonresidential development demands an additional 2.9 units of police communications equipment (2,950 additional vehicle trips X 0.0010 units per vehicle trip). Future development demands approximately 24.1 additional units of police communications equipment at a cost of $50,883 (24.1 units X $2,109 per unit).

Figure P9: Projected Demand for Police Communications Equipment

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Police Communications Equipment	0.0035 Units	per Person	$2,109
	0.0010 Units	per Vehicle Trip	

Demand for Police Communications Equipment					
Year	Population	Vehicle Trips	Units		
			Residential	Nonresidential	Total
2020	30,531	42,418	108.0	42.0	150.0
2021	31,130	42,713	110.1	42.3	152.4
2022	31,730	43,008	112.2	42.6	154.8
2023	32,329	43,303	114.4	42.9	157.2
2024	32,929	43,598	116.5	43.2	159.7
2025	33,529	43,893	118.6	43.5	162.1
2026	34,128	44,188	120.7	43.8	164.5
2027	34,728	44,483	122.8	44.0	166.9
2028	35,327	44,778	125.0	44.3	169.3
2029	35,927	45,073	127.1	44.6	171.7
2030	36,527	45,368	129.2	44.9	174.1
10-Yr Increase	5,996	2,950	21.2	2.9	24.1

Growth-Related Expenditures	$44,724	$6,159	$50,883

POLICE FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

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

Police Facilities Development Fees

Infrastructure components and cost factors for Police Facilities are summarized in the upper portion of Figure P10. The cost per service unit for Police Facilities is $171.98 per person and $49.63 per vehicle trip.

Police Facilities development fees for residential development are assessed according to the number of persons per housing unit. For example, the single-family fee of $413 is calculated using a cost per service unit of $171.98 per person multiplied by a demand unit of 2.40 persons per housing unit.

Nonresidential development fees are calculated using vehicle trips as the service unit. The fee of $0.62 per square foot of commercial development is derived from a cost per service unit of $49.63 per vehicle trip, multiplied by a demand unit of 12.46 average weekday vehicle trips per 1,000 square feet, divided by 1,000.

Figure P10: Schedule of Police Facilities Development Fees

Fee Component	Cost per Person	Cost per Trip
Police Facilities	$94.71	$26.51
Police Vehicles	$66.90	$18.73
Police Communications Equipment	$7.46	$2.09
Development Fee Report	$2.91	$2.30
Total	$171.98	$49.63

Residential Development	Fees per Unit	
Development Type	Persons per Housing Unit[1]	Proposed Fees
Single Family	2.40	$413
Multi-Family	1.55	$267
Mobile Home	1.47	$253
All Other	1.00	$172

Nonresidential Development	Fees per Square Foot	
Development Type	Avg Weekday Vehicle Trips[1]	Proposed Fees
Industrial	2.48	$0.12
Commercial	12.46	$0.62
Office & Other Services	4.87	$0.24
Institutional	3.54	$0.18
Hotel (per room)	4.18	$207
Assited Living (per bed)	1.30	$65

1. See Land Use Assumptions

Police Facilities Development Fee Revenue

Appendix A contains revenue forecasts required by Arizona's Enabling Legislation (ARS § 9-463.05(E)(7)). Projected fee revenue shown in Figure P11 is based on the development projections in the *Land Use Assumptions* document and the updated Police Facilities development fees. If development occurs faster than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs slower than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate. Projected development fee revenue equals approximately $1.17 million, and projected expenditures equal approximately $1.17 million.

Figure P11: Projected Revenue from Police Facilities Development Fees

Fee Component	Growth Share	Existing Share	Total
Police Facilities	$646,081	$0	$646,081
Police Vehicles	$456,364	$0	$456,364
Police Comm. Equipment	$50,883	$0	$50,883
Development Fee Report	$12,100	$0	$12,100
Total	$1,165,428	$0	$1,165,428

		Single Family $413 per unit	Multi-Family $267 per unit	Industrial $0.12 per sq ft	Commercial $0.62 per sq ft	Office & Other $0.24 per sq ft	Institutional $0.18 per sq ft
Year		Hsg Unit	Hsg Unit	KSF	KSF	KSF	KSF
Base	2020	10,970	1,884	752	2,075	1,143	2,582
Year 1	2021	11,214	1,893	758	2,090	1,151	2,600
Year 2	2022	11,458	1,902	763	2,104	1,159	2,618
Year 3	2023	11,702	1,911	768	2,118	1,167	2,635
Year 4	2024	11,946	1,920	773	2,133	1,175	2,653
Year 5	2025	12,190	1,929	779	2,147	1,183	2,671
Year 6	2026	12,434	1,938	784	2,162	1,191	2,689
Year 7	2027	12,678	1,947	789	2,176	1,199	2,707
Year 8	2028	12,922	1,956	794	2,191	1,207	2,725
Year 9	2029	13,166	1,965	800	2,205	1,215	2,743
Year 10	2030	13,410	1,974	805	2,219	1,223	2,761
10-Year Increase		2,440	90	52	144	80	180
Projected Revenue		$998,583	$23,788	$6,292	$87,176	$18,773	$30,813

Projected Fee Revenue	$1,165,424
Total Expenditures	$1,165,428

STREET FACILITIES IIP

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

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

The Street Facilities IIP includes components for arterials, improved intersections, and the cost of preparing the Street Facilities IIP and related Development Fee Report. The incremental expansion methodology, based on the current level of service, is used to calculate the components for arterials and improved intersections. A plan-based methodology is used for the Development Fee Report.

Proportionate Share

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Street Facilities IIP and development fees will allocate the cost of necessary public services between residential and nonresidential based on trip generation rates, trip adjustment factors, and trip lengths.

Service Area

Kingman's street network provides transportation routes throughout the city; therefore, there is a single service area for the Street Facilities IIP.

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."*

Kingman will use vehicle miles traveled (VMT) as the demand units for Street Facilities fees. Components used to determine VMT include average weekday vehicle trip generation rates, adjustments for commuting patterns and pass-by trips, and trip length weighting factors.

Residential Trip Generation Rates

As an alternative to simply using the national average trip generation rate for residential development, the ITE publishes regression curve formulas that may be used to derive custom trip generation rates, using local demographic data. Key independent variables needed for the analysis (i.e. vehicles available, housing units, households, and persons) are available from American Community Survey data. Shown in Figure S1, single-family units generate 8.57 average weekday vehicle trip ends per unit, multi-family units generate 5.06 average weekday vehicle trip ends per unit, mobile homes generate 5.50 average weekday vehicle trip ends per unit, and all other units generate 3.74 average weekday vehicle trip ends per unit.

Figure S1: Average Weekday Vehicle Trip Ends by Housing Type

		Households by Structure Type[2]					
Tenure by Units in Structure	Vehicles Available[1]	Single-Family	Multi-Family	Mobile Home	All Other	Total	Vehicles per HH by Tenure
Owner-Occupied	13,748	6,721	21	472	34	7,248	1.90
Renter-Occupied	5,215	2,167	1,468	175	0	3,810	1.37
Total	18,963	8,888	1,489	647	34	11,058	1.71

Units in Structure	Persons in Households[3]	Trip Ends[4]	Vehicles by Type of Unit	Trip Ends[5]	Average Trip Ends	Housing Units[6]	Trip Ends per Housing Unit
Single-Family	23,478	65,378	15,715	102,419	83,898	9,788	**8.57**
Multi-Family	2,704	9,318	2,049	8,367	8,843	1,746	**5.06**
Mobile Home	1,174	4,009	1,135	4,765	4,387	797	**5.50**
All Other	34	81	64	173	127	34	**3.74**
Total	27,390	78,787	18,963	115,724	97,256	12,365	**7.87**

1. Vehicles available by tenure from Table B25046, American Community Survey, 2013-2017 5-Year Estimates.
2. Households by tenure and units in structure from Table B25032, American Community Survey, 2013-2017 5-Year Estimates.
3. Total population in households from Table B25033, American Community Survey, 2013-2017 5-Year Estimates.
4. Vehicle trips ends based on persons using formulas from Trip Generation (ITE 2017). For single-family housing (ITE 210), the fitted curve equation is EXP(0.89*LN(persons)+1.72). To approximate the average population of the ITE studies, persons were divided by 42 and the equation result multiplied by 42. For multi-family housing (ITE 221) and mobile home (ITE 240), the fitted curve equation is (3.47*persons)-64.48.
5. Vehicle trip ends based on vehicles available using formulas from Trip Generation (ITE 2017). For single-family housing (ITE 210), the fitted curve equation is EXP(0.99*LN(vehicles)+1.93). To approximate the average number of vehicles in the ITE studies, vehicles available were divided by 61 and the equation result multiplied by 61. For multi-family housing (ITE 221) and mobile home (ITE 240), the fitted curve equation is (3.94*vehicles)+293.58.
6. Housing units from Table B25024, American Community Survey, 2013-2017 5-Year Estimates.

