

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

**Prepared for:
Somerton, Arizona**

December 10, 2021



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EXECUTIVE SUMMARY

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

1. Public Safety Facilities
2. Street Facilities
3. Wastewater Facilities

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

ARIZONA DEVELOPMENT FEE ENABLING LEGISLATION

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

Necessary Public Services

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

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

Infrastructure Improvements Plan

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

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

Qualified Professionals

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

Conceptual Development Fee Calculation

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

Evaluation of Credits/Offsets

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

DEVELOPMENT FEE REPORT

METHODOLOGY

Development fees for the necessary public services made necessary by new development must be based on the same level of service (LOS) provided to existing development in the service area. There are three basic methodologies used to calculate development fees. They examine the past, present, and future status of infrastructure. The objective of evaluating these different methodologies is to determine the best measure of the demand created by new development for additional infrastructure capacity. Each 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. Somerton will assess Public Safety Facilities development fees and Street Facilities development fees citywide. For Wastewater Facilities development fees, Somerton will assess fees related to treatment facilities citywide. For wastewater lift stations, Somerton will assess fees in two subareas: Northeast Area and Northwest Area. The Wastewater Facilities IIP includes a map of the wastewater service areas.

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

Necessary Public Service	Service Area	Cost Recovery	Incremental Expansion	Plan-Based	Cost Allocation
Public Safety	Citywide	Ladder Truck	Vehicles and Apparatus	Public Safety Facility, Development Fee Report	Population, Vehicle Trips
Street	Citywide	N/A	N/A	Street Improvements, Development Fee Report	Vehicle Miles Traveled
Wastewater	Citywide	Treatment Facilities	N/A	Development Fee Report	Gallons
	Northeast Area	N/A	N/A	Lift Station	Gallons
	Northwest Area	N/A	N/A	Lift Station	Gallons

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 1,000 square feet of floor area, based on four general development types. Development fees for wastewater will be assessed per meter, based on meter size and type.

Fees shown represent the maximum allowable fees. Somerton 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 Somerton'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 Fees by Land Use

Public Safety Facilities development fees and Street Facilities development fees will be assessed based on land use. Development fees for residential development will be assessed per dwelling unit, based on the type of unit. Nonresidential development fees will be assessed per 1,000 square feet of floor area, based on four general development types.

Figure 2: Proposed Development Fees

Residential Fees per Unit					
Development Type	Public Safety	Street	Proposed Fees	Current Fees	Increase / Decrease
Single Family	\$992	\$1,254	\$2,246	\$1,798	\$448
Multi-Family	\$594	\$972	\$1,566	\$1,263	\$303

Nonresidential Fees per 1,000 Square Feet					
Development Type	Public Safety	Street	Proposed Fees	Current Fees	Increase / Decrease
Industrial	\$125	\$113	\$238	\$429	(\$191)
Commercial	\$1,791	\$1,658	\$3,448	\$3,261	\$187
Office & Other Services	\$700	\$631	\$1,331	\$1,330	\$1
Institutional	\$925	\$834	\$1,760	\$1,228	\$532

Proposed Fees by Meter Size and Type

Wastewater Facilities development fees will be assessed per meter, based on meter size and type. Development located outside of the Northeast Area and the Northwest Area will be assessed fees shown in Figure 3. Development located within the Northeast Area will be assessed fees shown in Figure 4. Development located within the Northwest Area will be assessed fees shown in Figure 5.

Figure 3: Proposed Development Fees – Citywide

Citywide Fees per Meter					
Meter Size and Type		Capacity Ratio ¹	Proposed Fees	Current Fees	Increase / Decrease
0.75	Displacement	1.00	\$1,798	\$3,741	(\$1,943)
1.00	Displacement	1.67	\$3,003	\$6,247	(\$3,244)
1.50	Displacement	3.33	\$5,988	\$11,483	(\$5,495)
2.00	Displacement	5.33	\$9,585	\$18,129	(\$8,544)
3.00	Compound	10.67	\$19,188	\$35,870	(\$16,682)

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

Figure 4: Proposed Development Fees – Northeast Area

Northeast Area Fees per Meter					
Meter Size and Type		Capacity Ratio ¹	Proposed Fees	Current Fees	Increase / Decrease
0.75	Displacement	1.00	\$3,243	\$3,741	(\$498)
1.00	Displacement	1.67	\$5,415	\$6,247	(\$832)
1.50	Displacement	3.33	\$10,798	\$11,483	(\$685)
2.00	Displacement	5.33	\$17,283	\$18,129	(\$846)
3.00	Compound	10.67	\$34,599	\$35,870	(\$1,271)

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

Figure 5: Proposed Development Fees – Northwest Area

Northwest Area Fees per Meter					
Meter Size and Type		Capacity Ratio ¹	Proposed Fees	Current Fees	Increase / Decrease
0.75	Displacement	1.00	\$3,016	\$3,741	(\$725)
1.00	Displacement	1.67	\$5,037	\$6,247	(\$1,211)
1.50	Displacement	3.33	\$10,044	\$11,483	(\$1,439)
2.00	Displacement	5.33	\$16,076	\$18,129	(\$2,053)
3.00	Compound	10.67	\$32,182	\$35,870	(\$3,688)

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

PUBLIC SAFETY FACILITIES IIP

METHODOLOGY

ARS § 9-463.05 (T)(7)(f) defines necessary public services for Public Safety Facilities:

“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 Public Safety Facilities IIP includes components for public safety facilities, vehicles and apparatus, a ladder truck, and the cost of preparing the Public Safety Facilities IIP and related Development Fee Report. A plan-based methodology is used for the public safety facilities and the Development Fee Report. The incremental expansion methodology, based on the current level of service, is used to calculate the vehicles and apparatus component. The cost recovery methodology is used for the ladder truck.

SERVICE AREA

Somerton strives to provide a uniform public safety response time within the city limits; therefore, there is a single service area for the Public Safety Facilities IIP.

PROPORTIONATE SHARE

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Public Safety Facilities IIP and development fees will allocate the cost of public services between residential and nonresidential based on 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 Somerton are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents who work outside Somerton are assigned 14 hours to residential development, and inflow commuters are assigned 10 hours to nonresidential development. Based on 2018 data for Somerton, residential development is 80 percent of functional population and nonresidential development is 20 percent.

Figure P1: Proportionate Share

Demand Units in 2018				
Residential			Demand Hours/Day	Person Hours
Population	17,403			
Residents Not Working	14,234		20	284,680
Employed Residents	3,169			
Employed in Somerton	271		14	3,794
Employed outside Somerton	2,898		14	40,572
Residential Subtotal				329,046
Residential Share				80%
Nonresidential				
Non-working Residents	14,234		4	56,936
Jobs Located in Somerton	2,589			
Residents Employed in Somerton	271		10	2,710
Non-Resident Workers (inflow commuters)	2,318		10	23,180
Nonresidential Subtotal				82,826
Nonresidential Share				20%
Total				411,872

Source: Arizona Office of Economic Opportunity (population), U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics, Version 6.6 (employment), 2018.

The proportionate share of costs attributable to residential development will be allocated to population and then converted to an appropriate amount by type of housing unit. Since nonresidential calls for service were unavailable by specific nonresidential use (i.e., commercial, office, industrial, etc.), TischlerBise recommends using average weekday nonresidential vehicle trips as the best demand indicator for Public Safety Facilities development fees. Trip generation rates are highest for commercial development, such as a shopping center, and lowest for industrial development. Office and institutional trip rates fall between the other two categories. This ranking of trip rates is consistent with the relative demand for public safety services from nonresidential development. Other possible nonresidential demand indicators, such as employment or floor area, do not accurately reflect the demand for public safety services. If employees per 1,000 square feet of building area were used as the demand indicator, Public Safety Facilities development fees would be too high for office and institutional development.

NONRESIDENTIAL VEHICLE TRIPS

TischlerBise recommends using nonresidential vehicle trips as the nonresidential demand indicator for Public Safety Facilities development fees. Average weekday vehicle trip ends for nonresidential development are from the 10th edition of the reference book, *Trip Generation*, published in 2017 by the Institute of Transportation Engineers. A trip end represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). Trip ends for nonresidential development are calculated per thousand square feet.

The basic trip adjustment factor is 50 percent for all nonresidential development except commercial and institutional. For commercial and institutional development, the trip adjustment factor is less than 50 percent because these uses 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 an average size shopping center, the ITE (2017) indicates that on average 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 shopping center as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor ($0.66 \times 0.50 = 0.33$) is approximately 33 percent of the trip ends.

Using the current estimates of nonresidential square footage by type, TischlerBise applied the trip end estimates and adjustment factors to calculate the average weekday vehicle trips for nonresidential development in Somerton. TischlerBise estimates there are 9,184 average weekday vehicle trips attributable to existing nonresidential development in Somerton.

Figure P2: Current Estimate of Nonresidential Average Weekday Vehicle Trips

Development Type	Development Unit	ITE Code	Avg Wkday VTE	Trip Adjustment	2021 Dev Units	2021 Veh Trips
Industrial	KSF	150	1.74	50%	285	248
Commercial	KSF	820	37.75	33%	119	1,477
Office & Other Services	KSF	710	9.74	50%	72	351
Institutional	KSF	520	19.52	33%	1,103	7,107
Total						9,184

RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT

ARS § 9-463.05(E)(4) requires:

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

Figure P3 displays the demand indicators for residential and nonresidential land uses. For residential development, the table displays the number of 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 P3: Ratio of Service Unit to Development Unit

Residential Development			
Development Type	Persons per Housing Unit ¹		
Single Family	3.49		
Multi-Family	2.09		

Nonresidential Development			
Development Type	AWVTE per 1,000 Sq Ft ¹	Trip Rate Adjustment	AWVT per 1,000 Sq Ft ¹
Industrial	1.74	50%	0.87
Commercial	37.75	33%	12.46
Office & Other Services	9.74	50%	4.87
Institutional	19.52	33%	6.44

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.”

Public Safety Facilities – Plan-Based

The City of Somerton’s existing public safety facility cost \$4,538,204 to construct and includes 26,280 square feet of floor area. Somerton constructed the existing public safety facility with 26,280 square feet of floor area using proceeds from the Series 2005 USDA loan. In 2017, Somerton issued the Series 2017 Pledged Revenue Obligation (USDA loan refunding) with 2033 as the final year of repayment. To serve future and existing development, Somerton plans to spend \$750,000 to expand the existing facility to provide 2,500 square feet of additional space for the Police Department. This planned facility totaling 28,780 square feet will serve development through 2031, and Somerton plans to recover growth-related costs through development fees.

To allocate the proportionate share of demand to residential and nonresidential development, this analysis uses functional population outlined in Figure P1. Somerton’s planned level of service for residential development is 0.9981 square feet per person (28,780 square feet X 80 percent residential share / 23,068 persons). The nonresidential level of service is 0.5056 square feet per vehicle trip (28,780 square feet X 20 percent nonresidential share / 11,385 vehicle trips).

Figure P4: Public Safety Facilities Level of Service

Description	Cost	Square Feet
Public Safety Facility (Existing)	\$4,538,204	26,280
Police Facility Expansion (Planned)	\$750,000	2,500
Total	\$5,288,204	28,780

Cost Factors	
Public Safety Facility Cost	\$5,288,204
Public Safety Facility Square Feet	28,780
Cost per Square Foot	\$184

Level-of-Service (LOS) Standards	
2031 Square Feet	28,780
Residential	
Residential Share	80%
2031 Population	23,068
Square Feet per Person	0.9981
Cost per Person	\$183.40
Nonresidential	
Nonresidential Share	20%
2031 Vehicle Trips	11,385
Square Feet per Vehicle Trip	0.5056
Cost per Vehicle Trip	\$92.90

Source: City of Somerton

Projected Demand for Public Safety Facilities

Over the next 10 years, Somerton's population is expected to increase by 4,572 persons and nonresidential vehicle trips are expected to increase by 2,201 trips. Based on the planned level of service, the growth share of existing and planned facilities is 5,676 square feet and existing development's share is 23,104 square feet.

