TischelerBise fee recommendations

Residential Development	Development Fees per Unit							
Development Type	Fire	General Government	Parks and Recreation	Police	Streets	Proposed Fees	Current Fees	Difference
Single-Family	$324	$33	$1,003	$359	$1,179	$2,898	$2,572	$326
Multi-Family	$226	$23	$699	$250	$886	$2,084	$1,957	$127
All Other Types	$188	$19	$582	$209	$674	$1,672	$1,498	$174

Nonresidential Development	Development Fees per Square Foot							
Development Type	Fire	General Government	Parks and Recreation	Police	Streets	Proposed Fees	Current Fees	Difference
Commercial / Retail	$0.52	$0.02	$0.00	$0.55	$1.71	$2.80	$1.92	$0.88
Office / Institutional	$0.86	$0.03	$0.00	$0.22	$0.74	$1.85	$1.18	$0.67
Industrial	$0.60	$0.02	$0.00	$0.14	$0.47	$1.23	$0.76	$0.47
Hotel (per room)	$114	$4	$0	$110	$380	$608	$498	$110

Current City fee recommendations

Residential Development	Development Fees per Unit					
Development Type	Fire	General Government	Parks and Recreation	Police	Streets	Proposed Fees
Single-Family	**$324**	**$33**	**$1,003**	**$359**	**$853**	**$2,572**
Multi-Family	**$226**	**$23**	**$699**	**$250**	**$759**	**$1,957**
All Other Types	**$188**	**$19**	**$582**	**$209**	**$500**	**$1,498**

Nonresidential Development	Development Fees per Square Foot					
Development Type	Fire	General Government	Parks and Recreation	Police	Streets	Proposed Fees
Commercial/Retail	**$0.52**	**$0.02**	**$0.00**	**$0.55**	**$0.83**	**$1.92**
Office/Institutional	**$0.46**	**$0.03**	**$0.00**	**$0.22**	**$0.74**	**$1.18**
Industrial	**$0.22**	**$0.02**	**$0.00**	**$0.14**	**$0.47**	**$0.76**
Hotel (per room)	**$114**	**$4**	**$0**	**$110**	**$270**	**$498**

DRAFT

Infrastructure Improvements Plan and Development Fee Report

Prepared for:

City of Yuma North Service Area
Yuma, Arizona

September 21, 2018

TischlerBise
FISCAL | ECONOMIC | PLANNING

4701 Sangamore Road
Suite S240
Bethesda, MD 20816
301.320.6900
www.TischlerBise.com

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EXECUTIVE SUMMARY

The City of Yuma, Arizona, contracted with TischlerBise to document land use assumptions, prepare the Infrastructure Improvements Plan (IIP), and update development fees within the City of Yuma North Service Area pursuant to Arizona Revised Statutes 9-436.05. 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 Yuma's Infrastructure Improvements Plan and associated update to its development fees includes the following necessary public services:

1. Parks and Recreational Facilities
2. Police Facilities
3. Fire Facilities
4. General Government Facilities
5. Street Facilities

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

ARIZONA DEVELOPMENT FEE ENABLING LEGISLATION

Arizona Revised Statutes 9-463.05 (hereafter referred to as "development fee enabling legislation") governs how development fees are calculated for municipalities in Arizona. During the state legislative session of 2011, Senate Bill 1525 (SB 1525) was introduced which significantly amended the development fee enabling legislation. The changes included:

1. Amending existing development fee programs by January 1, 2012.
2. Abandoning existing development fee programs by August 1, 2014.
3. New development fee program structure revolving around a unified Land Use Assumptions document and Infrastructure Improvements Plan.
4. New adoption procedures for the Land Use Assumptions, Infrastructure Improvements Plan, and development fees.
5. New definitions, including "necessary public services" which defines what categories and types of infrastructure may be funded with development fees.
6. Time limitations in development fee collections and expenditures.
7. New requirements for credits, "grandfathering" rules, and refunds.

This update of Yuma's development fees will be in compliance with all of the requirements of SB 1525.