Nonresidential Trip Generation Rates

For nonresidential development, TischlerBise uses trip generation rates published in Trip Generation, Institute of Transportation Engineers, 10th Edition (2017). The prototype for industrial development is Light Industrial (ITE 110) which generates 4.96 average weekday vehicle trip ends per 1,000 square feet of floor area. Assisted living development uses Assisted Living (ITE 254) as a proxy and generates 2.60 average weekday vehicle trip ends per bed. For hotel development, the proxy is Hotel (ITE 310), and this type of development generates 8.36 average weekday vehicle trip ends per room. Institutional development uses Hospital (ITE 610) and generates 10.72 average weekday vehicle trip ends per 1,000 square feet of floor area. For office & other services development, the proxy is General Office (ITE 710), and it generates 9.74 average weekday vehicle trip ends per 1,000 square feet of floor area. The prototype for commercial development is Shopping Center (ITE 820) which generates 37.75 average weekday vehicle trips per 1,000 square feet of floor area.

Figure S2: Average Weekday Vehicle Trip Ends by Land Use

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
320	Motel	room	3.35	25.17	0.13	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
730	Government Office	1,000 Sq Ft	22.59	7.45	3.03	330
750	Office Park	1,000 Sq Ft	11.07	3.54	3.13	320
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).

Trip Rate Adjustments

To calculate Street Facilities 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 in this section, the development 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 59 percent to account for commuters leaving Kingman 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 S3, the U.S. Census Bureau's OnTheMap web application indicates 57 percent of resident workers traveled outside of Kingman for work in 2017. In combination, these factors (0.31 x 0.50 x 0.57 = 0.09) support the additional nine percent allocation of trips to residential development.

Figure S3: Commuter Trip Adjustment

Trip Adjustment Factor for Commuters[1]	
Employed Residents	11,710
Residents Living and Working in Kingman	5,088
Residents Commuting Outside Kingman for Work	6,622
Percent Commuting out of Kingman	57%
Additional Production Trips[2]	9%
Residential Trip Adjustment Factor	59%

1. U.S. Census Bureau, OnTheMap Application (version 6.6) and LEHD Origin-Destination Employment Statistics, 2017.

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 2017 indicate that 57 percent of Kingman's workers travel outside the city for work. In combination, these factors (0.3099 x 0.50 x 57 = 0.09) account for 9 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 (9 percent of production trips) for a total of 59 percent.
*http://nhts.ornl.gov/publications.shtml ; Summary of Travel Trends - Table "Daily Travel Statistics by Weekday vs. Weekend"

Adjustment for Pass-By Trips

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

Average Weekday Vehicle Trips

Shown below in Figure S4, multiplying average weekday vehicle trip ends and trip adjustment factors (discussed on the previous page) by Kingman's existing development units provides the average weekday vehicle trips generated by existing development. As shown below, Kingman's existing development generates 106,341 vehicle trips on an average weekday.

Figure S4: Average Weekday Vehicle Trips by Land Use

Development Type	Development Unit	ITE Code	Avg Wkday VTE	Trip Adjustment	2020 Dev Units	2020 Veh Trips
Single Family	HU	210	8.57	59%	10,970	55,468
Multi-Family	HU	221	5.06	59%	1,884	5,624
Mobile Home	HU	240	5.50	59%	848	2,752
All Other	HU	-	3.74	59%	36	79
Industrial	KSF	130	4.96	50%	752	1,866
Commercial	KSF	820	37.75	33%	2,075	25,851
Office & Other Services	KSF	710	9.74	50%	1,143	5,568
Institutional	KSF	520	10.72	33%	2,582	9,133
Total						106,341

National Average Trip Length

To calculate Street Facilities fees, it is necessary to determine the average trip length on Kingman's arterial network. To do this, the analysis uses national trip generation rates and average trip lengths from the 2017 National Household Travel Survey.

Figure S5: National Average Trip Lengths

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

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

Expected Vehicle Miles Traveled

The national average trip length should be adjusted to reflect actual local demand on the Kingman's arterial network. To do this, TischlerBise determines expected demand (VMT) on the Kingman's complete transportation network by multiplying the national average trip lengths by average weekday vehicle trips. Based on this analysis, Kingman's existing development generates an expected 1,119,322 VMT.

Figure S6: Expected Vehicle Miles Traveled

Land Use	Avg Weekday Vehicle Trips[1]	National Avg Trip Length (miles)[2]	Expected VMT[3]
Single Family	55,468	12.32	683,361
Multi-Family	5,624	12.32	69,294
Mobile Home	2,752	12.32	33,902
All Other	79	12.32	979
Industrial	1,866	7.70	14,369
Commercial	25,851	7.90	204,223
Office & Other Services	5,568	7.70	42,873
Institutional	9,133	7.70	70,322
Total			1,119,322

1. Average weekday vehicle trips from Figure S4
2. 2017 National Household Transportation Survey
3. TischlerBise calculation, Average Weekday Vehicle Trips X National Average Trip Length

Local Adjustment Factor

Expected VMT reflects anticipated travel demand on the entire roadway system; therefore, it is necessary to calibrate demand to the arterial system. To calibrate demand on the arterial system, actual travel demand, based on local traffic counts provided by the City of Kingman (Appendix E), is compared to expected travel demand. The ratio between actual VMT and expected VMT provides the local adjustment factor used to adjust national average trip lengths by type of land use.

Figure S7: Local Adjustment Factor

Local Adjustment Factor	
Actual VMT on Arterials[1]	238,413
Expected VMT on Arterials	1,119,322
Actual to Expected VMT	0.21

1. TischlerBise analysis of trip counts provided by the City of Kingman, AZ

Local Trip Lengths

Shown below in Figure S8, TischlerBise applies the local adjustment factor to the national average trip lengths to calculate the local trip lengths. The analysis will use the local trip lengths shown below to calculate vehicle miles traveled.

Figure S8: Local Trip Lengths

Land Use	National Avg Trip Length (miles)	Local Adjustment	Local Trip Length
Residential	12.32	0.21	2.62
Industrial	7.70	0.21	1.64
Commercial/Retail	7.90	0.21	1.68
Office and Other	7.70	0.21	1.64
Institutional	7.70	0.21	1.64

Source: 2017 NHTS and TischlerBise analysis; local adjustment from Figure S7

Local Vehicle Miles Traveled

Shown below are the demand indicators for residential and nonresidential land uses related to vehicle miles traveled (VMT). For residential development, the table displays VMT per housing unit. For nonresidential development, the table displays VMT generated per 1,000 square feet of floor area (per room for Hotel, and per bed for Assisted Living).

Figure S9: Ratio of Service Unit to Development Unit

Residential Development				
Development Type	AWVTE per unit[1]	Trip Adjustment[1]	Average Trip Length (miles)	Avg Wkdy VMT per Unit
Single Family	8.57	59%	2.62	13.27
Multi-Family	5.06	59%	2.62	7.83
Mobile Home	5.50	59%	2.62	8.52
All Other	3.74	59%	2.62	5.79

Nonresidential Development				
Development Type	AWVTE per 1,000 Sq Ft[1]	Trip Adjustment[1]	Average Trip Length (miles)	Avg Wkdy VMT per 1,000 Sq Ft[1]
Industrial	4.96	50%	1.64	4.07
Commercial	37.75	33%	1.68	20.96
Office & Other Services	9.74	50%	1.64	7.99
Institutional	10.72	33%	1.64	5.80
Hotel (per room)	8.36	50%	1.68	7.03
Assited Living (per bed)	2.60	50%	1.64	2.13

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."*

As shown in Appendix E, the City of Kingman provided an inventory of arterial road segments, including segment lengths, lane quantities, and average daily traffic (ADT) counts. Multiplying each segment's length by the number of lanes yields the number of lane miles per segment, and multiplying the traffic counts and segment lengths provides the average weekday vehicle miles traveled (VMT). Kingman's arterial road network consists of 65.72 lane miles and 238,413 VMT.

Shown below, Figure S10 documents the capacity of Kingman's arterial road network. Based on the Prospector Street Interim Roadway & I-40 Grade Separation Feasibility Study, Kingman's arterial road network is designed to operate at Level of Service D or better. The Prospector Street Interim Roadway & I-40 Grade Separation Feasibility Study suggests a mile segment of an arterial road operating at Level of Service D should maintain a daily volume ranging from 12,300 vehicles for a two-lane arterial without left-turn lanes (6,150 vehicles per lane) to 32,700 vehicles for a four-lane arterial with raised medians and left-turn lanes (8,175 vehicles per lane). Applying these capacities to Kingman's arterial road network shown in Appendix E generates arterial capacity of 507,611 vehicle miles of capacity (VMC) and a weighted average of 7,724 vehicles per lane (507,611 VMC / 65.72 arterial lane miles).

As noted above, current daily volume on Kingman's arterial road network is approximately 238,413 VMT. The resulting VMC to VMT ratio is 2.13 (507,611 VMC / 238,413 VMT). The baseline VMC / VMT ratio for any incremental expansion method is 1.0 (i.e., VMC = VMT); therefore, the current ratio of 2.13 exceeds the current LOS ensuring new capacity built with development fee funds will not exceed the current LOS.