Figure P5: Projected Demand for Public Safety Facilities

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Public Safety Facilities	0.9981 Square Feet	per Person	\$184
	0.5056 Square Feet	per Vehicle Trip	

Demand for Public Safety Facilities					
Year	Population	Vehicle Trips	Square Feet		
			Residential	Nonresidential	Total
2021	18,496	9,184	18,461	4,643	23,104
2022	18,953	9,404	18,917	4,754	23,672
2023	19,410	9,624	19,374	4,866	24,239
2024	19,868	9,844	19,830	4,977	24,807
2025	20,325	10,064	20,286	5,088	25,375
2026	20,782	10,285	20,743	5,200	25,942
2027	21,239	10,505	21,199	5,311	26,510
2028	21,696	10,725	21,655	5,422	27,077
2029	22,153	10,945	22,111	5,533	27,645
2030	22,611	11,165	22,568	5,645	28,212
2031	23,068	11,385	23,024	5,756	28,780
10-Yr Increase	4,572	2,201	4,563	1,113	5,676

Projected Cost of Public Safety Facilities

Somerton spent \$4,538,204 to construct the existing public safety facility's 26,280 square feet. Somerton plans to spend \$750,000 to expand the existing facility to provide 2,500 square feet of additional space for the Police Department. The total cost of existing and planned public safety facilities equals \$5,288,204. This includes 28,780 square feet and will serve development through 2031.

To date, Somerton has paid \$2,133,028 in debt payments related to the existing public safety facility. Subtracting the retired debt from the total public safety facilities cost leaves an outstanding balance of \$3,155,176 and represents 17,171 square feet. As discussed on the previous page, the growth-related share of the total public safety facilities is 5,676 square feet and this represents \$1,042,889 of the outstanding balance. The remaining cost of \$2,112,287 represents existing development's share of the total public safety facilities costs and must be paid with non-development fee revenues.

Figure P6: Projected Cost of Public Safety Facilities

Public Safety Facilities	Cost	Square Feet
Public Safety Facility (Existing)	\$4,538,204	26,280
Police Facility Expansion (Planned)	\$750,000	2,500
Total Public Safety Facilities	\$5,288,204	28,780
- Retired Debt	\$2,133,028	11,609
Outstanding Balance	\$3,155,176	17,171
Growth-Related Cost	\$1,042,889	5,676
Growth-Related Share	33%	33%
Existing Development Cost	\$2,112,287	11,496
Existing Development Share	67%	67%

Source: City of Somerton

Public Safety Facilities – Credit

Somerton issued the Series 2005 USDA loan to construct the existing public safety facility. In 2017, Somerton issued the Series 2017 Pledged Revenue Obligation (USDA loan refunding) with 2033 as the final year of repayment. This analysis includes a credit for future debt payments on outstanding debt. A credit is necessary since future development will pay the development fee and will also contribute to future debt payments on the remaining debt.

As shown in Figure P7, outstanding debt related to the existing public safety facility will be repaid over the next 12 years. The original balance of the Series 2017 bond was \$2,975,126, and the remaining balance equals \$2,578,908. Annual payments are divided by projected development to determine the credit per person or vehicle trip. To account for the time value of money, annual payments per person and vehicle trip are discounted using a net present value formula based on a discount rate of 2.63 percent. The net present value of future debt payments is \$82.35 per person and \$41.60 per vehicle trip.

Figure P7: Credit for Debt Payments

Year	Series 2017 Annual Debt	Residential Share (80%)	Population	Per Person	Nonresidential Share (20%)	Vehicle Trips	Per Vehicle Trip
2021	\$200,559	\$160,447	18,496	\$8.67	\$40,112	9,184	\$4.37
2022	\$196,745	\$157,396	18,953	\$8.30	\$39,349	9,404	\$4.18
2023	\$197,866	\$158,293	19,410	\$8.16	\$39,573	9,624	\$4.11
2024	\$198,855	\$159,084	19,868	\$8.01	\$39,771	9,844	\$4.04
2025	\$199,713	\$159,770	20,325	\$7.86	\$39,943	10,064	\$3.97
2026	\$200,439	\$160,351	20,782	\$7.72	\$40,088	10,285	\$3.90
2027	\$201,034	\$160,827	21,239	\$7.57	\$40,207	10,505	\$3.83
2028	\$196,563	\$157,250	21,696	\$7.25	\$39,313	10,725	\$3.67
2029	\$197,026	\$157,621	22,153	\$7.11	\$39,405	10,945	\$3.60
2030	\$197,358	\$157,886	22,611	\$6.98	\$39,472	11,165	\$3.54
2031	\$197,558	\$158,047	23,068	\$6.85	\$39,512	11,385	\$3.47
2032	\$197,627	\$158,102	23,525	\$6.72	\$39,525	11,605	\$3.41
2033	\$197,564	\$158,051	25,353	\$6.23	\$39,513	12,486	\$3.16
	\$2,578,908	\$2,063,127			\$515,782		

Discount Rate	2.63%	Discount Rate	2.63%
Net Present Value	\$82.35	Net Present Value	\$41.60

Vehicles and Apparatus- Incremental Expansion

The City of Somerton has 30 vehicles and apparatus with a total cost of \$3,264,036, and the City plans to acquire additional vehicles and apparatus to serve future development. To allocate the proportionate share of demand for vehicles and apparatus to residential and nonresidential development, this analysis uses functional population outlined in Figure P1. Somerton's existing level of service for residential development is 0.00130 vehicles and apparatus per person (30 vehicles and apparatus X 80 percent residential share / 18,496 persons). The nonresidential level of service is 0.00065 vehicles and apparatus per vehicle trip (30 vehicles and apparatus X 20 percent nonresidential share / 9,184 vehicle trips).

Based on the total cost of Somerton's existing vehicles and apparatus, the weighted average cost is \$108,801 per unit (\$3,264,036 total cost / 30 vehicles and apparatus). For vehicles and apparatus, the cost is \$141.18 per person (0.00130 units per person X \$108,801 per unit) and \$71.08 per vehicle trip (0.00065 units per vehicle trip X \$108,801 per unit).

Figure P8: Vehicles and Apparatus Level of Service

Description	Units	Unit Cost	Total Cost
Fire Engine	1	\$850,000	\$850,000
Ambulances	3	\$220,000	\$660,000
Command Vehicle	2	\$80,000	\$160,000
Squad	1	\$280,000	\$280,000
Brush Truck	1	\$260,000	\$260,000
Patrol Vehicle - Marked	12	\$61,503	\$738,036
Patrol Vehicle - Unmarked	10	\$31,600	\$316,000
Total	30	\$108,801	\$3,264,036

Cost Factors	
Weighted Average per Unit	\$108,801

Level-of-Service (LOS) Standards	
Existing Units	30
Residential	
Residential Share	80%
2021 Population	18,496
Units per Person	0.00130
Cost per Person	\$141.18
Nonresidential	
Nonresidential Share	20%
2021 Vehicle Trips	9,184
Units per Vehicle Trip	0.00065
Cost per Vehicle Trip	\$71.08

Source: City of Somerton

Ladder Truck – Cost Recovery

The City of Somerton debt-financed the purchase of a ladder truck with the proceeds of the Series 2006 GADA loan. In 2015, Somerton issued the Series 2015 Refunding debt to refund the Series 2006 GADA loan, and the final year of debt payment for the Series 2015 Refunding debt is 2026. Somerton will use development fees to recover growth-related costs of the ladder truck needed to serve future development. To allocate the proportionate share of demand to residential and nonresidential development, this analysis uses functional population outlined in Figure P1. Somerton’s planned level of service for residential development is 0.000038 units per person (one unit X 80 percent residential share / 20,782 persons). The planned nonresidential level of service is 0.000019 units per vehicle trip (one unit X 20 percent nonresidential share / 10,285 vehicle trips).

Based on the total cost of \$1,347,997, the ladder truck cost is \$51.89 per person (0.000038 units per person X \$1,347,997 per unit) and \$26.21 per vehicle trip (0.000019 units per vehicle trip X \$1,347,997 per unit).

Figure P9: Ladder Truck Level of Service

Cost Factors	
Ladder Truck Cost ¹	\$1,347,997

Level-of-Service (LOS) Standards	
2026 Ladder Truck	1
Residential	
Residential Share	80%
2026 Population	20,782
Units per Person	0.000038
Cost per Person	\$51.89
Nonresidential	
Nonresidential Share	20%
2026 Vehicle Trips	10,285
Units per Vehicle Trip	0.000019
Cost per Vehicle Trip	\$26.21

Source: City of Somerton

1. Remaining balance is \$393,809

Ladder Truck – Credit

Somerton issued the Series 2006 GADA loan to purchase the ladder truck. In 2015, Somerton issued the Series 2015 Refunding Bond with 2026 as the final year of repayment. This analysis includes a credit for future debt payments on outstanding debt. A credit is necessary since future development will pay the development fee and will also contribute to future debt payments on this remaining debt.

As shown in Figure P10, outstanding debt related to the ladder truck will be repaid over the next five years. The original balance of the Series 2015 Refunding Bond was \$723,246, and the remaining balance equals \$393,809. Annual payments are divided by projected development to determine the credit per person or vehicle trip. To account for the time value of money, annual payments per person and vehicle trip are discounted using a net present value formula based on a discount rate of 2.63 percent. The net present value of future debt payments is \$14.72 per person and \$7.42 per vehicle trip.

Figure P10: Credit for Debt Payments

Year	Series 2015 Annual Debt ¹	Residential Share (80%)	Population	Per Person	Nonresidential Share (20%)	Vehicle Trips	Per Vehicle Trip
2021	\$66,133	\$52,906	18,496	\$2.86	\$13,227	9,184	\$1.44
2022	\$65,639	\$52,511	18,953	\$2.77	\$13,128	9,404	\$1.40
2023	\$66,432	\$53,145	19,410	\$2.74	\$13,286	9,624	\$1.38
2024	\$65,736	\$52,589	19,868	\$2.65	\$13,147	9,844	\$1.34
2025	\$66,326	\$53,061	20,325	\$2.61	\$13,265	10,064	\$1.32
2026	\$63,544	\$50,835	20,782	\$2.45	\$12,709	10,285	\$1.24
	\$393,809	\$315,047			\$78,762		

Discount Rate	2.63%
Net Present Value	\$14.72

Discount Rate	2.63%
Net Present Value	\$7.42

1. Ladder truck share of Series 2015 Refunding Bond

Development Fee Report – Plan-Based

The cost to prepare the Public Safety Facilities IIP and related Development Fee Report equals \$14,000. Somerton 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 \$4.90 per person and \$2.54 per vehicle trip.

Figure P11: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Public Safety	\$14,000	Residential	80%	Population	2,286	\$4.90
		Nonresidential	20%	Vehicle Trips	1,101	\$2.54
Street	\$16,670	All Development	100%	VMT	2,252	\$7.40
Wastewater	\$17,300	All Development	100%	Gallons	167,038	\$0.10
Total	\$47,970					

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, Somerton’s population is expected to increase by 4,572 persons and nonresidential vehicle trips generated are expected to increase by 2,201 trips over the next 10 years. To reach the planned level of service, Somerton plans to construct 2,500 square feet of public safety facilities. To maintain the existing levels of service, Somerton will need to acquire approximately seven vehicles and apparatus over the next 10 years. The following pages include a more detailed projection of demand for services and costs for the Public Safety Facilities IIP.