Necessary Public Services

Under the new requirements of the development fee enabling legislation, development fees may be only used for construction, acquisition or expansion of public facilities that are necessary public services. "Necessary public service" means any of the following categories of facilities that have a life expectancy of three or more years and that are owned and operated on behalf of the municipality: water, wastewater, storm water, drainage, flood control, library, street, fire and police, and neighborhood parks and recreation. 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 Infrastructure Improvements Plan (hereafter referred to as the "IIP"). For each necessary public service that is the subject of a development fee, by law, the infrastructure improvements plan shall include the following seven elements:

1. A description of the existing necessary public services in the service area and the cost 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 on 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 expansion 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 the 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 general 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

Regardless of the methodology, a consideration of "credits" is integral to the development of a legally defensible development fee. There are two types of "credits" that should be addressed in development fee studies and ordinances. The first is a revenue credit 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 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 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.

There are three general methods for calculating development fees. The choice of a particular method depends primarily on the timing of infrastructure construction (past, concurrent, or future) and service characteristics of the facility type being addressed. Each method has advantages and disadvantages in a particular situation, and can be used simultaneously for different cost components.

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

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

UPDATED DEVELOPMENT FEES

Figure 1 summarizes service areas, methodology, and infrastructure cost components for each development fee. Because Yuma plans to provide a uniform level of service for all types of infrastructure included in this infrastructure improvements plan, the service area for all fee components is the City of Yuma North Service Area—defined as all lands within the City of Yuma located north of and including 56th Street.

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

Necessary Public Service	Service Area	Incremental Expansion	Plan-Based	Cost Recovery	Cost Allocation
Fire	City of Yuma North Service Area	Facilities	Apparatus, Ambulances, Development Fee Study	N/A	Peak Population, Jobs
General Government	City of Yuma North Service Area	N/A	Development Fee Study	City Hall	Peak Population, Jobs
Parks and Recreation	City of Yuma North Service Area	N/A	Development Fee Study	Pacific Avenue Athletic Complex	Peak Population
Police	City of Yuma North Service Area	Facilities, Vehicles, Equipment, Fleet Services	Development Fee Study	N/A	Peak Population, Vehicle Trips
Street	City of Yuma North Service Area	Signalized Intersections, Bike Lanes	Arterials, Bridges, Development Fee Study	N/A	Vehicle Miles of Travel

Proposed Development Fees

Development fees for residential development will be assessed per dwelling unit, based on the type of unit. Nonresidential development fees will be assessed per square foot of floor area, according to four general types of development, or per room for hotels. Fees in Figure 2 represent the maximum allowable fees – development fees fund 100 percent of growth-related infrastructure.

Yuma 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 Yuma's LOS standards. All costs in the development fee study are in current dollars with no assumed inflation rate over time. If cost estimates change significantly over time, development fees should be recalibrated.

Figure 2: Proposed Development Fees

Residential Development	Development Fees per Unit					
Development Type	Fire	General Government	Parks and Recreation	Police	Street	Proposed Fees
Single-Family	$324	$24	$1,003	$359	$1,179	$2,889
Multi-Family	$226	$17	$699	$250	$886	$2,078
All Other Types	$188	$14	$582	$209	$674	$1,667

Nonresidential Development	Development Fees per Square Foot					
Development Type	Fire	General Government	Parks and Recreation	Police	Street	Proposed Fees
Commercial / Retail	$0.52	$0.01	$0.00	$0.55	$1.71	$2.79
Office / Institutional	$0.86	$0.01	$0.00	$0.22	$0.74	$1.83
Industrial	$0.60	$0.01	$0.00	$0.14	$0.47	$1.22
Hotel (per room)	$114	$2	$0	$110	$380	$606

Current Development Fees

Yuma's current development fees are displayed below in Figure 3.