Figure S10: Arterial Network Capacity and Usage

Arterial Capacity Ratio	
Total Arterial Lane Miles	65.72
Capacity per Lane Mile[1]	7,724
Vehicle Miles of Capacity	507,611
Vehicle Miles of Travel	238,413
VMC / VMT Ratio	2.13

1. Weighted average based on capacities listed in Prospector Street Interim Roadway & I-40 Grade Separation Feasibility Study, LOS D

Arterials – Incremental Expansion

The City of Kingman provided a list of potential growth-related arterial projects it intends to construct within the next 10 years. Based on the eligible cost of the potential arterial projects (total cost less other funding sources such as development agreements and grants), the weighted average cost is $979,716 per lane mile ($21,348,013 eligible cost / 21.79 lane miles). Kingman may use development fees to construct these projects or to construct additional projects similar to these projects.

Figure S11: Potential Arterial Projects

Description	Total Cost	Eligible Cost[1]	New Lanes	Miles	Lane Miles	$ per Lane Mile
Eastern St	$10,685,750	$7,708,123	3	1.64	4.92	$1,566,692
Kingman Crossing Blvd	$4,613,000	$1,613,000	3	1.50	4.50	$358,444
Rancho Santa Fe Pkwy (Louise to TI)	$2,431,911	$1,215,956	4	0.39	1.56	$779,459
Rancho Santa Fe Pkwy (Santa Rosa to Airway)	$4,300,000	$2,150,000	2	0.75	1.50	$1,433,333
Stockton Hill Rd Widening	$1,900,000	$1,250,000	1	0.28	0.28	$4,464,286
Airway Ave (Prospector to City Park)	$1,199,959	$599,979	4	0.33	1.32	$454,530
Airway Ave (City Park to RSF)	$3,500,000	$1,750,000	2	0.67	1.34	$1,305,970
Hualapai Mtn. Rd (Seneca to Fripps)	$321,000	$321,000	1	0.17	0.17	$1,888,235
Rancho Santa Fe Pkwy (Airway to Industrial)	$6,683,000	$3,341,500	2	2.30	4.60	$726,413
Rancho Santa Fe Pkwy (TI to Santa Rosa)	$2,796,911	$1,398,455	4	0.40	1.60	$874,034
Total	$38,431,531	$21,348,013			21.79	$979,716

Source: Kingman Public Works Department

1. Excludes other funding sources (development agreements, grants, etc.)

To allocate the proportionate share of demand for arterials to residential and nonresidential development, this analysis uses trip generation rates, trip adjustment factors, trip length weighting factors, and average trip lengths shown in Figure S9. Kingman's existing LOS is 1.2947 lane miles per 10,000 VMT (65.72 lane miles / 2.13 capacity ratio / (238,413 VMT / 10,000 VMT)). Based on a weighted average cost of $979,716 per lane mile, the arterial cost is $126.84 per VMT (65.72 lane miles / 2.13 capacity ratio / 238,413 VMT X $979,716 per lane mile).

Figure S12: Arterial Level of service

Cost Factors	
Weighted Average per Lane Mile	$979,716

Level-of-Service (LOS) Standards	
Existing Lane Miles	65.72
÷ VMC / VMT Ratio	2.13
Adjusted Lane Miles	30.87
2020 VMT	238,413
Lane Miles per 10,000 VMT	1.2947
Cost per VMT	$126.84

Source: Kingman Public Works Department

Improved Intersections – Incremental Expansion

The City of Kingman provided a list of potential growth-related intersection improvements it intends to construct within the next 10 years. Based on the total cost of the potential improved intersections, the weighted average cost is $654,500 per improved intersection ($3,927,000 total cost / six improved intersections). Kingman may use development fees to construct the projects shown below or to construct additional improved intersections similar to the projects shown below.

Figure S13: Potential Improved Intersections

Description	Units	Unit Cost	Total Cost
Airway Ave & Stockton Hill	4	$410,000	$1,640,000
KC Blvd & Southern Roundabout	1	$1,218,000	$1,218,000
KC Blvd & Louise Roundabout	1	$1,069,000	$1,069,000
Total	6	$654,500	$3,927,000

To allocate the proportionate share of demand for improved intersections to residential and nonresidential development, this analysis uses trip generation rates, trip adjustment factors, trip length weighting factors, and average trip lengths shown in Figure S9. Kingman's existing LOS is 0.9647 improved intersections per 10,000 VMT (23.0 improved intersections / (238,413 VMT / 10,000 VMT)). Based on a weighted average cost of $654,500 per improved intersection, the improved intersections cost is $63.14 per VMT (23.0 improved intersections / 238,413 VMT X $654,500 per improved intersection).

Figure S14: Improved Intersection Level of service

Cost Factors	
Weighted Average per Intersection	$654,500

Level-of-Service (LOS) Standards	
Existing Improved Intersections	23.0
2020 VMT	238,413
Imp. Intersections per 10,000 VMT	0.9647
Cost per VMT	$63.14

Source: Kingman Public Works Department

Development Fee Report – Plan-Based

The cost to prepare the Street Facilities IIP and related Development Fee Report totals $16,600. Kingman plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of new residential and nonresidential development from the *Land Use Assumptions* document, the cost is $0.87 per VMT.

Figure S15: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Street	$16,600	All Development	100%	VMT	18,997	$0.87

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(5) requires:

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

ARS § 9-463.05(E)(6) requires:

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

As shown in the *Land Use Assumptions* document, Kingman's population is expected to increase by 5,996 persons and employment is expected to increase by 1,166 jobs over the next 10 years. Based on the trip generation factors discussed in this section, projected development generates an additional 37,995 VMT over the next 10 years. Shown below in Figure S16, Kingman will need to construct approximately 4.9 lane miles of arterials and approximately 3.7 improved intersections over the next 10 years to maintain the existing levels of service. The growth-related cost of the Street Facilities IIP is $4,819,397 for arterials ($979,716 per arterial lane mile X 4.9 arterial lane miles) and $2,399,015 for improved intersections ($654,500 per improved intersection X 3.7 improved intersections).

Figure S16: Projected Travel Demand

Kingman, Arizona		Base	1	2	3	4	5	10	10-Year
		2020	2021	2022	2023	2024	2025	2030	Increase
Development	Single Family Units	10,970	11,214	11,458	11,702	11,946	12,190	13,410	2,440
	Multi-Family Units	1,884	1,893	1,902	1,911	1,920	1,929	1,974	90
	Mobile Home Units	848	848	848	848	848	848	848	0
	All Other Units	36	36	36	36	36	36	36	0
	Industrial KSF	752	758	763	768	773	779	805	52
	Commercial KSF	2,075	2,090	2,104	2,118	2,133	2,147	2,219	144
	Office & Other Services KSF	1,143	1,151	1,159	1,167	1,175	1,183	1,223	80
	Institutional KSF	2,582	2,600	2,618	2,635	2,653	2,671	2,761	180
Avg Weekday Vehicle Trips	Single-Family Trips	55,468	56,701	57,935	59,169	60,403	61,636	67,805	12,337
	Multi-Family Trips	5,624	5,651	5,678	5,705	5,732	5,759	5,893	269
	Mobile Home Trips	2,752	2,752	2,752	2,752	2,752	2,752	2,752	0
	All Other Trips	79	79	79	79	79	79	79	0
	Residential Trips	63,923	65,184	66,445	67,705	68,966	70,226	76,529	12,606
	Industrial Trips	1,866	1,879	1,892	1,905	1,918	1,931	1,996	130
	Commercial Trips	25,851	26,031	26,211	26,390	26,570	26,750	27,649	1,798
	Office & Other Services Trips	5,568	5,607	5,645	5,684	5,723	5,762	5,955	387
	Institutional Trips	9,133	9,196	9,260	9,323	9,387	9,450	9,768	635
	Nonresidential Trips	42,418	42,713	43,008	43,303	43,598	43,893	45,368	2,950
	Total Vehicle Trips	**106,341**	**107,897**	**109,452**	**111,008**	**112,564**	**114,119**	**121,897**	**15,556**
VMT	**Vehicle Miles Traveled (VMT)**	**238,413**	**242,213**	**246,012**	**249,812**	**253,611**	**257,411**	**276,408**	**37,995**
Demand	Arterial Lane Miles		0.5	0.5	0.5	0.5	0.5	0.5	4.9
	Arterial Cost		$481,940	$481,940	$481,940	$481,940	$481,940	$481,940	$4,819,397
	Improved Intersections		0.4	0.4	0.4	0.4	0.4	0.4	3.7
	Improved Intersection Cost		$239,901	$239,901	$239,901	$239,901	$239,901	$239,901	$2,399,015

STREET FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

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

Street Facilities Development Fees

Infrastructure components and cost factors for Street Facilities are summarized in the upper portion of Figure S17. The cost per service unit for Street Facilities is $190.85 per VMT.