Public Safety Facilities – Plan-Based

Somerton plans to increase its existing level of service for public safety facilities over the next 10 years by constructing 2,500 square feet of police facilities. Based on a projected population increase of 4,572 persons, future residential development demands approximately 4,563 square feet of public safety facilities. With projected nonresidential vehicle trip growth of 2,201 vehicle trips, future nonresidential development demands approximately 1,113 square feet of public safety facilities. Future development demands approximately 5,676 square feet of public safety facilities at a cost of \$1,042,889 (5,676 square feet X \$184 per square foot). Somerton may use development fees to retire debt related to the existing public safety facility and to fund a portion of the planned police facility. The remaining cost of \$2,112,287 represents existing development's share of the remaining public safety facilities cost and must be paid with non-development fee revenues.

Figure P12: Projected Demand for Public Safety Facilities

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Public Safety Facilities	0.9981 Square Feet	per Person	\$184
	0.5056 Square Feet	per Vehicle Trip	

Demand for Public Safety Facilities					
Year	Population	Vehicle Trips	Square Feet		
			Residential	Nonresidential	Total
2021	18,496	9,184	18,461	4,643	23,104
2022	18,953	9,404	18,917	4,754	23,672
2023	19,410	9,624	19,374	4,866	24,239
2024	19,868	9,844	19,830	4,977	24,807
2025	20,325	10,064	20,286	5,088	25,375
2026	20,782	10,285	20,743	5,200	25,942
2027	21,239	10,505	21,199	5,311	26,510
2028	21,696	10,725	21,655	5,422	27,077
2029	22,153	10,945	22,111	5,533	27,645
2030	22,611	11,165	22,568	5,645	28,212
2031	23,068	11,385	23,024	5,756	28,780
10-Yr Increase	4,572	2,201	4,563	1,113	5,676

Growth-Related Expenditures	\$838,404	\$204,485	\$1,042,889
Retired Debt	\$1,704,366	\$428,662	\$2,133,028
Existing Development Share	\$1,687,793	\$424,494	\$2,112,287
Total Expenditures	\$4,230,563	\$1,057,641	\$5,288,204

Vehicles and Apparatus – Incremental Expansion

Somerton plans to maintain its existing level of service for vehicles and apparatus over the next 10 years. Based on a projected population increase of 4,572 persons, future residential development demands an additional 5.93 vehicles and apparatus (4,572 additional persons X 0.00130 units per person). With projected nonresidential vehicle trip growth of 2,201 vehicle trips, future nonresidential development demands an additional 1.44 vehicles and apparatus (2,201 additional vehicle trips X 0.00065 units per vehicle trip). Future development demands 7.37 additional vehicles and apparatus at a cost of \$801,855 (7.37 units X \$108,801 per unit).

Figure P13: Projected Demand for Vehicles and Apparatus

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Vehicles and Apparatus	0.00130 Units	per Person	\$108,801
	0.00065 Units	per Vehicle Trip	

Demand for Vehicles and Apparatus					
Year	Population	Vehicle Trips	Units		
			Residential	Nonresidential	Total
2021	18,496	9,184	24.00	6.00	30.00
2022	18,953	9,404	24.59	6.14	30.74
2023	19,410	9,624	25.19	6.29	31.47
2024	19,868	9,844	25.78	6.43	32.21
2025	20,325	10,064	26.37	6.58	32.95
2026	20,782	10,285	26.97	6.72	33.68
2027	21,239	10,505	27.56	6.86	34.42
2028	21,696	10,725	28.15	7.01	35.16
2029	22,153	10,945	28.75	7.15	35.90
2030	22,611	11,165	29.34	7.29	36.63
2031	23,068	11,385	29.93	7.44	37.37
10-Yr Increase	4,572	2,201	5.93	1.44	7.37

Growth-Related Expenditures	\$645,390	\$156,465	\$801,855
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Ladder Truck – Cost Recovery

Somerton plans to retire outstanding debt related to the ladder truck over the next five years. Based on a projected population increase of 2,286 persons, future residential development's share of the ladder truck is approximately nine percent (2,286 additional persons X 0.000038 units per person). With projected nonresidential vehicle trip growth of 1,101 vehicle trips, future nonresidential development's share of the ladder truck is approximately two percent (1,101 additional vehicle trips X 0.000019 units per vehicle trip). Future development's share of debt is approximately 11 percent of the ladder truck at a cost of \$147,462 (11 percent X \$1,347,997 per unit). The remaining balance of the ladder truck equals \$393,809.

Figure P14: Projected Demand for Ladder Truck

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Ladder Truck	0.000038 Units	per Person	\$1,347,997
	0.000019 Units	per Vehicle Trip	

Demand for Ladder Truck					
Year	Population	Vehicle Trips	Units		
			Residential	Nonresidential	Total
2021	18,496	9,184	0.71	0.18	0.89
2022	18,953	9,404	0.73	0.18	0.91
2023	19,410	9,624	0.75	0.19	0.93
2024	19,868	9,844	0.76	0.19	0.96
2025	20,325	10,064	0.78	0.20	0.98
2026	20,782	10,285	0.80	0.20	1.00
5-Yr Increase	2,286	1,101	0.09	0.02	0.11

Growth-Related Expenditures	\$118,610	\$28,851	\$147,462
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PUBLIC SAFETY FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is included in the public safety facilities development fees. Appendix A contains the forecast of revenues required by Arizona's Enabling Legislation (ARS § 9-463.05(E)(7)).

Public Safety Facilities Development Fees

Infrastructure components and cost factors for public safety facilities are summarized in the upper portion of Figure P15. The cost per service unit for public safety facilities is \$284.30 per person and \$143.71 per vehicle trip.

Public safety facilities development fees for residential development are assessed according to the number of persons per housing unit. For example, the single-family fee of \$992 is calculated using a cost per service unit of \$284.30 per person multiplied by a demand unit of 3.49 persons per housing unit.

Nonresidential development fees are calculated using vehicle trips as the service unit. The fee of \$1,791 per 1,000 square feet of commercial development is derived from a cost per service unit of \$143.71 per vehicle trip multiplied by a demand unit of 12.46 average weekday vehicle trips per 1,000 square feet.

Figure P15: Schedule of Public Safety Facilities Development Fees

Fee Component	Cost per Person	Cost per Trip
Public Safety Facilities	\$183.40	\$92.90
Public Safety Facilities Credit	(\$82.35)	(\$41.60)
Vehicles and Apparatus	\$141.18	\$71.08
Ladder Truck	\$51.89	\$26.21
Ladder Truck Credit	(\$14.72)	(\$7.42)
Development Fee Report	\$4.90	\$2.54
Total	\$284.30	\$143.71

Residential Fees per Unit				
Development Type	Persons per Housing Unit ¹	Proposed Fees	Current Fees	Increase / Decrease
Single Family	3.49	\$992	\$873	\$119
Multi-Family	2.09	\$594	\$659	(\$65)

Nonresidential Fees per 1,000 Square Feet				
Development Type	AWVT per 1,000 Sq Ft ¹	Proposed Fees	Current Fees	Increase / Decrease
Industrial	0.87	\$125	\$249	(\$124)
Commercial	12.46	\$1,791	\$1,974	(\$183)
Office & Other Services	4.87	\$700	\$773	(\$73)
Institutional	6.44	\$925	\$713	\$212

1. See Land Use Assumptions

PUBLIC SAFETY 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 P16 is based on the development projections in the *Land Use Assumptions* document and the updated public safety 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. Over the next 10 years, projected development fee revenue equals \$1,495,800 and total expenditures equal \$3,854,994. Existing development's share of costs must be funded with revenues other than development fees.

Figure P16: Projected Revenue from Public Safety Facilities Development Fees

Fee Component	Growth Share	Existing Share	Total
Public Safety Facilities	\$1,042,889	\$2,112,287	\$3,155,176
Public Safety Facilities Credit	(\$468,034)	\$0	(\$468,034)
Vehicles and Apparatus	\$801,855	\$0	\$801,855
Ladder Truck	\$147,462	\$246,347	\$393,809
Ladder Truck Credit	(\$41,813)	\$0	(\$41,813)
Development Fee Report	\$14,000	\$0	\$14,000
Total	\$1,496,359	\$2,358,634	\$3,854,994

		Single Family \$992 per unit	Multi-Family \$594 per unit	Industrial \$125 per KSF	Commercial \$1,791 per KSF	Office & Other \$700 per KSF	Institutional \$925 per KSF
Year		Hsg Unit	Hsg Unit	KSF	KSF	KSF	KSF
Base	2021	4,803	829	285	119	72	1,103
Year 1	2022	4,928	839	292	121	74	1,130
Year 2	2023	5,053	849	299	124	76	1,156
Year 3	2024	5,178	859	306	127	77	1,183
Year 4	2025	5,303	869	313	130	79	1,209
Year 5	2026	5,428	879	320	133	81	1,236
Year 6	2027	5,553	889	326	136	83	1,262
Year 7	2028	5,678	899	333	138	84	1,288
Year 8	2029	5,803	909	340	141	86	1,315
Year 9	2030	5,928	919	347	144	88	1,341
Year 10	2031	6,053	929	354	147	89	1,368
10-Year Increase		1,250	100	68	28	17	264
Projected Revenue		\$1,148,494	\$55,022	\$7,919	\$47,107	\$11,030	\$226,229

Projected Fee Revenue	\$1,495,800
Existing Development Share	\$2,359,194
Total Expenditures	\$3,854,994

STREET FACILITIES IIP

METHODOLOGY

ARS § 9-463.05 (T)(7)(e) defines necessary public services for Street Facilities:

“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 street improvements and the cost of preparing the Street Facilities IIP and related Development Fee Report. A plan-based methodology is used to calculate the components for street improvements and the Development Fee Report.

SERVICE AREA

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

PROPORTIONATE SHARE

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. 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.

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.”

Somerton will use vehicle miles traveled (VMT) as the demand units for street facilities development 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.

Trip Generation Rates

Vehicle trips are estimated using average weekday vehicle trip ends from the reference book, *Trip Generation, 10th Edition*, published by the Institute of Transportation Engineers (ITE) in 2017. The prototype for a single-family unit is Single Family (ITE 210), and it generates 9.44 average weekday vehicle trip ends per unit. For multi-family units, the proxy is Multifamily (ITE 221), and it generates 7.32 average weekday vehicle trip ends per unit.

The prototype for industrial development is Warehousing (ITE 150) which generates 1.74 average weekday vehicle trip ends per 1,000 square feet of floor area. For commercial development, the prototype is Shopping Center (ITE 820) which generates 37.75 average weekday vehicle trips 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. Institutional development uses Elementary School (ITE 520) and generates 19.52 average weekday vehicle trip ends per 1,000 square feet of floor area.

Trip Rate Adjustments

To calculate street facilities development fees, trip generation rates require an adjustment factor to avoid double counting each trip at both the origin and destination points. Therefore, the basic trip adjustment factor is 50 percent. As discussed further 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 64 percent to account for commuters leaving Somerton 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 S1, the U.S. Census Bureau's OnTheMap web application indicates 91 percent of resident workers traveled outside of Somerton for work in 2018. In combination, these factors ($0.31 \times 0.50 \times 0.91 = 0.14$) support the additional 14 percent allocation of trips to residential development.

Figure S1: Commuter Trip Adjustment

Trip Adjustment Factor for Commuters ¹	
Employed Residents	3,169
Residents Living and Working in Somerton	271
Residents Commuting Outside Somerton for Work	2,898
Percent Commuting out of Somerton	91%
Additional Production Trips ²	14%
Residential Trip Adjustment Factor	64%

1. U.S. Census Bureau, OnTheMap Application (version 6.6) and LEHD Origin-Destination Employment Statistics, 2018.

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 2018 indicate that 91 percent of Somerton's workers travel outside the city for work. In combination, these factors ($0.3099 \times 0.50 \times 0.91 = 0.14$) account for 14 percent of additional production trips. The total adjustment factor for residential includes attraction trips (50 percent of trip ends) plus the journey-to-work commuting adjustment (14 percent of production trips) for a total of 64 percent.