Street Facilities development fees for residential development are assessed according to VMT generated per housing unit. For example, the single-family fee of $2,533 is calculated using a cost per service unit of $190.85 per VMT multiplied by a demand unit of 13.27 average weekday VMT per housing unit.

Nonresidential development fees are calculated using VMT as the service unit. The fee of $4.00 per square foot of commercial development is derived from a cost per service unit of $190.85 per VMT, multiplied by a demand unit of 20.96 average weekday VMT per 1,000 square feet, divided by 1,000.

Figure S17: Schedule of Street Facilities Development Fees

Fee Component	Cost per VMT
Arterials	$126.84
Improved Intersections	$63.14
Development Fee Report	$0.87
Total	$190.85

Residential Development	Fees per Unit	
Development Type	Avg Wkdy VMT per Unit[1]	Proposed Fees
Single Family	13.27	$2,533
Multi-Family	7.83	$1,494
Mobile Home	8.52	$1,626
All Other	5.79	$1,105

Nonresidential Development	Fees per Square Foot	
Development Type	Avg Wkdy VMT per 1,000 Sq Ft[1]	Proposed Fees
Industrial	4.07	$0.78
Commercial	20.96	$4.00
Office & Other Services	7.99	$1.52
Institutional	5.80	$1.11
Hotel (per room)	7.03	$1,342
Assited Living (per bed)	2.13	$407

1. See Land Use Assumptions

Street Facilities Development Fee Revenue

Appendix A contains revenue forecasts required by Arizona's Enabling Legislation (ARS § 9-463.05(E)(7)). Projected fee revenue shown in Figure S18 is based on the development projections in the *Land Use Assumptions* document and the updated Street 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 equals approximately $7.23 million, and projected expenditures equal approximately $7.24 million.

Figure S18: Projected Revenue from Street Facilities Development Fees

Fee Component	Growth Share	Existing Share	Total
Arterials	$4,819,397	$0	$4,819,397
Improved Intersections	$2,399,015	$0	$2,399,015
Development Fee Report	$16,600	$0	$16,600
Total	$7,235,012	$0	$7,235,012

		Single Family $2,533 per unit	Multi-Family $1,494 per unit	Industrial $0.78 per sq ft	Commercial $4.00 per sq ft	Office & Other $1.52 per sq ft	Institutional $1.11 per sq ft
Year		Hsg Unit	Hsg Unit	KSF	KSF	KSF	KSF
Base	2020	10,970	1,884	752	2,075	1,143	2,582
Year 1	2021	11,214	1,893	758	2,090	1,151	2,600
Year 2	2022	11,458	1,902	763	2,104	1,159	2,618
Year 3	2023	11,702	1,911	768	2,118	1,167	2,635
Year 4	2024	11,946	1,920	773	2,133	1,175	2,653
Year 5	2025	12,190	1,929	779	2,147	1,183	2,671
Year 6	2026	12,434	1,938	784	2,162	1,191	2,689
Year 7	2027	12,678	1,947	789	2,176	1,199	2,707
Year 8	2028	12,922	1,956	794	2,191	1,207	2,725
Year 9	2029	13,166	1,965	800	2,205	1,215	2,743
Year 10	2030	13,410	1,974	805	2,219	1,223	2,761
10-Year Increase		2,440	90	52	144	80	180
Projected Revenue		$6,165,509	$134,188	$40,557	$574,730	$120,977	$198,296

Projected Fee Revenue	$7,234,258
Total Expenditures	$7,235,012

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

Kingman 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 Kingman 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.

We will develop this prior to starting the adoption process.

APPENDIX B: PROFESSIONAL SERVICES

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

Figure B1: Cost of Professional Services

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Fire	$12,100	Residential	94%	Population	2,998	$3.78
		Nonresidential	6%	Jobs	583	$1.31
Parks and Recreational	$10,200	Residential	93%	Population	2,998	$3.16
		Nonresidential	7%	Jobs	583	$1.22
Police	$12,100	Residential	72%	Population	2,998	$2.91
		Nonresidential	28%	Vehicle Trips	1,475	$2.30
Street	$16,600	All Development	100%	VMT	18,997	$0.87
Total	$51,000					

APPENDIX C: LAND USE DEFINITIONS

RESIDENTIAL DEVELOPMENT

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

Single Family:

1. Single-family detached is a one-unit structure detached from any other house, that is, with open space on all four sides. Such structures are considered detached even if they have an adjoining shed or garage. A one-family house that contains a business is considered detached as long as the building has open space on all four sides.
2. Single-family attached (townhouse) is a one-unit structure that has one or more walls extending from ground to roof separating it from adjoining structures. In row houses (sometimes called townhouses), double houses, or houses attached to nonresidential structures, each house is a separate, attached structure if the dividing or common wall goes from ground to roof.

Multi-Family: 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."

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.

All Other: includes any living quarters occupied as a housing unit that does not fit the other categories (e.g., houseboats, railroad cars, campers, and vans). Recreational vehicles, boats, vans, railroad cars, and the like are included only if they are occupied as a current place of residence.

NONRESIDENTIAL DEVELOPMENT

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

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

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

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

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

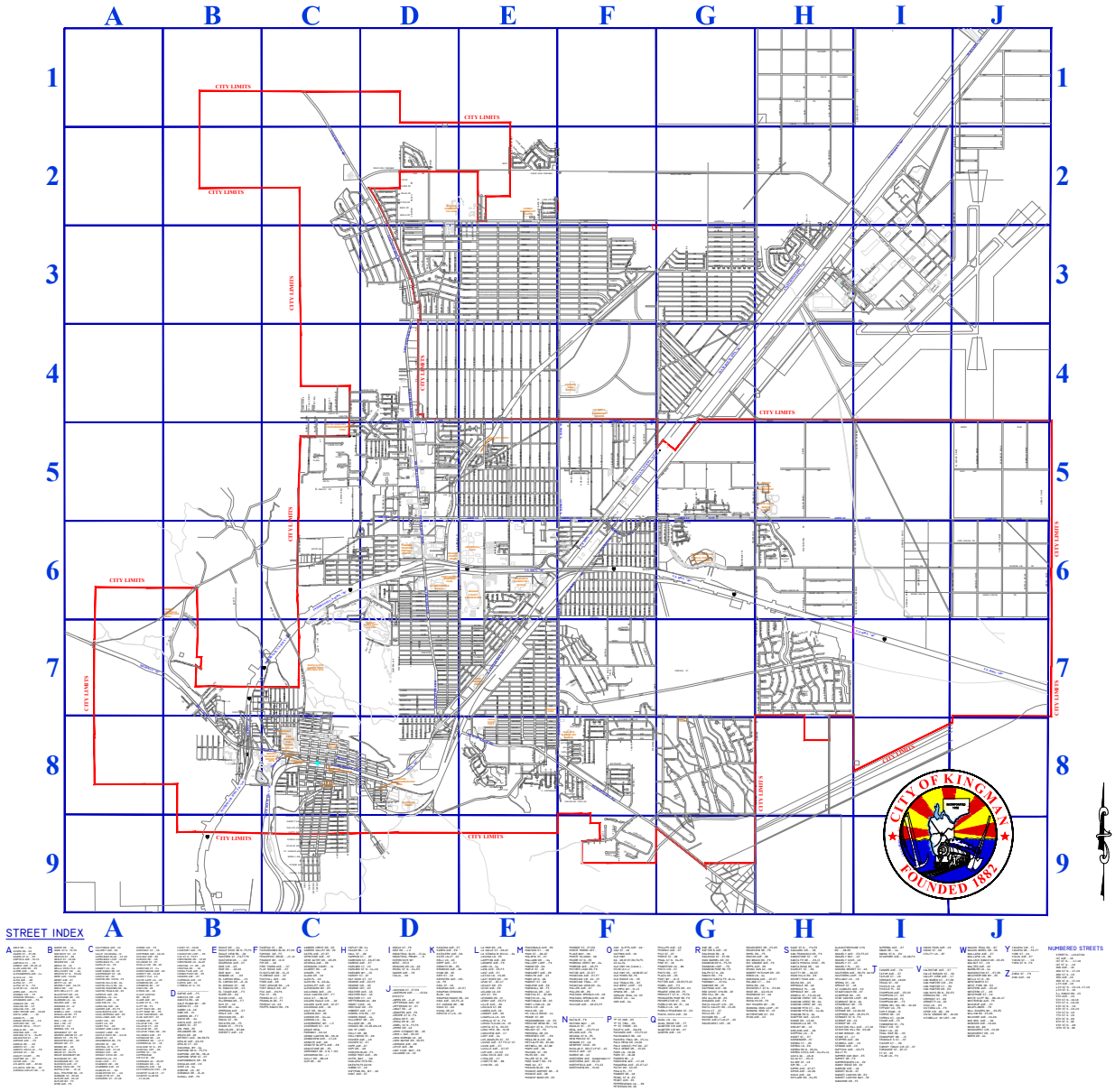
Institutional: Public and quasi-public buildings providing educational, social assistance, or religious services. By way of example, *Institutional* includes schools, universities, churches, daycare facilities, hospitals, and government buildings.

Office & Other Services: Establishments providing management, administrative, professional, or business services. By way of example, *Office & Other Services* includes banks, business offices, medical offices, and veterinarian clinics.

APPENDIX D: 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 Kingman. The map below illustrates the areas within the City of Kingman Service Area boundaries.

CITY OF KINGMAN STREET LOCATION MAP



TischlerBise
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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 Kingman, Arizona, retained TischlerBise to analyze the impacts of development on its capital facilities and to calculate development fees based on that analysis. TischlerBise prepared current demographic estimates and future development projections for both residential and nonresidential development that will be used in the Infrastructure Improvements Plan (IIP) and the calculation of development fees. Current demographic data estimates for 2020 are used in calculating levels of service (LOS) provided to existing development in the City of Kingman. 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 Kingman Development Fee Report are population, housing units, and employment projections. Based on discussions with staff, TischlerBise projects housing unit growth using building permit data from the previous five years – this averages 244 single-family units and nine multi-family units annually. TischlerBise projects population by converting annual housing unit increases to population using persons per housing unit factors. For nonresidential development, the analysis uses Esri Business Analyst's 2019 employment estimate and projects future employment based on recent construction trends. The projections contained in this document are the service units and demand indicators used in the Development Fee Report.

Development projections and growth rates are summarized in Figure D15. 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, fee revenue will increase, but Kingman will also need to accelerate infrastructure improvements to keep pace with the actual rate of development. During the next 10 years, residential development projections indicate a resident population increase of 5,996 persons in 2,530 housing units, and nonresidential development projections indicate an employment increase of 1,166 jobs in approximately 456,000 square feet of floor area.

RESIDENTIAL DEVELOPMENT

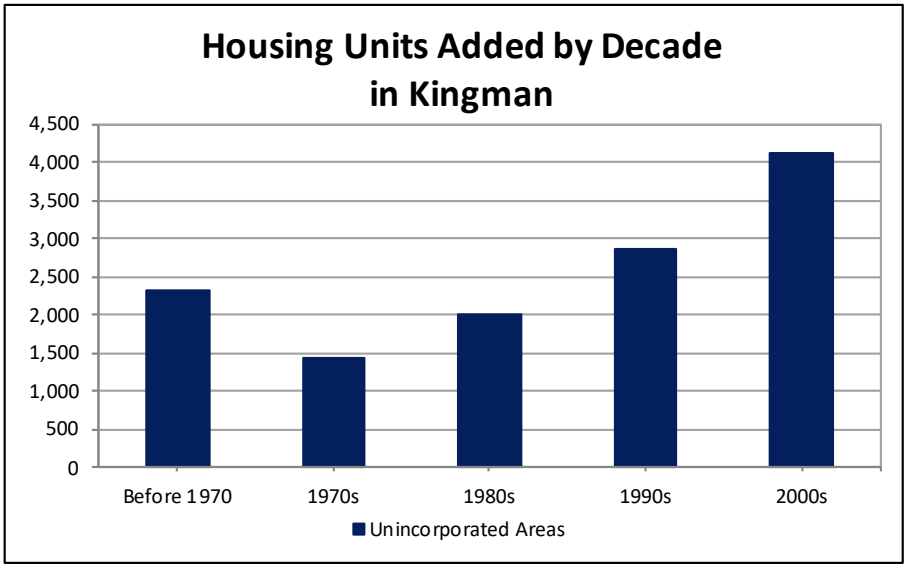
This section details current estimates and future projections of residential development including population and housing units.

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 D1 indicates the estimated number of housing units added by decade according to data obtained from the U.S. Census Bureau. In the previous decade, Kingman's housing inventory increased by an average of 412 units per year.

Figure D1: Housing Units by Decade

Census 2000 Housing Units	8,604	Kingman's housing stock grew by an average of 412 housing units per year from 2000 to 2010.
Census 2010 Housing Units	12,724	
New Housing Units 2000 to 2010	4,120	



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).

Residential construction from 2015-2019 averaged 253 units per year – 244 single-family units and nine multi-family units.

Figure D2: Recent Residential Construction

Year	Single Family	Multi-Family	Total
2015	205	2	207
2016	179	0	179
2017	280	14	294
2018	273	9	282
2019	285	18	303
Average	244	9	253

Source: Kingman Planning & Economic Development Dept

Housing Unit 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 Kingman be imposed according to the number of persons per housing unit.

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

Figure D3 below shows the occupancy estimates for Kingman based on 2013-2017 American Community Survey 5-Year Estimates. Single-family units averaged 2.40 persons per housing unit, multi-family units averaged 1.55 persons per housing unit, mobile homes averaged 1.47 persons per housing unit, and all other units averaged 1.00 person per housing unit. The average occupancy for all housing units in Kingman was 2.22 persons per housing unit.

Figure D3: Persons per Housing Unit

Housing Type	Persons	Households	Persons per Household	Housing Units	Persons per Housing Unit	Housing Mix	Vacancy Rate
Single-Family[1]	23,478	8,888	2.64	9,788	**2.40**	79.2%	9.19%
Multi-Family[2]	2,704	1,489	1.82	1,746	**1.55**	14.1%	14.72%
Mobile Home	1,174	647	1.81	797	**1.47**	6.4%	18.82%
All Other[3]	34	34	1.00	34	**1.00**	0.3%	0.00%
Total	27,390	11,058	2.48	12,365	**2.22**	100.0%	10.57%

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

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

Residential Estimates

According to Arizona's Office of Economic Opportunity, Kingman's 2018 population was 30,600 persons. Deducting the population in group quarters, based on estimates from the American Community Survey, leaves a resident population of 29,135 persons. Dividing the resident population by the citywide occupancy factor of 2.22 persons per housing unit results in an estimate of 13,153 housing units in 2018. Allocating the housing mix shown in Figure D3 to the 2018 housing unit estimate results in 10,412 single-family units, 1,857 multi-family units, 848 mobile homes, and 36 other units. Finally, adding housing units constructed in 2018 and 2019, shown in Figure D2, to the 2018 housing unit estimate results in a 2020 estimate of 13,738 housing units.

To estimate population in the 2020 base year, the analysis applies the occupancy factors shown in Figure D3 to the 2020 housing unit estimates shown below in Figure D4. For example, 10,970 single-family housing units multiplied by 2.40 persons per housing unit results in a 2020 single-family population of 26,328 persons. The analysis assumes the group quarters population remains stable, so the 2020 resident population estimate is 30,531 persons.

Figure D4: Residential Estimates

Kingman, Arizona	2018	2019	2020
Population			
Group Quarters[1]	1,465	1,465	1,465
Resident	29,135	29,819	30,531
Total[2]	**30,600**	**31,284**	**31,996**
Resident Population			
Single Family	24,974	25,644	26,328
Multi-Family	2,876	2,892	2,920
Mobile Home	1,249	1,247	1,247
All Other	36	36	36
Total	**29,135**	**29,819**	**30,531**
Housing Units			
Single Family	10,412	10,685	10,970
Multi-Family	1,857	1,866	1,884
Mobile Home	848	848	848
All Other	36	36	36
Total	**13,153**	**13,435**	**13,738**

1. U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates
2. Arizona Office of Economic Opportunity, 2018 population estimate

Residential Projections

Based on discussions with Kingman staff, the analysis uses the five-year residential construction trend shown in Figure D2 to project housing units over the next 10 years – 244 single-family units per year and nine multi-family units per year. Based on these projections, Kingman can expect 2,530 additional housing units over the next 10 years. For this study, the analysis assumes the occupancy factors shown in Figure D3 will remain constant. Converting projected housing units to population, as discussed above, results in a 10-year population increase of 5,996 persons.