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

Adjustment for Pass-By Trips

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

Average Weekday Vehicle Trips

Shown below in Figure S2, multiplying average weekday vehicle trip ends and trip adjustment factors by Somerton's existing development units provides the average weekday vehicle trips generated by existing development. As shown below, Somerton's existing development generates 42,088 vehicle trips on an average weekday.

Figure S2: Average Weekday Vehicle Trips by Land Use

Development Type	Development Unit	ITE Code	Avg Wkday VTE	Trip Adjustment	2021 Dev Units	2021 Veh Trips
Single Family	HU	210	9.44	64%	4,803	29,018
Multi-Family	HU	221	7.32	64%	829	3,886
Industrial	KSF	150	1.74	50%	285	248
Commercial	KSF	820	37.75	33%	119	1,477
Office & Other Services	KSF	710	9.74	50%	72	351
Institutional	KSF	520	19.52	33%	1,103	7,107
Total						42,088

Trip Length Weighting Factor

The street facilities 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

Figure S3 displays 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.

Figure S3: Ratio of Service Unit to Development Unit

Residential Development					
Development Type	AWVTE per unit ¹	Trip Adjustment ¹	Trip Length Adjustment	Average Trip Length (miles)	Avg Wkdy VMT per Unit
Single Family	9.44	64%	117%	0.41	2.90
Multi-Family	7.32	64%	117%	0.41	2.25

Nonresidential Development					
Development Type	AWVTE per 1,000 Sq Ft ¹	Trip Adjustment ¹	Trip Length Adjustment	Average Trip Length (miles)	Avg Wkdy VMT per 1,000 Sq Ft ¹
Industrial	1.74	50%	73%	0.41	0.26
Commercial	37.75	33%	75%	0.41	3.83
Office & Other Services	9.74	50%	73%	0.41	1.46
Institutional	19.52	33%	73%	0.41	1.93

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.”

Street Improvements – Plan-Based

Somerton plans to construct 0.53 lane miles of street improvements during the next 10 years with a total cost of \$2,193,000. Based on discussions with staff, the planned street improvements shown in Figure S4 are 87 percent attributable to future development. The eligible cost of the Somerton Avenue bridge expansion excludes the cost of rebuilding the existing two-lane bridge and includes only the cost to construct an additional lane. The eligible cost of Avenue F 1/4 includes only the cost to construct the east side of the street, because the west side will be constructed through Somerton's half street ordinance by a developer. The eligible cost of planned street improvements is \$1,918,000. Existing development's share of \$275,000 (\$2,193,000 total cost - \$1,918,000 eligible cost) may not be funded with development fees.

Figure S4: Planned Street Improvements

Description	Lane Miles	Total Cost	Growth Share	Eligible Cost
Somerton Avenue Bridge Expansion ¹	0.03	\$450,000	39%	\$175,000
Avenue F 1/4 (Main St to Jefferson St) ²	0.50	\$543,000	100%	\$543,000
Avenue F 1/4 & Main Street	0.00	\$700,000	100%	\$700,000
Somerton Avenue & Main Street	0.00	\$250,000	100%	\$250,000
Bingham Avenue & Main Street	0.00	\$250,000	100%	\$250,000
Total	0.53	\$2,193,000	87%	\$1,918,000

1. The eligible cost excludes the cost to replace the existing bridge.
2. The eligible cost excludes the west side of Avenue F 1/4 constructed through Somerton's half street ordinance.

To allocate the proportionate share of demand for street improvements 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 S3. Somerton's planned LOS is 1.1765 lane miles per 10,000 VMT (2.71 lane miles / (23,032 VMT / 10,000 VMT)). Based on an eligible cost of \$3,618,868 per lane mile (\$1,918,000 eligible cost / 0.53 planned lane miles), the street improvements cost is \$425.75 per VMT (2.71 lane miles / 23,032 VMT X \$3,618,868 per lane mile).

Figure S5: Street Improvements Level of Service

Cost Factors	
Eligible Cost	\$1,918,000
Lane Miles	0.53
Eligible Cost per Lane Mile	\$3,618,868

Level-of-Service (LOS) Standards	
Planned Lane Miles (2031)	2.71
2031 VMT	23,032
Lane Miles per 10,000 VMT	1.1765
Cost per VMT	\$425.75

Source: Somerton Public Works Department

Development Fee Report – Plan-Based

The cost to prepare the Street Facilities IIP and related Development Fee Report equals \$16,670. Somerton 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 \$7.40 per VMT.

Figure S6: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Public Safety	\$14,000	Residential	80%	Population	2,286	\$4.90
		Nonresidential	20%	Vehicle Trips	1,101	\$2.54
Street	\$16,670	All Development	100%	VMT	2,252	\$7.40
Wastewater	\$17,300	All Development	100%	Gallons	167,038	\$0.10
Total	\$47,970					

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, Somerton’s development base is expected to increase by 1,350 housing units and 379,000 square feet of nonresidential floor area over the next 10 years. Based on the trip generation factors discussed in this section, projected development generates an additional 4,505 VMT over the next 10 years. Somerton plans to construct approximately 0.53 lane miles of street improvements over the next 10 years to reach the planned level of service. The growth-related cost of the Street Facilities IIP is \$1,918,000 (\$3,618,868 per lane mile X 0.53 lane miles).

Figure S7: Projected Travel Demand

Average Trip Length	0.4096
Lane Capacity	8,500

Somerton, Arizona		2021	2022	2023	2024	2025	2026	2031	10-Year
		Base	1	2	3	4	5	10	Increase
Development	Single Family Units	4,803	4,928	5,053	5,178	5,303	5,428	6,053	1,250
	Multi-Family Units	829	839	849	859	869	879	929	100
	Industrial KSF	285	292	299	306	313	320	354	68
	Commercial KSF	119	121	124	127	130	133	147	28
	Office & Other Services KSF	72	74	76	77	79	81	89	17
	Institutional KSF	1,103	1,130	1,156	1,183	1,209	1,236	1,368	264
Avg Weekday Vehicle Trips	Single-Family Trips	29,018	29,773	30,528	31,283	32,039	32,794	36,570	7,552
	Multi-Family Trips	3,886	3,933	3,980	4,027	4,073	4,120	4,354	468
	Residential Trips	32,904	33,706	34,508	35,310	36,112	36,914	40,924	8,020
	Industrial Trips	248	254	260	266	272	278	308	60
	Commercial Trips	1,477	1,512	1,548	1,583	1,619	1,654	1,831	354
	Office & Other Services Trips	351	360	368	377	385	394	436	84
	Institutional Trips	7,107	7,278	7,448	7,618	7,789	7,959	8,811	1,703
	Nonresidential Trips	9,184	9,404	9,624	9,844	10,064	10,285	11,385	2,201
	Total Vehicle Trips	42,088	43,110	44,132	45,154	46,177	47,199	52,310	10,222
VTM	Vehicle Miles Traveled (VMT)	18,527	18,977	19,428	19,878	20,329	20,779	23,032	4,505
Need	Lane Miles		0.05	0.05	0.05	0.05	0.05	0.05	0.53
	Street Improvements Cost		\$191,789	\$191,789	\$191,789	\$191,789	\$191,789	\$191,789	\$1,918,000

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 S8. The cost per service unit for street facilities is \$433.15 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 \$1,254 is calculated using a cost per service unit of \$433.15 per VMT multiplied by a demand unit of 2.90 average weekday VMT per housing unit.

Nonresidential Street Facilities development fees are calculated using VMT as the service unit. The fee of \$1,658 per 1,000 square feet of commercial development is derived from a cost per service unit of \$433.15 per VMT multiplied by a demand unit of 3.83 average weekday VMT per 1,000 square feet.

Figure S8: Schedule of Street Facilities Development Fees

Fee Component	Cost per VMT
Street Improvements	\$425.75
Development Fee Report	\$7.40
Total	\$433.15

Residential Fees per Unit				
Development Type	Avg Wkdy VMT per Unit ¹	Proposed Fees	Current Fees	Increase / Decrease
Single Family	2.90	\$1,254	\$925	\$329
Multi-Family	2.25	\$972	\$604	\$368

Nonresidential Fees per 1,000 Square Feet				
Development Type	Avg Wkdy VMT per 1,000 Sq Ft ¹	Proposed Fees	Current Fees	Increase / Decrease
Industrial	0.26	\$113	\$180	(\$67)
Commercial	3.83	\$1,658	\$1,287	\$371
Office & Other Services	1.46	\$631	\$557	\$74
Institutional	1.93	\$834	\$515	\$319

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 S9 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. Over the next 10 years, projected development fee revenue equals \$1,933,291 and total expenditures equal \$2,209,670. Existing development’s share of costs must be funded with revenues other than development fees.

Figure S9: Projected Revenue from Street Facilities Development Fees

Fee Component	Growth Share	Existing Share	Total
Street Improvements	\$1,918,000	\$275,000	\$2,193,000
Development Fee Report	\$16,670	\$0	\$16,670
Total	\$1,934,670	\$275,000	\$2,209,670

		Single Family \$1,254 per unit	Multi-Family \$972 per unit	Industrial \$113 per KSF	Commercial \$1,658 per KSF	Office & Other \$631 per KSF	Institutional \$834 per KSF
Year		Hsg Unit	Hsg Unit	KSF	KSF	KSF	KSF
Base	2021	4,803	829	285	119	72	1,103
Year 1	2022	4,928	839	292	121	74	1,130
Year 2	2023	5,053	849	299	124	76	1,156
Year 3	2024	5,178	859	306	127	77	1,183
Year 4	2025	5,303	869	313	130	79	1,209
Year 5	2026	5,428	879	320	133	81	1,236
Year 6	2027	5,553	889	326	136	83	1,262
Year 7	2028	5,678	899	333	138	84	1,288
Year 8	2029	5,803	909	340	141	86	1,315
Year 9	2030	5,928	919	347	144	88	1,341
Year 10	2031	6,053	929	354	147	89	1,368
10-Year Increase		1,250	100	68	28	17	264
Projected Revenue		\$1,554,248	\$96,416	\$7,597	\$46,023	\$10,633	\$218,373

Projected Fee Revenue	\$1,933,291
Existing Development Share	\$276,379
Total Expenditures	\$2,209,670

WASTEWATER FACILITIES IIP

METHODOLOGY

ARS § 9-463.05 (T)(7)(c) defines necessary public services for Wastewater Facilities:

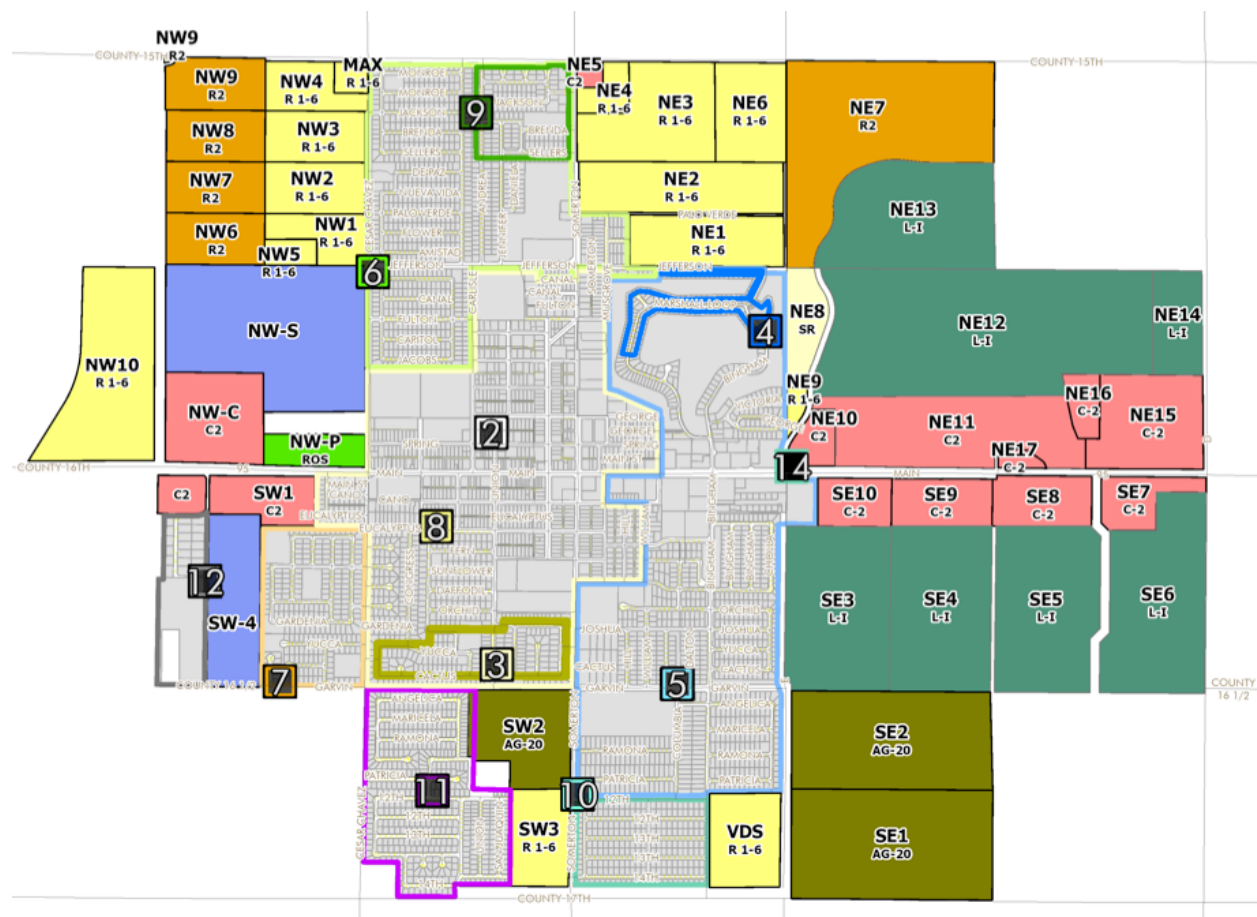
“wastewater facilities, including collection, interception, transportation, treatment and disposal of wastewater, and any appurtenances for those facilities.”

The Wastewater Facilities IIP includes components for treatment facilities, lift stations in the northeast area, lift stations in the northwest area, and the cost of preparing the Wastewater Facilities IIP and related Development Fee Report. The cost recovery methodology is used for treatment facilities. A plan-based methodology is used for lift stations in the northeast area, lift stations in the northwest area, and the Development Fee Report.

SERVICE AREA

Somerton provides wastewater treatment within the city limits; therefore, there is a single service area for treatment facilities and the Development Fee Report. The Wastewater Facilities IIP includes two subareas for lift stations: the Northeast Area (NE) and the Northwest Area (NW).

Figure WW1: Wastewater Facilities Service Areas



PROPORTIONATE SHARE

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Wastewater Facilities IIP and development fees will allocate the cost of necessary public services between residential and nonresidential based on average day gallons of wastewater.

WASTEWATER FACTORS

Shown below, Figure WW2 displays the average day gallons per account for 2020. Wastewater Facilities development fees are calculated using average day gallons per single-family unit and the capital cost per gallon of capacity – this represents an equivalent dwelling unit (EDU). For residential development, average day gallons equal 236 gallons per EDU. Wastewater development fees paid by nonresidential development are derived from capacity ratios, according to the size of the new customer's water meter, applied to the equivalent dwelling unit. Capacity ratios were obtained from the American Water Works Association (AWWA) Manual of Water Supply Practices M-1, 7th Edition.

Figure WW2: Wastewater Factors

Customer Class	Average Day Gallons	Accounts	Gallons per Account
Residential	843,228	3,573	236
Nonresidential	63,000	78	808
Total	906,228	3,651	248

Source: Somerton Public Works Department, 2020

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 WW3 displays the demand indicators for residential and nonresidential land uses. Wastewater Facilities development fees are calculated using average day gallons of wastewater per single-family unit and the capital cost per gallon of system capacity – this represents an equivalent dwelling unit (EDU). Wastewater Facilities development fees paid by nonresidential development are derived from capacity ratios, according to the size of the new customer’s water meter, applied to the equivalent dwelling unit. Capacity ratios were obtained from the American Water Works Association (AWWA) Manual of Water Supply Practices M-1, 7th Edition.

Figure WW3: Ratio of Service Unit to Development Unit

Meter Size and Type		Capacity Ratio ¹
0.75	Displacement	1.00
1.00	Displacement	1.67
1.50	Displacement	3.33
2.00	Displacement	5.33
3.00	Compound	10.67

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

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

ARS § 9-463.05(E)(1) requires:

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

ARS § 9-463.05(E)(2) requires:

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

Treatment Facilities – Cost Recovery

Shown below, Somerton’s existing treatment facility has a design flow capacity of 1,800,000 gallons. Based on existing usage of 906,228 gallons, Somerton’s available treatment capacity is 893,772 gallons.

Figure WW4: Wastewater Treatment Level of Service

Description	Design Flow	Usage	Available
Wastewater Treatment Plant	1,800,000	906,228	893,772

Source: Somerton Public Works Department, 2020

Somerton debt-financed the construction of its wastewater treatment facility with the 2005 WIFA loan and debt-financed the expansion of the wastewater treatment plant with the 2011 WIFA loan and the 2012 USDA loan. The total cost of debt related to wastewater treatment is \$13,535,725, and the outstanding debt equals \$5,862,143.

Figure WW5: Wastewater Facility Debt

Debt Obligation	FY of Final Payment	Total Cost	Remaining Cost
2005 WIFA Wastewater	2024	\$6,024,807	\$1,004,344
2011 WIFA Wastewater Expansion	2030	\$2,724,598	\$1,293,672
2012 USDA Wasterwater Expansion	2051	\$4,786,319	\$3,564,128
Total		\$13,535,725	\$5,862,143

Source: City of Somerton

As shown above, Somerton has excess capacity of approximately 50 percent (893,772 available gallons / 1,800,000 total gallons) in its existing treatment facility to serve future development, and this component of the Wastewater Facilities development fee is based on the availability of excess capacity in Somerton’s existing treatment facility. Shown below in Figure WW6, the cost of available capacity is calculated by multiplying the total cost of \$13,535,725 by the share of available capacity. Dividing the cost of available capacity by the gallons of available capacity results in a cost of \$7.52 per gallon (\$6,721,029 cost of available capacity / 893,772 gallons of available capacity). Based on a projected increase of 334,077 gallons, the projected 10-year revenue collections equal \$2,512,256.

Figure WW6: Treatment Facilities Cost per Gallon

Wastewater Treatment	
Total Cost	\$13,535,725
x Available Capacity (0.89 MGD ÷ 1.80 MGD)	50%
Cost of Available Capacity	\$6,721,029
÷ Available Capacity (gallons)	893,772
Cost per Gallon	\$7.52
x 10-Year Increase in Gallons	334,077
10-Year Share of Costs	\$2,512,256
Remaining Costs	\$5,862,143
Costs Due Beyond 10 Years	\$3,349,887

Northeast Area Lift Station – Plan-Based

Somerton plans to construct a lift station with an associated force main and 15-inch gravity line to serve future development in the Northeast Area. Figure WW7 includes total costs of \$2,300,000 to provide capacity of 375,922 gallons. The cost of the planned Northeast Area lift station is \$6.12 per gallon. This component of the Wastewater Facilities development fee will be assessed to future development within the Northeast Area.

Figure WW7: Northeast Area Lift Station Cost per Gallon

Lift Station	Cost
Northeast Area Lift Station ¹	\$2,250,000
Northeast Area Share of 15-Inch Gravity Line	\$50,000
Total Northeast Area Improvements	\$2,300,000
÷ Total Gallons ²	375,922
Cost per Gallon	\$6.12
x 10-Year Increase in Gallons	334,077
10-Year Share of Costs	\$2,044,549
Growth-Related Costs Due Beyond 10 Years	\$255,451

1. Somerton Public Works Department
2. City of Somerton Wastewater Master Plan, 2020

Northwest Area Lift Station – Plan-Based

Somerton plans to construct a lift station with an associated force main and 15-inch gravity line to serve future development in the Northwest Area. Figure WW8 includes total costs of \$2,150,000 to provide capacity of 416,574 gallons. The cost of the planned Northwest Area lift station is \$5.16 per gallon. This component of the Wastewater Facilities development fee will be assessed to future development within the Northwest Area.

Figure WW8: Northwest Area Lift Station Cost per Gallon

Lift Station	Cost
Northwest Area Lift Station ¹	\$1,670,000
Northwest Area Share of 15-Inch Gravity Line	\$480,000
Total Northwest Area Improvements	\$2,150,000
÷ Total Gallons ²	416,574
Cost per Gallon	\$5.16
x 10-Year Increase in Gallons	334,077
10-Year Share of Costs	\$1,723,835
Growth-Related Costs Due Beyond 10 Years	\$426,165

1. Somerton Public Works Department
2. City of Somerton Wastewater Master Plan, 2020

Development Fee Report – Plan-Based

The cost to prepare the Wastewater Facilities IIP and related Development Fee Report totals \$17,300. Somerton plans to update its report every five years. Based on this cost, proportionate share, and five-year development projections from the *Land Use Assumptions* document, the cost is \$0.10 per gallon.

Figure WW9: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Public Safety	\$14,000	Residential	80%	Population	2,286	\$4.90
		Nonresidential	20%	Vehicle Trips	1,101	\$2.54
Street	\$16,670	All Development	100%	VMT	2,252	\$7.40
Wastewater	\$17,300	All Development	100%	Gallons	167,038	\$0.10
Total	\$47,970					

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.”

To project future wastewater gallons in the Wastewater Service Area, TischlerBise applies the wastewater factors shown in Figure WW2 to the development projections shown in Appendix C. This results in a 10-year increase of 334,077 gallons – the amount of capacity needed to serve future development.

Figure WW10: Projected Gallons

				Annual Increase			
Year		Average Day Gallons	Total Accounts	Residential		Nonresidential	
				Gallons	Accounts	Gallons	Accounts
Base	2020	906,228	3,651				
	2021	939,636	3,788				
1	2022	973,043	3,925	31,860	135	1,548	2
2	2023	1,006,451	4,062	31,860	135	1,548	2
3	2024	1,039,859	4,199	31,860	135	1,548	2
4	2025	1,073,266	4,336	31,860	135	1,548	2
5	2026	1,106,674	4,472	31,860	135	1,548	2
6	2027	1,140,082	4,609	31,860	135	1,548	2
7	2028	1,173,489	4,746	31,860	135	1,548	2
8	2029	1,206,897	4,883	31,860	135	1,548	2
9	2030	1,240,305	5,020	31,860	135	1,548	2
10	2031	1,273,712	5,157	31,860	135	1,548	2
10-Year Increase		334,077	1,369	318,600	1,350	15,477	19

WASTEWATER FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is not necessary for the wastewater facilities development fees. Appendix A contains the forecast of revenues required by Arizona's Enabling Legislation (ARS § 9-463.05(E)(7)).

Wastewater Facilities Development Fees – Citywide

Infrastructure components and cost factors for citywide wastewater facilities are summarized in the upper portion of Figure WW11. The cost per service unit for wastewater facilities is \$7.62 per gallon.

Single-family fees are calculated by multiplying the average day gallons per equivalent dwelling unit by the cost per gallon of capacity. The calculation for a single-family unit (0.75-inch meter) is 236 average day gallons multiplied by \$7.62 per gallon of capacity. This results in a citywide wastewater facilities development fee of \$1,798 per EDU.