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

Figure D5: Residential Development Projections

Kingman, Arizona	2020	2021	2022	2023	2024	2025	2030	10-Year
	Base Year	1	2	3	4	5	10	Increase
Population								
Group Quarters	1,465	1,465	1,465	1,465	1,465	1,465	1,465	0
Resident	30,531	31,130	31,730	32,329	32,929	33,529	36,527	5,996
Total	**31,996**	**32,595**	**33,195**	**33,794**	**34,394**	**34,994**	**37,992**	**5,996**
Resident Population								
Single Family	26,328	26,914	27,499	28,085	28,670	29,256	32,184	5,856
Multi-Family	2,920	2,934	2,948	2,962	2,976	2,990	3,060	140
Mobile Home	1,247	1,247	1,247	1,247	1,247	1,247	1,247	0
All Other	36	36	36	36	36	36	36	0
Total	**30,531**	**31,130**	**31,730**	**32,329**	**32,929**	**33,529**	**36,527**	**5,996**
Housing Units								
Single Family	10,970	11,214	11,458	11,702	11,946	12,190	13,410	2,440
Multi-Family	1,884	1,893	1,902	1,911	1,920	1,929	1,974	90
Mobile Home	848	848	848	848	848	848	848	0
All Other	36	36	36	36	36	36	36	0
Total	**13,738**	**13,991**	**14,244**	**14,497**	**14,750**	**15,003**	**16,268**	**2,530**

NONRESIDENTIAL DEVELOPMENT

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

Nonresidential Square Footage Estimates

TischlerBise uses the term jobs to refer to employment by place of work. In Figure D6, gray shading indicates the nonresidential development prototypes used by TischlerBise to derive employment densities and average weekday vehicle trip ends. For nonresidential development, TischlerBise uses data published in Trip Generation, Institute of Transportation Engineers, 10th Edition (2017). The prototype for industrial development is Light Industrial (ITE 110) which generates 4.96 average weekday vehicle trip ends per 1,000 square feet of floor area and has 615 square feet of floor area per employee. Assisted living development uses Assisted Living (ITE 254) as a proxy and generates 2.60 average weekday vehicle trip ends per bed. For hotel development, the proxy is Hotel (ITE 310), and this type of development generates 8.36 average weekday vehicle trip ends per room. Institutional development uses Hospital (ITE 610) and generates 10.72 average weekday vehicle trip ends per 1,000 square feet of floor area and has 354 square feet of floor area per employee. For office & other services development, the proxy is General Office (ITE 710); it generates 9.74 average weekday vehicle trip ends per 1,000 square feet of floor area and has 337 square feet of floor area per employee. The prototype for commercial development is Shopping Center (ITE 820) which generates 37.75 average weekday vehicle trips per 1,000 square feet of floor area and has 427 square feet of floor area per employee.

Figure D6: Nonresidential Demand Units

ITE Code	Land Use / Size	Demand Unit	Wkdy Trip Ends Per Dmd Unit[1]	Wkdy Trip Ends Per Employee[1]	Emp Per Dmd Unit	Sq Ft Per Emp
110	Light Industrial	1,000 Sq Ft	4.96	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
320	Motel	room	3.35	25.17	0.13	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
730	Government Office	1,000 Sq Ft	22.59	7.45	3.03	330
750	Office Park	1,000 Sq Ft	11.07	3.54	3.13	320
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 Estimates

TischlerBise uses the term jobs to refer to employment by place of work. Shown below in Figure D7, Esri Business Analyst estimates 2019 employment equal to 16,652 jobs. Applying the employment multipliers shown in Figure D6 to employment estimates shown in Figure D7 results in a nonresidential floor area estimate of 6,506,948 square feet. Based on data provided by the Mohave County Tax Assessor, nonresidential floor area increased by an average of 45,572 square feet per year between 2015 and 2019. To estimate nonresidential floor area in 2020, the analysis adds 45,572 square feet to the 2019 estimate – this results in 6,552,520 square feet of nonresidential floor area in 2020. To estimate 2020 employment, the analysis divides the 2020 nonresidential floor area estimates for each nonresidential category by the related square feet per employee factors shown in Figure D6. The 2020 base year employment estimate equals 16,769 jobs.

Figure D7: Nonresidential Estimates

Nonresidential Category	2019 Jobs[1]	Percent of Total Jobs	Square Feet per Job[2]	2019 Estimated Floor Area[3]	Jobs per 1,000 Sq. Ft.[2]
Industrial[4]	1,215	7%	615	747,225	1.63
Commercial[5]	4,826	29%	427	2,060,702	2.34
Office & Other Service[6]	3,369	20%	337	1,135,353	2.97
Institutional[7]	7,242	43%	354	2,563,668	2.83
Total	16,652	100%		6,506,948	

1. Esri Business Analyst, 2019.
2. Trip Generation, Institute of Transportation Engineers, 10th Edition (2017).
3. TischlerBise calculation (2019 jobs X square feet per job).
4. Major sectors are Transportation & Warehousing; Manufacturing.
5. Major sectors are Retail; Accommodation & Food Services.
6. Major sectors are Real Estate, Rental & Leasing; Other Services.
7. Major sectors are Health Care; Public Administration.

Nonresidential Category	2020 Jobs[1]	Percent of Total Jobs	Square Feet per Job[2]	2020 Estimated Floor Area[3]	Jobs per 1,000 Sq. Ft.[2]
Industrial[4]	1,224	7%	615	752,458	1.63
Commercial[5]	4,860	29%	427	2,075,134	2.34
Office & Other Service[6]	3,393	20%	337	1,143,304	2.97
Institutional[7]	7,293	43%	354	2,581,623	2.82
Total	16,769	100%		6,552,520	

1. TischlerBise calculation (2020 floor area / square feet per job)
2. Trip Generation, Institute of Transportation Engineers, 10th Edition (2017).
3. TischlerBise calculation (2019 floor area + 45,572 square feet).
4. Major sectors are Transportation & Warehousing; Manufacturing.
5. Major sectors are Retail; Accommodation & Food Services.
6. Major sectors are Real Estate, Rental & Leasing; Other Services.
7. Major sectors are Health Care; Public Administration.

Nonresidential Projections

To project future nonresidential development in each year of the development projections, the analysis uses the average annual increase of 45,572 square feet, based on Mohave County Tax Assessor data. The annual increase is then allocated, by industry type, based on each industry type's share of nonresidential floor area in 2020. Shown below in Figure D8, this results in a 10-year increase of 456,000 square feet of nonresidential floor area.

To project employment, TischlerBise divides the projected nonresidential floor area by the square feet per employee factors shown in Figure D6. Over the next 10 years, Kingman is projected to gain 1,166 jobs and 456,000 square feet of nonresidential floor area.

Figure D8: Nonresidential Development Projections

Kingman, Arizona	2020	2021	2022	2023	2024	2025	2030	10-Year
	Base Year	1	2	3	4	5	10	Increase
Employment								
Industrial	1,224	1,232	1,241	1,249	1,258	1,266	1,309	85
Commercial	4,860	4,894	4,927	4,961	4,995	5,029	5,198	338
Office & Other Services	3,393	3,416	3,440	3,463	3,487	3,511	3,629	236
Institutional	7,293	7,343	7,394	7,445	7,496	7,546	7,800	507
Total	**16,769**	**16,885**	**17,002**	**17,118**	**17,235**	**17,352**	**17,935**	**1,166**
Nonres. Floor Area (x1,000)								
Industrial	752	758	763	768	773	779	805	52
Commercial	2,075	2,090	2,104	2,118	2,133	2,147	2,219	144
Office & Other Services	1,143	1,151	1,159	1,167	1,175	1,183	1,223	80
Institutional	2,582	2,600	2,618	2,635	2,653	2,671	2,761	180
Total	**6,553**	**6,598**	**6,644**	**6,689**	**6,735**	**6,780**	**7,008**	**456**

VEHICLE MILES TRAVELED

Kingman will use vehicle miles traveled (VMT) as the demand units for Street Facilities fees and it will use average weekday vehicle trips (AWVT) for Police Facilities fees. Components used to determine VMT include average weekday vehicle trip generation rates, adjustments for commuting patterns and pass-by trips, and trip length weighting factors.

Residential Trip Generation Rates

As an alternative to simply using the national average trip generation rate for residential development, the ITE publishes regression curve formulas that may be used to derive custom trip generation rates, using local demographic data. Key independent variables needed for the analysis (i.e. vehicles available, housing units, households, and persons) are available from American Community Survey data. Shown in Figure D9, single-family units generate 8.57 average weekday vehicle trip ends per unit, multi-family units generate 5.06 average weekday vehicle trip ends per unit, mobile homes generate 5.50 average weekday vehicle trip ends per unit, and all other units generate 3.74 average weekday vehicle trip ends per unit.

Figure D9: Average Weekday Vehicle Trip Ends by Housing Type

		Households by Structure Type[2]					
Tenure by Units in Structure	Vehicles Available[1]	Single-Family	Multi-Family	Mobile Home	All Other	Total	Vehicles per HH by Tenure
Owner-Occupied	13,748	6,721	21	472	34	7,248	1.90
Renter-Occupied	5,215	2,167	1,468	175	0	3,810	1.37
Total	18,963	8,888	1,489	647	34	11,058	1.71

Units in Structure	Persons in Households[3]	Trip Ends[4]	Vehicles by Type of Unit	Trip Ends[5]	Average Trip Ends	Housing Units[6]	Trip Ends per Housing Unit
Single-Family	23,478	65,378	15,715	102,419	83,898	9,788	**8.57**
Multi-Family	2,704	9,318	2,049	8,367	8,843	1,746	**5.06**
Mobile Home	1,174	4,009	1,135	4,765	4,387	797	**5.50**
All Other	34	81	64	173	127	34	**3.74**
Total	27,390	78,787	18,963	115,724	97,256	12,365	**7.87**

1. Vehicles available by tenure from Table B25046, American Community Survey, 2013-2017 5-Year Estimates.
2. Households by tenure and units in structure from Table B25032, American Community Survey, 2013-2017 5-Year Estimates.
3. Total population in households from Table B25033, American Community Survey, 2013-2017 5-Year Estimates.
4. Vehicle trips ends based on persons using formulas from Trip Generation (ITE 2017). For single-family housing (ITE 210), the fitted curve equation is EXP(0.89*LN(persons)+1.72). To approximate the average population of the ITE studies, persons were divided by 42 and the equation result multiplied by 42. For multi-family housing (ITE 221) and mobile home (ITE 240), the fitted curve equation is (3.47*persons)-64.48.
5. Vehicle trip ends based on vehicles available using formulas from Trip Generation (ITE 2017). For single-family housing (ITE 210), the fitted curve equation is EXP(0.99*LN(vehicles)+1.93). To approximate the average number of vehicles in the ITE studies, vehicles available were divided by 61 and the equation result multiplied by 61. For multi-family housing (ITE 221) and mobile home (ITE 240), the fitted curve equation is (3.94*vehicles)+293.58.
6. Housing units from Table B25024, American Community Survey, 2013-2017 5-Year Estimates.