All other fees are based on size and type of water meter. The capacity ratios by meter size and type are from the AWWA Manual of Water Supply Practices M-1, 7th Edition. The average day gallons of a single-family unit are used as the basis of the calculation. For future development with a one-inch meter, the citywide wastewater facilities development fee is \$3,003 (236 average day gallons X \$7.62 per gallon of capacity X 1.67 capacity ratio).

Figure WW11: Schedule of Wastewater Facilities Development Fees – Citywide

Fee Component	Cost per Gallon
Treatment Facilities	\$7.52
Development Fee Report	\$0.10
Total	\$7.62

Single-Family (Base Meter) Flow Factors	
Average Day Gallons	236

Meter Size and Type	Capacity Ratio ¹	Proposed Fees	Current Fees	Difference
0.75 Displacement	1.00	\$1,798	\$3,741	(\$1,943)
1.00 Displacement	1.67	\$3,003	\$6,247	(\$3,244)
1.50 Displacement	3.33	\$5,988	\$11,483	(\$5,495)
2.00 Displacement	5.33	\$9,585	\$18,129	(\$8,544)
3.00 Compound	10.67	\$19,188	\$35,870	(\$16,682)

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

Wastewater Facilities Development Fees – Northeast Area

Infrastructure components and cost factors for the northeast area wastewater facilities are summarized in the upper portion of Figure WW12. The cost per service unit for northeast area wastewater facilities is \$13.74 per gallon.

Single-family fees are calculated by multiplying the average day gallons per equivalent dwelling unit by the cost per gallon of capacity. The calculation for a single-family unit (0.75-inch meter) is 236 average day gallons multiplied by \$13.74 per gallon of capacity. This results in a northeast area wastewater facilities development fee of \$3,243 per EDU.

All other fees are based on size and type of water meter. The capacity ratios by meter size and type are from the AWWA Manual of Water Supply Practices M-1, 7th Edition. The average day gallons of a single-family unit are used as the basis of the calculation. For future development with a one-inch meter, the northeast area wastewater facilities development fee is \$5,415 (236 average day gallons X \$13.74 per gallon of capacity X 1.67 capacity ratio).

Figure WW12: Schedule of Wastewater Facilities Development Fees – Northeast Area

Fee Component	Cost per Gallon
Treatment Facilities	\$7.52
Development Fee Report	\$0.10
Northeast Area Lift Station	\$6.12
Total	\$13.74

Single-Family (Base Meter) Flow Factors	
Average Day Gallons	236

Meter Size and Type	Capacity Ratio ¹	Proposed Fees	Current Fees	Difference
0.75 Displacement	1.00	\$3,243	\$3,741	(\$498)
1.00 Displacement	1.67	\$5,415	\$6,247	(\$832)
1.50 Displacement	3.33	\$10,798	\$11,483	(\$685)
2.00 Displacement	5.33	\$17,283	\$18,129	(\$846)
3.00 Compound	10.67	\$34,599	\$35,870	(\$1,271)

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

Wastewater Facilities Development Fees – Northwest Area

Infrastructure components and cost factors for the northwest area wastewater facilities are summarized in the upper portion of Figure WW13. The cost per service unit for northwest area wastewater facilities is \$12.78 per gallon.

Single-family fees are calculated by multiplying the average day gallons per equivalent dwelling unit by the cost per gallon of capacity. The calculation for a single-family unit (0.75-inch meter) is 236 average day gallons multiplied by \$12.78 per gallon of capacity. This results in a northwest area wastewater facilities development fee of \$3,016 per EDU.

All other fees are based on size and type of water meter. The capacity ratios by meter size and type are from the AWWA Manual of Water Supply Practices M-1, 7th Edition. The average day gallons of a single-family unit are used as the basis of the calculation. For future development with a one-inch meter, the northwest area wastewater facilities development fee is \$5,037 (236 average day gallons X \$12.78 per gallon of capacity X 1.67 capacity ratio).

Figure WW13: Schedule of Wastewater Facilities Development Fees – Northwest Area

Fee Component	Cost per Gallon
Treatment Facilities	\$7.52
Development Fee Report	\$0.10
Northwest Area Lift Station	\$5.16
Total	\$12.78

Single-Family (Base Meter) Flow Factors	
Average Day Gallons	236

Meter Size and Type	Capacity Ratio ¹	Proposed Fees	Current Fees	Difference
0.75 Displacement	1.00	\$3,016	\$3,741	(\$725)
1.00 Displacement	1.67	\$5,037	\$6,247	(\$1,211)
1.50 Displacement	3.33	\$10,044	\$11,483	(\$1,439)
2.00 Displacement	5.33	\$16,076	\$18,129	(\$2,053)
3.00 Compound	10.67	\$32,182	\$35,870	(\$3,688)

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

WASTEWATER FACILITIES DEVELOPMENT FEE REVENUE

Appendix A contains revenue forecasts required by Arizona’s Enabling Legislation (ARS § 9-463.05(E)(7)). Projected fee revenue shown in Figure WW14 is based on the development projections in the *Land Use Assumptions* document and the updated wastewater 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. Over the next 10 years, projected citywide development fee revenue equals \$2,525,752 and growth-related expenditures equal \$2,529,556. Debt service payments over the next 10 years equal \$3,524,535; therefore, existing development’s share of \$1,012,279 must be funded with revenues other than development fees.

Figure WW14: Projected Revenue from Wastewater Facilities Development Fees

Fee Component	Growth Share	Existing Share	Total
Treatment Facilities	\$2,512,256	\$1,012,279	\$3,524,535
Development Fee Report	\$17,300	\$0	\$17,300
Total	\$2,529,556	\$1,012,279	\$3,541,835

		Residential \$1,798 per meter	Nonresidential \$5,988 per meter
Year		Meter	Meter
Base	2021	3,708	80
Year 1	2022	3,843	82
Year 2	2023	3,978	84
Year 3	2024	4,113	86
Year 4	2025	4,248	88
Year 5	2026	4,383	89
Year 6	2027	4,518	91
Year 7	2028	4,653	93
Year 8	2029	4,788	95
Year 9	2030	4,923	97
Year 10	2031	5,058	99
10-Year Increase		1,350	19
Projected Revenue		\$2,411,802	\$113,950

Projected Fee Revenue	\$2,525,752
Existing Development Share	\$1,016,083
Total Expenditures	\$3,541,835

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

Somerton 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 through 2030 is summarized on the next page. These funds are available for capital investments; however, Somerton directs these revenues to operations and 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 growth-related improvements. The analysis provided in this report identified the need for offsets against the public safety facilities development fees since Somerton uses property tax revenue to retire public safety debt. Projected revenues are shown on the next page.

Figure A1: Forecast of Revenues Other Than Fees

Revenue Source	FY21 Actual	FY22 Estimate	FY23 Estimate	FY24 Estimate	FY25 Estimate	FY26 Estimate	FY27 Estimate	FY28 Estimate	FY29 Estimate	FY30 Estimate
City Sales Tax	\$2,727,643	\$2,500,000	\$2,575,000	\$2,652,250	\$2,731,818	\$2,813,772	\$2,898,185	\$2,985,131	\$3,074,685	\$3,166,925
Property Tax	\$687,091	\$720,000	\$741,600	\$763,848	\$786,763	\$810,366	\$834,677	\$859,718	\$885,509	\$912,074
Vehicle License Tax	\$826,406	\$707,700	\$728,931	\$750,799	\$773,323	\$796,523	\$820,418	\$845,031	\$870,382	\$896,493
State Shared Income Tax	\$2,168,648	\$1,872,000	\$1,928,160	\$1,986,005	\$2,045,585	\$2,106,952	\$2,170,161	\$2,235,266	\$2,302,324	\$2,371,394
State Sales Tax	\$1,866,587	\$1,685,000	\$1,735,550	\$1,787,617	\$1,841,245	\$1,896,482	\$1,953,377	\$2,011,978	\$2,072,337	\$2,134,508
State Gas Tax (HURF)	\$1,485,992	\$1,241,000	\$1,278,230	\$1,316,577	\$1,356,074	\$1,396,756	\$1,438,659	\$1,481,819	\$1,526,273	\$1,572,062
Sewer Service Charges	\$2,405,492	\$2,590,000	\$2,628,850	\$2,668,283	\$2,708,307	\$2,748,932	\$2,790,166	\$2,832,018	\$2,874,498	\$2,917,616

Source: Finance Department, City of Somerton

The City of Somerton provided the revenue projections in Figure A1. While all of these revenues are projected to increase through 2030, overall per capita revenues are projected to decrease during the same timeframe. As shown in Figure A2, all non-development fee revenues, except for property tax revenue, are projected to decline relative to population growth. These funds are available for capital investments; however, Somerton directs these revenues to operations and non-development fee eligible capital needs including maintenance, repair, and replacement.

Figure A2: Per Capita Forecast of Revenues Other Than Fees

Revenue Source	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
City Sales Tax	\$147.47	\$131.90	\$132.66	\$133.50	\$134.41	\$135.40	\$136.46	\$137.59	\$138.79	\$140.06
Property Tax	\$37.15	\$37.99	\$38.21	\$38.45	\$38.71	\$38.99	\$39.30	\$39.63	\$39.97	\$40.34
Vehicle License Tax	\$44.68	\$37.34	\$37.55	\$37.79	\$38.05	\$38.33	\$38.63	\$38.95	\$39.29	\$39.65
State Shared Income Tax	\$117.25	\$98.77	\$99.34	\$99.96	\$100.65	\$101.38	\$102.18	\$103.03	\$103.93	\$104.88
State Sales Tax	\$100.92	\$88.90	\$89.41	\$89.98	\$90.59	\$91.26	\$91.97	\$92.73	\$93.55	\$94.40
State Gas Tax (HURF)	\$80.34	\$65.48	\$65.85	\$66.27	\$66.72	\$67.21	\$67.74	\$68.30	\$68.90	\$69.53
Sewer Service Charges	\$130.05	\$136.65	\$135.43	\$134.30	\$133.25	\$132.28	\$131.37	\$130.53	\$129.75	\$129.04

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
Public Safety	\$14,000	Residential	80%	Population	2,286	\$4.90
		Nonresidential	20%	Vehicle Trips	1,101	\$2.54
Street	\$16,670	All Development	100%	VMT	2,252	\$7.40
Wastewater	\$17,300	All Development	100%	Gallons	167,038	\$0.10
Total	\$47,970					

APPENDIX C: LAND USE DEFINITIONS

RESIDENTIAL DEVELOPMENT

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

Single Family:

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

Multi-Family:

1. Structures containing two or more housing units, further categorized as units in structures with "2, 3 or 4, 5 to 9, 10 to 19, 20 to 49, and 50 or more apartments."
2. 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).

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, movie theaters, and lodging.