Nonresidential Trip Generation Rates

For nonresidential development, TischlerBise uses trip generation rates published in Trip Generation, Institute of Transportation Engineers, 10th Edition (2017). The prototype for industrial development is Light Industrial (ITE 110) which generates 4.96 average weekday vehicle trip ends per 1,000 square feet of floor area. Assisted living development uses Assisted Living (ITE 254) as a proxy and generates 2.60 average weekday vehicle trip ends per bed. For hotel development, the proxy is Hotel (ITE 310), and this type of development generates 8.36 average weekday vehicle trip ends per room. Institutional development uses Hospital (ITE 610) and generates 10.72 average weekday vehicle trip ends per 1,000 square feet of floor area. For office & other services development, the proxy is General Office (ITE 710), and it generates 9.74 average weekday vehicle trip ends per 1,000 square feet of floor area. The prototype for commercial development is Shopping Center (ITE 820) which generates 37.75 average weekday vehicle trips per 1,000 square feet of floor area.

Figure D10: Average Weekday Vehicle Trip Ends by Land Use

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
320	Motel	room	3.35	25.17	0.13	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
730	Government Office	1,000 Sq Ft	22.59	7.45	3.03	330
750	Office Park	1,000 Sq Ft	11.07	3.54	3.13	320
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).

Trip Rate Adjustments

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

Commuter Trip Adjustment

Residential development has a larger trip adjustment factor of 59 percent to account for commuters leaving Kingman 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 D11, the U.S. Census Bureau's OnTheMap web application indicates 57 percent of resident workers traveled outside of Kingman for work in 2017. In combination, these factors (0.31 x 0.50 x 0.57 = 0.09) support the additional nine percent allocation of trips to residential development.

Figure D11: Commuter Trip Adjustment

Trip Adjustment Factor for Commuters[1]	
Employed Residents	11,710
Residents Living and Working in Kingman	5,088
Residents Commuting Outside Kingman for Work	6,622
Percent Commuting out of Kingman	57%
Additional Production Trips[2]	9%
Residential Trip Adjustment Factor	59%

1. U.S. Census Bureau, OnTheMap Application (version 6.6) and LEHD Origin-Destination Employment Statistics, 2017.

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 2017 indicate that 57 percent of Kingman's workers travel outside the city for work. In combination, these factors (0.3099 x 0.50 x 57 = 0.09) account for 9 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 (9 percent of production trips) for a total of 59 percent.
*http://nhts.ornl.gov/publications.shtml ; Summary of Travel Trends - Table "Daily Travel Statistics by Weekday vs. Weekend"

Adjustment for Pass-By Trips

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

Demand Indicators – Average Weekday Vehicle Trips

Shown in Figure D12 are the demand indicators for residential and nonresidential land uses related to average weekday vehicle trips (AWVT). For residential development, the table displays AWVT per housing unit. For nonresidential development, the table displays AWVT generated per 1,000 square feet of floor area (per room for Hotel, and per bed for Assisted Living).

Figure D12: Demand Indicators by Development Type, Average Weekday Vehicle Trips (AWVT)

Residential Development			
Development Type	AWVTE per unit[1]	Trip Adjustment[1]	AWVT per Unit
Single Family	8.57	59%	5.06
Multi-Family	5.06	59%	2.99
Mobile Home	5.50	59%	3.25
All Other	3.74	59%	2.21

Nonresidential Development			
Development Type	AWVTE per 1,000 Sq Ft[1]	Trip Adjustment[1]	AWVT per 1,000 Sq Ft[1]
Industrial	4.96	50%	2.48
Commercial	37.75	33%	12.46
Office & Other Services	9.74	50%	4.87
Institutional	10.72	33%	3.54
Hotel (per room)	8.36	50%	4.18
Assited Living (per bed)	2.60	50%	1.30

1. See Land Use Assumptions

Trip Length Weighting Factor

The development fee methodology includes a percentage adjustment, or weighting factor, to account for trip length variation by type of land use. As documented in Table 6a, Table 6b, and Table 6c of the 2017 National Household Travel Survey, vehicle trips from residential development are approximately 117 percent of the average trip length. The residential trip length adjustment factor includes data on home-based work trips, social, and recreational purposes. Conversely, shopping trips associated with commercial development are roughly 75 percent of the average trip length while other nonresidential development typically accounts for trips that are 73 percent of the average for all trips.

Demand Indicators – Vehicle Miles Traveled

Shown below are the demand indicators for residential and nonresidential land uses related to vehicle miles traveled (VMT). For residential development, the table displays VMT per housing unit. For nonresidential development, the table displays VMT generated per 1,000 square feet of floor area (per room for Hotel, and per bed for Assisted Living).

Figure D13: Demand Indicators by Development Type, Vehicle Miles Traveled (VMT)

Residential Development				
Development Type	AWVTE per unit[1]	Trip Adjustment[1]	Average Trip Length (miles)	Avg Wkdy VMT per Unit
Single Family	8.57	59%	2.62	13.27
Multi-Family	5.06	59%	2.62	7.83
Mobile Home	5.50	59%	2.62	8.52
All Other	3.74	59%	2.62	5.79

Nonresidential Development				
Development Type	AWVTE per 1,000 Sq Ft[1]	Trip Adjustment[1]	Average Trip Length (miles)	Avg Wkdy VMT per 1,000 Sq Ft[1]
Industrial	4.96	50%	1.64	4.07
Commercial	37.75	33%	1.68	20.96
Office & Other Services	9.74	50%	1.64	7.99
Institutional	10.72	33%	1.64	5.80
Hotel (per room)	8.36	50%	1.68	7.03
Assited Living (per bed)	2.60	50%	1.64	2.13

1. See Land Use Assumptions

FUNCTIONAL POPULATION

Functional population is similar to what the U.S. Census Bureau calls "daytime population," which accounts for people living and working in a jurisdiction, but also considers commuting patterns and time spent at home and at nonresidential locations. OnTheMap is a web-based mapping and reporting application that shows where workers are employed and where they live. 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 Kingman are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents who work outside Kingman are assigned 14 hours to residential development, and inflow commuters are assigned 10 hours to nonresidential development. Based on 2017 data for Kingman, residential development is 72 percent of functional population and 28 percent for nonresidential development.

Figure D14: Functional Population

Demand Units in 2017					
Residential				Demand Hours/Day	Person Hours
	Population	29,600			
	Residents Not Working		17,890	20	357,800
	Employed Residents		11,710		
	Employed in Kingman		5,088	14	71,232
	Employed outside Kingman		6,622	14	92,708
				Residential Subtotal	521,740
				Residential Share	**72%**
Nonresidential					
	Non-working Residents		17,890	4	71,560
	Jobs Located in Kingman		12,636		
	Residents Employed in Kingman		5,088	10	50,880
	Non-Resident Workers (inflow commuters)		7,548	10	75,480
				Nonresidential Subtotal	197,920
				Nonresidential Share	**28%**
				Total	719,660

Source: Arizona Office of Economic Opportunity (population), U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics, Version 6.6 (employment).

DEVELOPMENT PROJECTIONS

Provided below is a summary of development projections used in the Development Fee Report. Base year estimates for 2020 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 D15: Development Projections Summary

Kingman, Arizona	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10-Year
	Base Year	1	2	3	4	5	6	7	8	9	10	Increase
Resident Population												
Single Family	26,328	26,914	27,499	28,085	28,670	29,256	29,842	30,427	31,013	31,598	32,184	5,856
Multi-Family	2,920	2,934	2,948	2,962	2,976	2,990	3,004	3,018	3,032	3,046	3,060	140
Mobile Home	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247	1,247	0
All Other	36	36	36	36	36	36	36	36	36	36	36	0
Total	**30,531**	**31,130**	**31,730**	**32,329**	**32,929**	**33,529**	**34,128**	**34,728**	**35,327**	**35,927**	**36,527**	**5,996**
Housing Units												
Single Family	10,970	11,214	11,458	11,702	11,946	12,190	12,434	12,678	12,922	13,166	13,410	2,440
Multi-Family	1,884	1,893	1,902	1,911	1,920	1,929	1,938	1,947	1,956	1,965	1,974	90
Mobile Home	848	848	848	848	848	848	848	848	848	848	848	0
All Other	36	36	36	36	36	36	36	36	36	36	36	0
Total	**13,738**	**13,991**	**14,244**	**14,497**	**14,750**	**15,003**	**15,256**	**15,509**	**15,762**	**16,015**	**16,268**	**2,530**
Employment												
Industrial	1,224	1,232	1,241	1,249	1,258	1,266	1,275	1,283	1,292	1,300	1,309	85
Commercial	4,860	4,894	4,927	4,961	4,995	5,029	5,063	5,096	5,130	5,164	5,198	338
Office & Other Services	3,393	3,416	3,440	3,463	3,487	3,511	3,534	3,558	3,581	3,605	3,629	236
Institutional	7,293	7,343	7,394	7,445	7,496	7,546	7,597	7,648	7,698	7,749	7,800	507
Total	**16,769**	**16,885**	**17,002**	**17,118**	**17,235**	**17,352**	**17,468**	**17,585**	**17,702**	**17,818**	**17,935**	**1,166**
Nonres. Floor Area (x1,000)												
Industrial	752	758	763	768	773	779	784	789	794	800	805	52
Commercial	2,075	2,090	2,104	2,118	2,133	2,147	2,162	2,176	2,191	2,205	2,219	144
Office & Other Services	1,143	1,151	1,159	1,167	1,175	1,183	1,191	1,199	1,207	1,215	1,223	80
Institutional	2,582	2,600	2,618	2,635	2,653	2,671	2,689	2,707	2,725	2,743	2,761	180
Total	**6,553**	**6,598**	**6,644**	**6,689**	**6,735**	**6,780**	**6,826**	**6,872**	**6,917**	**6,963**	**7,008**	**456**

APPENDIX E: ARTERIAL INVENTORY

Street	Cross Street	Date	ADT[1]	Lanes	Miles	Lane Miles	VMT	Capacity[2]	VMC
Airway Avenue	W of Stockton Hll Rd EB, WB	6/12/19	5,619	4	0.22	0.88	1,236	31,100	6,842
Airway Avenue	E of Stockon Hill Rd EB, WB	6/12/19	9,026	4	0.40	1.60	3,610	31,100	12,440
Airway Avenue	W of Willow Rd EB, WB	6/12/19	16,698	4	0.25	1.00	4,175	31,100	7,775
Airway Avenue	E of Willow Rd EB, WB	6/12/19	14,862	4	0.37	1.48	5,499	31,100	11,507
Airway Avenue	W of Bank St WB, EB	6/12/19	13,217	4	0.38	1.52	5,022	31,100	11,818
Airway Avenue	E of Bank ST EB, WB	6/12/19	14,101	4	0.38	1.52	5,358	31,100	11,818
Airway Avenue	W of Andy Devine Ave EB, WB	6/5/19	14,011	4	0.07	0.28	981	31,100	2,177
Airway Avenue	E of Andy Devine Ave EB, WB	6/5/19	14,136	4	0.14	0.56	1,979	31,100	4,354
Airway Avenue	W of Diamond St WB, EB	6/5/19	13,711	4	0.14	0.56	1,920	31,100	4,354
Airway Avenue	E of Yavapai St EB, WB	6/4/19	5,136	4	0.49	1.96	2,517	31,100	15,239
Andy Devine Ave	N of Airway Ave NB	6/5/19	8,895	2	0.40	0.80	3,558	16,350	6,540
Andy Devine Ave	N of Airway Ave SB	6/5/19	9,170	2	0.40	0.80	3,668	16,350	6,540
Andy Devine Ave	S of Airway Ave NB	6/5/19	9,209	2	0.20	0.40	1,842	15,550	3,110
Andy Devine Ave	S of Airway Ave SB	6/5/19	8,888	2	0.20	0.40	1,778	15,550	3,110
Andy Devine Ave	N of Armour Ave	2/11/20	21,717	4	0.60	2.40	13,030	31,100	18,660
Andy Devine Ave	Btwn Michael St & Bruce St	2/11/20	14,108	4	0.10	0.40	1,411	32,700	3,270
Andy Devine Ave	N of Airfield Ave	2/11/20	11,870	4	0.40	1.60	4,748	31,100	12,440
Andy Devine Ave	S of Airfield Ave	2/11/20	11,123	4	0.70	2.80	7,786	31,100	21,770
Andy Devine Ave	E of Stockton Hill Rd EB, WB	6/5/19	13,028	4	0.70	2.80	9,120	31,100	21,770
Andy Devine Ave	W of Stockton Hill Rd EB, WB	6/5/19	15,162	4	0.75	3.00	11,372	31,100	23,325
Andy Devine Ave	E of 4th St	2/12/20	12,030	4	0.75	3.00	9,023	31,100	23,325
Andy Devine Ave	W of HAWK Signal EB, WB	9/8/16	10,197	4	0.30	1.20	3,059	31,100	9,330
Bank Street	S of Northern Ave NB, SB	6/12/19	6,885	2	0.32	0.64	2,203	15,400	4,928
Bank Street	N of Gordon NB, SB	6/12/19	7,948	4	0.68	2.72	5,405	31,100	21,148
Bank Street	S of Gordon Dr NB, SB	6/12/19	8,529	4	0.50	2.00	4,265	31,100	15,550
Bank Street	N of Airway NB, SB	6/12/19	8,768	4	0.51	2.04	4,472	31,100	15,861
Hualapai Mtn Rd.	S of Andy Devine Ave NB, SB	6/5/19	20,569	4	0.16	0.64	3,291	31,100	4,976
Hualapai Mtn Rd.	W of Railroad St / Mission Blvd EB, WB	6/12/19	19,932	4	0.16	0.64	3,189	31,100	4,976
Hualapai Mtn Rd.	E of Railroad St / Mission Blvd EB, WB	6/12/19	16,638	4	0.25	1.00	4,160	31,100	7,775
Hualapai Mtn Rd.	E of Monroe St	2/12/20	14,480	4	0.65	2.60	9,412	31,100	20,215
Hualapai Mtn Rd.	W of Eastern St	2/12/20	11,241	4	0.27	1.08	3,035	31,100	8,397
Hualapai Mtn Rd.	E of Eastern St	2/12/20	9,601	4	0.40	1.60	3,840	31,100	12,440
Stockton Hill Rd.	N of Jagerson Ave NB, SB	6/6/19	5,252	2	0.61	1.22	3,204	12,300	7,503
Stockton Hill Rd.	N of Nothern Ave NB, SB	6/6/19	9,284	2	1.03	2.06	9,563	12,300	12,669
Stockton Hill Rd.	S of Northern Ave NB, SB	6/6/19	15,641	4	0.51	2.04	7,977	31,100	15,861
Stockton Hill Rd.	N of Gordon Dr NB, SB	6/5/19	17,804	4	0.50	2.00	8,902	31,100	15,550
Stockton Hill Rd.	S of Gordon Dr NB, SB	6/5/19	18,196	4	0.25	1.00	4,549	31,100	7,775
Stockton Hill Rd.	N of Kino Ave NB, SB	6/5/19	23,157	4	0.25	1.00	5,789	31,100	7,775
Stockton Hill Rd.	S of Kino Ave NB, SB	6/5/19	22,888	4	0.25	1.00	5,722	31,100	7,775
Stockton Hill Rd.	N of Airway Ave NB, SB	6/12/19	18,061	4	0.25	1.00	4,515	31,100	7,775
Stockton Hill Rd.	S of Airway Rd NB, SB	6/12/19	19,416	4	0.22	0.88	4,272	32,700	7,194
Stockton Hill Rd.	N of Beverly Ave NB, SB	6/6/19	31,754	4	0.22	0.88	6,986	32,700	7,194
Stockton Hill Rd.	S of Beverly Ave (S of I-40) NB, SB	6/6/19	23,768	4	0.16	0.64	3,803	32,700	5,232
Stockton Hill Rd.	N of Detroit Ave NB, SB	6/12/19	23,388	4	0.16	0.64	3,742	32,700	5,232
Stockton Hill Rd.	S of Detroit Ave NB, SB	6/12/19	20,465	4	0.23	0.90	4,605	31,100	6,998
Stockton Hill Rd.	N of Club Ave NB, SB	6/12/19	18,565	4	0.23	0.90	4,177	31,100	6,998
Stockton Hill Rd.	S of Club Ave NB, SB	6/12/19	18,078	4	0.46	1.82	8,225	31,100	14,151
Stockton Hill Rd.	N of Andy Devine Ave NB, SB	6/5/19	14,114	4	0.46	1.82	6,422	31,100	14,151
Total			690,336		18.01	65.72	238,413		507,611

1. City of Kingman, Arizona
2. Prospector Street Interim Roadway & I-40 Grade Separation Feasibility Study, LOS D