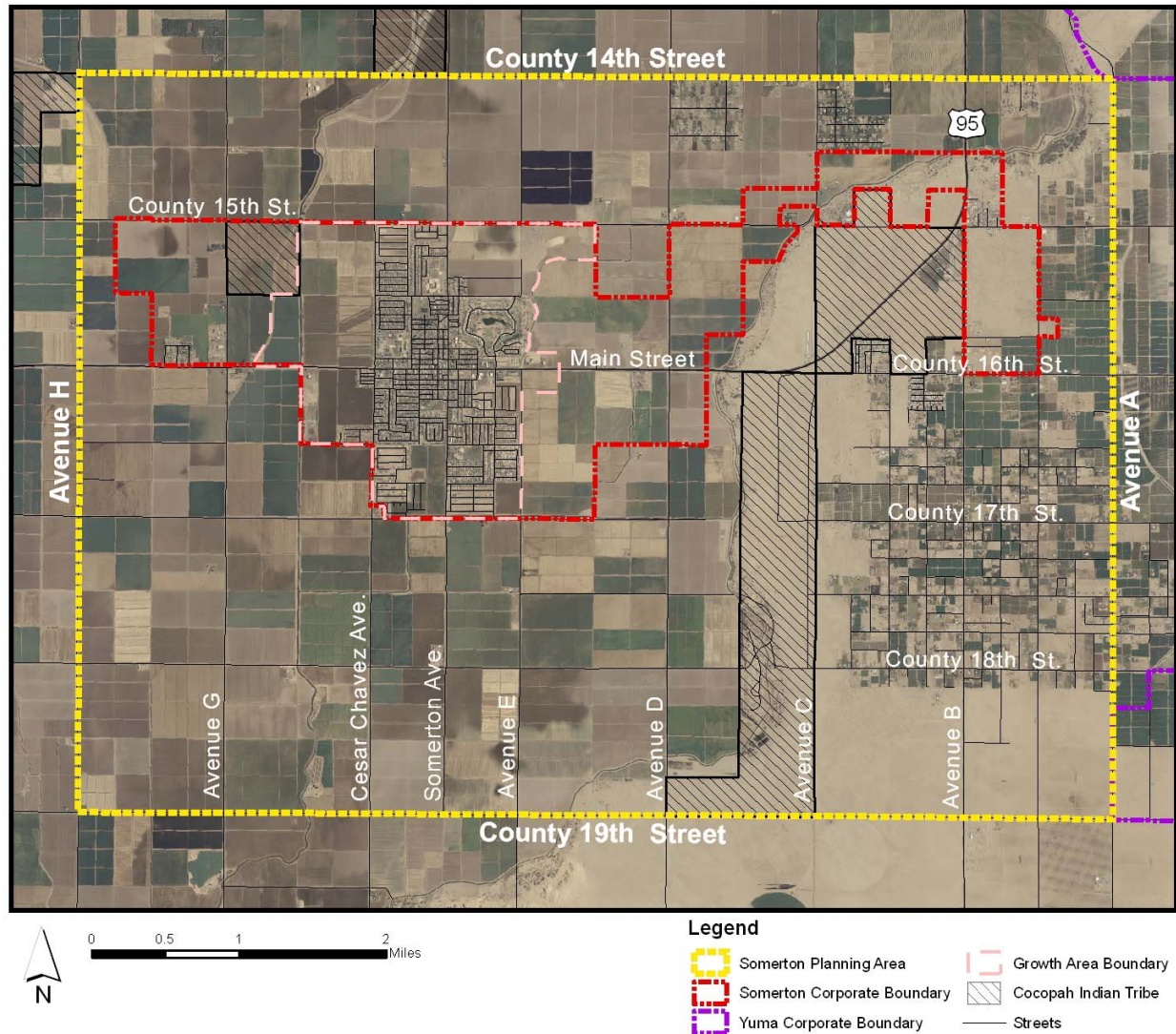
Industrial: Establishments primarily engaged in the production, transportation, or storage of goods. By way of example, *Industrial* includes manufacturing plants, distribution warehouses, trucking companies, utility substations, power generation facilities, and telecommunications buildings.

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, government buildings, and assisted living / nursing facilities.

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 veterinary 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 Somerton. The map below illustrates the areas within the City of Somerton Service Area boundaries.



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

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

The City of Somerton, 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 2021 are used in calculating levels of service (LOS) provided to existing development in the City of Somerton. 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 Somerton Development Fee Report are population, housing units, and employment projections. Based on discussions with staff, TischlerBise projects housing unit growth assuming that there will be an increase in residential construction within the upcoming year- resulting in an annual increase of 125 single-family units and ten multi-family units. TischlerBise projects population by applying persons per housing unit factors to the annual housing unit increase. For nonresidential development, the analysis uses Esri Business Analyst's 2020 employment estimate and projects future employment utilizing the 2020 jobs per housing unit ratio. 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 D14. 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 occurs faster than anticipated, fee revenue will increase, but Somerton 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 population increase of 4,572 persons in 1,350 housing units, and nonresidential development projections indicate an employment increase of 387 jobs in approximately 379,000 square feet of nonresidential floor area.

RESIDENTIAL DEVELOPMENT

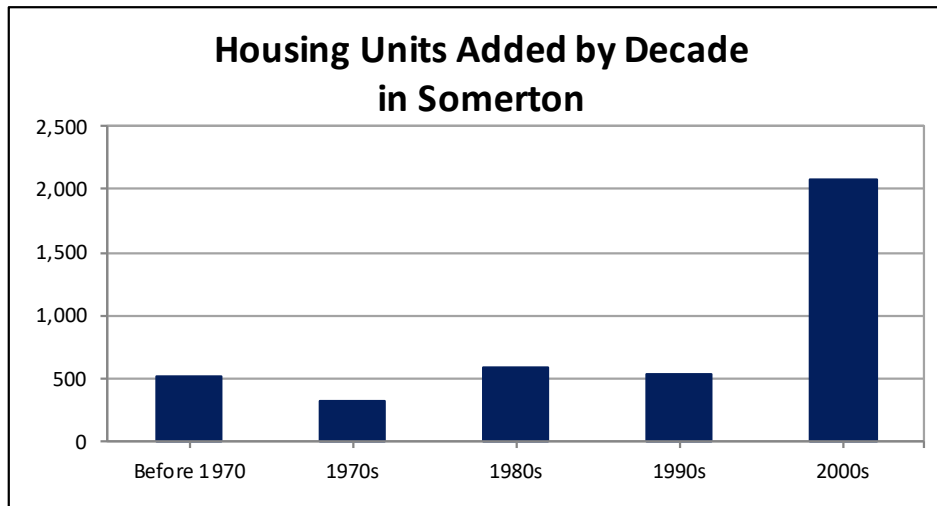
This section details current estimates and future projections of residential development including population and housing units.

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, Somerton's housing inventory increased by an average of 209 units per year.

Figure D1: Housing Units by Decade

Census 2000 Housing Units	1,967	Somerton's housing stock grew by an average of 209 housing units per year from 2000 to 2010.
Census 2010 Housing Units	4,052	
New Housing Units 2000 to 2010	2,085	



Source: U.S. Census Bureau, Census 2010 Summary File 1, Census 2000 Summary File 1, 2015-2019 5-Year American Community Survey (for 1990s and earlier, adjusted to yield total units in 2000).

Residential construction from 2015-2019 averaged 86 units per year. Based on discussions with Somerton staff, the recent decrease in residential construction is related to the limited number of developable lots. Due to the subdivision of a large parcel near the planned high school, Somerton staff expect residential construction to exceed 2015 levels.

Figure D2: Recent Residential Construction

Year	Single Family	Multi-Family	Total
2015	124	1	125
2016	114	0	114
2017	104	1	105
2018	41	0	41
2019	48	0	48
Average	86	0	86

Source: Community Development, City of Somerton

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 Somerton 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 Somerton, detached, attached (i.e. townhomes), and mobile home units are included in the “Single-Family” category. The second residential category includes dwellings in structures with two or more units. This category is referred to as “Multi-Family.”

Figure D3 below shows the occupancy estimates for Somerton based on 2015-2019 American Community Survey 5-Year Estimates. Single-family units averaged 3.49 persons per housing unit and multi-family units averaged 2.09 persons per housing unit. The average occupancy for all housing units in Somerton was 3.28 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	14,613	3,956	3.69	4,191	3.49	85.1%	5.61%
Multi-Family ²	1,533	638	2.40	734	2.09	14.9%	13.08%
Total	16,146	4,594	3.51	4,925	3.28	100.0%	6.72%

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

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

Residential Estimates

According to Arizona's Office of Economic Opportunity, Somerton's 2020 population was 18,039 persons. Dividing the total population by the citywide occupancy factor of 3.28 persons per housing unit results in an estimate of 5,498 housing units in 2020. Allocating the housing mix shown in Figure D3 to the 2020 housing unit estimate results in 4,678 single-family units and 819 multi-family units. Finally, adding 125 single-family units and ten multi-family units to the 2020 housing unit estimate results in a 2021 estimate of 5,633 housing units.

To estimate population in the 2021 base year, the analysis applies the occupancy factors shown in Figure D3 to the 2021 housing unit estimates shown below in Figure D4. For example, 4,803 single-family housing units multiplied by 3.49 persons per housing unit results in a 2021 single-family population of 16,763 persons. The 2021 population estimate is 18,496 persons.

Figure D4: Residential Estimates

Somerton, Arizona	2020	2021
Population		
Single Family	16,326	16,763
Multi-Family	1,713	1,734
Total	18,039	18,496
Housing Units		
Single Family	4,678	4,803
Multi-Family	819	829
Total	5,498	5,633

1. U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates
2. Arizona Office of Economic Opportunity, 2020 population estimate

Residential Projections

Based on discussions with Somerton staff, the recent decrease in residential construction is related to the limited number of developable lots. Due to the subdivision of a large parcel near the planned high school, Somerton staff expect residential construction to exceed 2015 levels. The analysis uses the assumption that average annual residential construction over the next 10 years will equal 125 single-family units per year and 10 multi-family units per year. Based on these projections, Somerton can expect 1,350 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 4,572 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

Somerton, Arizona	2021	2022	2023	2024	2025	2026	2031	10-Year Increase
	Base Year	1	2	3	4	5	10	
Population								
Single Family	16,763	17,199	17,635	18,071	18,508	18,944	21,125	4,363
Multi-Family	1,734	1,755	1,775	1,796	1,817	1,838	1,943	209
Total	18,496	18,953	19,410	19,868	20,325	20,782	23,068	4,572
Housing Units								
Single Family	4,803	4,928	5,053	5,178	5,303	5,428	6,053	1,250
Multi-Family	829	839	849	859	869	879	929	100
Total	5,633	5,768	5,903	6,038	6,173	6,308	6,983	1,350

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 Warehousing (ITE 150) which generates 1.74 average weekday vehicle trip ends per 1,000 square feet of floor area and has 2,902 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. 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. Institutional development uses Elementary School (ITE 520) and generates 19.52 average weekday vehicle trip ends per 1,000 square feet of floor area and has 1,076 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
520	Elementary School	1,000 Sq Ft	19.52	21.00	0.93	1,076
530	High School	1,000 Sq Ft	14.07	22.25	0.63	1,581
540	Community College	student	1.15	14.61	0.08	na
565	Day Care	student	4.09	21.38	0.19	na
610	Hospital	1,000 Sq Ft	10.72	3.79	2.83	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 2020 employment equal to 1,577 jobs. Applying the employment multipliers shown in Figure D6 to employment estimates shown in Figure D7 results in a nonresidential floor area estimate of 1,541,637 square feet.

To estimate employment in 2021, TischlerBise multiplies 2021 projected housing units shown in Figure D5 by the 2020 jobs per housing unit ratio of 0.29 (1,577 jobs in 2020 / 5,498 housing units in 2020). This results in 1,616 jobs in 2021 (5,633 housing units in 2021 X 0.29 jobs per housing unit). Next, TischlerBise allocates projected jobs by industry based on the 2020 share of jobs per industry. To estimate nonresidential floor area in 2021, TischlerBise multiplies the ITE employment density factors shown in Figure D6 by the number of projected jobs per industry. The 2021 estimate of nonresidential floor area equals 1,579,495 square feet.

Figure D7: Nonresidential Estimates

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	96	6%	2,902	278,592	0.34
Commercial ⁵	271	17%	427	115,717	2.34
Office & Other Service ⁶	209	13%	337	70,433	2.97
Institutional ⁷	1,001	63%	1,076	1,076,895	0.93
Total	1,577	100%		1,541,637	

1. Esri Business Analyst, 2020.
2. Trip Generation, Institute of Transportation Engineers, 10th Edition (2017).
3. TischlerBise calculation (2020 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	2021 Jobs ¹	Percent of Total Jobs	Square Feet per Job ²	2021 Estimated Floor Area ³	Jobs per 1,000 Sq. Ft. ²
Industrial ⁴	98	6%	2,902	285,433	0.34
Commercial ⁵	278	17%	427	118,559	2.34
Office & Other Service ⁶	214	13%	337	72,163	2.97
Institutional ⁷	1,026	63%	1,076	1,103,340	0.93
Total	1,616	100%		1,579,495	

1. TischlerBise calculation (2020 jobs per housing unit ratio X 2021 housing units)
2. Trip Generation, Institute of Transportation Engineers, 10th Edition (2017).
3. TischlerBise calculation (2021 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 Projections

To project employment, TischlerBise multiplies projected housing units shown in Figure D5 by the 2020 jobs per housing unit ratio of 0.29 (1,577 jobs / 5,498 housing units). Next, TischlerBise allocates projected jobs by industry type based on the 2020 share of jobs per industry. Over the next 10 years, Somerton is projected to gain 387 jobs.

To project future nonresidential development in each year of development projections, TischlerBise multiplies the ITE employment density factors shown in Figure D6 by the number of projected jobs per industry. Shown below in Figure D8, this results in a 10-year increase of 379,000 square feet of nonresidential floor area.

Figure D8: Nonresidential Development Projections

Somerton, Arizona	2021	2022	2023	2024	2025	2026	2031	10-Year
	Base Year	1	2	3	4	5	10	Increase
Employment								
Industrial	98	101	103	105	108	110	122	24
Commercial	278	284	291	298	304	311	344	67
Office & Other Services	214	219	224	230	235	240	265	51
Institutional	1,026	1,050	1,075	1,099	1,124	1,148	1,271	246
Total	1,616	1,654	1,693	1,732	1,771	1,809	2,003	387
Nonresidential Sq Ft (x1,000)								
Industrial	285	292	299	306	313	320	354	68
Commercial	119	121	124	127	130	133	147	28
Office & Other Services	72	74	76	77	79	81	89	17
Institutional	1,103	1,130	1,156	1,183	1,209	1,236	1,368	264
Total	1,579	1,617	1,655	1,693	1,731	1,769	1,958	379

VEHICLE MILES TRAVELED

Somerton will use vehicle miles traveled (VMT) as the demand units for Street Facilities fees and it will use average weekday vehicle trips (AWVT) for Public Safety 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

ITE publishes vehicle trip generation rates for residential development. Based on trip generation rates published in Trip Generation, Institute of Transportation Engineers, 10th Edition (2017), the national average for single-family units (ITE 210) is 9.44 average weekday vehicle trip ends per dwelling unit. Multi-family units (ITE 221) generate 7.32 average weekday vehicle trip ends per dwelling unit.

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 Warehousing (ITE 150) which generates 1.74 average weekday vehicle trip ends per 1,000 square feet of floor area. Institutional development uses Elementary School (ITE 520) and generates 19.52 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 D9: 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
520	Elementary School	1,000 Sq Ft	19.52	21.00	0.93	1,076
530	High School	1,000 Sq Ft	14.07	22.25	0.63	1,581
540	Community College	student	1.15	14.61	0.08	na
565	Day Care	student	4.09	21.38	0.19	na
610	Hospital	1,000 Sq Ft	10.72	3.79	2.83	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 64 percent to account for commuters leaving Somerton 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 D10, the U.S. Census Bureau's OnTheMap web application indicates 91 percent of resident workers traveled outside of Somerton for work in 2018. In combination, these factors ($0.31 \times 0.50 \times 0.91 = 0.14$) support the additional 14 percent allocation of trips to residential development.

Figure D10: Commuter Trip Adjustment

Trip Adjustment Factor for Commuters ¹	
Employed Residents	3,169
Residents Living and Working in Somerton	271
Residents Commuting Outside Somerton for Work	2,898
Percent Commuting out of Somerton	91%
Additional Production Trips ²	14%
Residential Trip Adjustment Factor	64%

1. U.S. Census Bureau, OnTheMap Application (version 6.6) and LEHD Origin-Destination Employment Statistics, 2018.

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 2018 indicate that 91 percent of Somerton's workers travel outside the city for work. In combination, these factors ($0.3099 \times 0.50 \times 0.91 = 0.14$) account for 14 percent of additional production trips. The total adjustment factor for residential includes attraction trips (50 percent of trip ends) plus the journey-to-work commuting adjustment (14 percent of production trips) for a total of 64 percent.

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

Adjustment for Pass-By Trips

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

Demand Indicators – Average Weekday Vehicle Trips

Shown in Figure D11 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.

Figure D11: 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	9.44	64%	6.04
Multi-Family	7.32	64%	4.68

Nonresidential Development			
Development Type	AWVTE per 1,000 Sq Ft ¹	Trip Adjustment ¹	AWVT per 1,000 Sq Ft ¹
Industrial	1.74	50%	0.87
Commercial	37.75	33%	12.46
Office & Other Services	9.74	50%	4.87
Institutional	19.52	33%	6.44

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.

Figure D12: Demand Indicators by Development Type, Vehicle Miles Traveled (VMT)

Residential Development					
Development Type	AWVTE per unit ¹	Trip Adjustment ¹	Trip Length Adjustment	Average Trip Length (miles)	Avg Wkdy VMT per Unit
Single Family	9.44	64%	117%	0.41	2.90
Multi-Family	7.32	64%	117%	0.41	2.25

Nonresidential Development					
Development Type	AWVTE per 1,000 Sq Ft ¹	Trip Adjustment ¹	Trip Length Adjustment	Average Trip Length (miles)	Avg Wkdy VMT per 1,000 Sq Ft ¹
Industrial	1.74	50%	73%	0.41	0.26
Commercial	37.75	33%	75%	0.41	3.83
Office & Other Services	9.74	50%	73%	0.41	1.46
Institutional	19.52	33%	73%	0.41	1.93

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 Somerton are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents who work outside Somerton are assigned 14 hours to residential development, and inflow commuters are assigned 10 hours to nonresidential development. Based on 2018 data for Somerton, residential development is 80 percent of functional population and 20 percent for nonresidential development.

Figure D13: Functional Population

Demand Units in 2018				
Residential				
Population	17,403		Demand Hours/Day	Person Hours
Residents Not Working	14,234		20	284,680
Employed Residents	3,169			
Employed in Somerton	271		14	3,794
Employed outside Somerton	2,898		14	40,572
Residential Subtotal				329,046
Residential Share				80%
Nonresidential				
Non-working Residents	14,234		4	56,936
Jobs Located in Somerton	2,589			
Residents Employed in Somerton	271		10	2,710
Non-Resident Workers (inflow commuters)	2,318		10	23,180
Nonresidential Subtotal				82,826
Nonresidential Share				20%
Total				411,872

Source: Arizona Office of Economic Opportunity (population), U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics, Version 6.6 (employment), 2018.

DEVELOPMENT PROJECTIONS

Provided below is a summary of development projections used in the Development Fee Report. Base year estimates for 2021 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 D14: Development Projections Summary

Somerton, Arizona	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	10-Year
	Base Year	1	2	3	4	5	6	7	8	9	10	Increase
Population												
Single Family	16,763	17,199	17,635	18,071	18,508	18,944	19,380	19,816	20,253	20,689	21,125	4,363
Multi-Family	1,734	1,755	1,775	1,796	1,817	1,838	1,859	1,880	1,901	1,922	1,943	209
Total	18,496	18,953	19,410	19,868	20,325	20,782	21,239	21,696	22,153	22,611	23,068	4,572
Housing Units												
Single Family	4,803	4,928	5,053	5,178	5,303	5,428	5,553	5,678	5,803	5,928	6,053	1,250
Multi-Family	829	839	849	859	869	879	889	899	909	919	929	100
Total	5,633	5,768	5,903	6,038	6,173	6,308	6,443	6,578	6,713	6,848	6,983	1,350
Employment												
Industrial	98	101	103	105	108	110	113	115	117	120	122	24
Commercial	278	284	291	298	304	311	318	324	331	338	344	67
Office & Other Services	214	219	224	230	235	240	245	250	255	260	265	51
Institutional	1,026	1,050	1,075	1,099	1,124	1,148	1,173	1,198	1,222	1,247	1,271	246
Total	1,616	1,654	1,693	1,732	1,771	1,809	1,848	1,887	1,926	1,964	2,003	387
Nonresidential Sq Ft (x1,000)												
Industrial	285	292	299	306	313	320	326	333	340	347	354	68
Commercial	119	121	124	127	130	133	136	138	141	144	147	28
Office & Other Services	72	74	76	77	79	81	83	84	86	88	89	17
Institutional	1,103	1,130	1,156	1,183	1,209	1,236	1,262	1,288	1,315	1,341	1,368	264
Total	1,579	1,617	1,655	1,693	1,731	1,769	1,807	1,844	1,882	1,920	1,958	379

Figure A15: VMT Projections

Development Type	Development Unit	ITE Code	Weekday VTE	Trip Adj	Local Trip Length	Weekday VMT
Single Family	HU	210	9.44	64%	117%	2.90
Multi-Family	HU	221	7.32	64%	117%	2.25
Industrial	KSF	150	1.74	50%	73%	0.26
Commercial	KSF	820	37.75	33%	75%	3.83
Office & Other Services	KSF	710	9.74	50%	73%	1.46
Institutional	KSF	520	19.52	33%	73%	1.93

Average Trip Length	0.4096
Lane Capacity	8,500

Somerton, Arizona		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	10-Year Increase
		Base	1	2	3	4	5	6	7	8	9	10	
Development	Single Family Units	4,803	4,928	5,053	5,178	5,303	5,428	5,553	5,678	5,803	5,928	6,053	1,250
	Multi-Family Units	829	839	849	859	869	879	889	899	909	919	929	100
	Industrial KSF	285	292	299	306	313	320	326	333	340	347	354	68
	Commercial KSF	119	121	124	127	130	133	136	138	141	144	147	28
	Office & Other Services KSF	72	74	76	77	79	81	83	84	86	88	89	17
	Institutional KSF	1,103	1,130	1,156	1,183	1,209	1,236	1,262	1,288	1,315	1,341	1,368	264
Avg Weekday Vehicle Trips	Single-Family Trips	29,018	29,773	30,528	31,283	32,039	32,794	33,549	34,304	35,059	35,815	36,570	7,552
	Multi-Family Trips	3,886	3,933	3,980	4,027	4,073	4,120	4,167	4,214	4,261	4,308	4,354	468
	Residential Trips	32,904	33,706	34,508	35,310	36,112	36,914	37,716	38,518	39,320	40,122	40,924	8,020
	Industrial Trips	248	254	260	266	272	278	284	290	296	302	308	60
	Commercial Trips	1,477	1,512	1,548	1,583	1,619	1,654	1,689	1,725	1,760	1,796	1,831	354
	Office & Other Services Trips	351	360	368	377	385	394	402	410	419	427	436	84
	Institutional Trips	7,107	7,278	7,448	7,618	7,789	7,959	8,129	8,300	8,470	8,640	8,811	1,703
	Nonresidential Trips	9,184	9,404	9,624	9,844	10,064	10,285	10,505	10,725	10,945	11,165	11,385	2,201
	Total Vehicle Trips	42,088	43,110	44,132	45,154	46,177	47,199	48,221	49,243	50,265	51,287	52,310	10,222
VMT	Vehicle Miles Traveled (VMT)	18,527	18,977	19,428	19,878	20,329	20,779	21,230	21,680	22,131	22,581	23,032	4,505
Need	Lane Miles		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.53
	Street Improvements Cost		\$191,789	\$191,789	\$191,789	\$191,789	\$191,789	\$191,789	\$191,789	\$191,789	\$191,789	\$191,789	\$1,918,000