Figure 3: Current Development Fees

Residential Development	Development Fees per Unit					
Development Type	Fire	General Government	Parks and Recreation	Police	Street	Current Fees
Single Family	$339	$20	$1,011	$506	$696	$2,572
Multi-Family	$267	$15	$797	$399	$479	$1,957
All Other Types	$205	$12	$612	$306	$363	$1,498

Nonresidential Development	Development Fees per Square Foot					
Development Type	Fire	General Government	Parks and Recreation	Police	Street	Current Fees
Commercial/Retail	$0.15	$0.01	$0.00	$0.95	$0.80	$1.92
Office/Institutional	$0.26	$0.02	$0.00	$0.47	$0.44	$1.18
Light Industrial	$0.17	$0.02	$0.00	$0.30	$0.28	$0.76
Hotel (per room)	$33	$3	$0	$239	$223	$498

Difference Between Proposed and Current Development Fees

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

Figure 4: Difference Between Proposed and Current Development Fees

Residential Development	Development Fees per Unit					
Development Type	Fire	General Government	Parks and Recreation	Police	Street	Total
Single-Family	($15)	$4	($8)	($147)	$483	$317
Multi-Family	($41)	$2	($98)	($149)	$407	$121
All Other Types	($17)	$2	($30)	($97)	$311	$169

Nonresidential Development	Development Fees per Square Foot					
Development Type	Fire	General Government	Parks and Recreation	Police	Street	Total
Commercial / Retail	$0.37	($0.00)	$0.00	($0.40)	$0.91	$0.87
Office / Institutional	$0.60	($0.01)	$0.00	($0.25)	$0.30	$0.65
Industrial	$0.43	($0.01)	$0.00	($0.16)	$0.19	$0.46
Hotel (per room)	$81	($1)	$0	($129)	$157	$108

FIRE FACILITIES IIP

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

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

The Fire Facilities IIP and Development Fees includes components for fire facilities, fire apparatus, ambulances, and the cost of professional services for preparing the Fire Facilities IIP and development fees. The incremental expansion methodology, based on the current level of service, is used to calculate the facilities component of the Fire Facilities IIP and Development Fees. A plan-based methodology is used for apparatus, ambulances, and the development fee study.

Service Area

The service area for all fire fees is the City of Yuma North Service Area—defined as all lands within the City of Yuma located north of and including 56th Street.

Proportionate Share

ARS 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Fire Facilities IIP and development fees will allocate the cost of public services between residential and nonresidential based on non-traffic calls to the Fire Department in 2016. Residential calls represent 45 percent of the calls for service and nonresidential calls were 55 percent.

Figure 5: Fire Calls for Service

Development Type	Calls for Service
Residential	45%
Nonresidential	55%

Source: Yuma Fire Department, 2016.

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

ARS 9-463.05(E)(1) requires:

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

ARS 9-463.05(E)(2) requires:

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

Fire Facilities – Incremental Expansion

Fire development fees contain a cost component for facilities. Since facility square footage will be increased as demanded by future development, an incremental expansion method is utilized. As shown in Figure 6, Fire Department facilities currently total 56,241 square feet.

Figure 6: Fire Facilities Inventory

Description	Square Feet
Fire Station #1	16,121
Fire Station #2	11,910
Fire Station #3	9,800
Fire Station #4	6,500
Fire Station #5	11,910
Total	56,241

Level of Service

To allocate the proportionate share of demand for fire stations to residential and nonresidential development, this analysis uses calls for service. Yuma's existing level of service for residential development is 0.21968 square feet per person (56,241 square feet X 45 percent residential share / 115,208 peak population), and the nonresidential level of service is 0.60620 square feet per job (56,241 square feet X 55 percent nonresidential share / 51,027 jobs). Based on estimates for Fire Station #7, the cost per square foot is $318 ($42,610,338 / 8,199 square feet). The cost per person is $69.86 (0.21968 square feet per person X $318 per square foot) and the cost per job is $192.77 (0.60620 square feet per job X $318 per square foot).

Figure 7: Existing Level of Service and Cost Allocation for Fire Facilities

Cost Allocation Factors	
Cost per Square Foot	$318

Level-of-Service (LOS) Standards	
Existing Square Feet	56,241
Residential	
Residential Share	45%
2018 Peak Population	115,208
Square Feet per Person	0.21968
Cost per Person	**$69.86**
Nonresidential	
Nonresidential Share	55%
2018 Jobs	51,027
Square Feet per Job	0.60620
Cost per Job	**$192.77**

Cost Basis from Planned Projects

Description	Square Feet	Cost per SF	Total Cost
Fire Station #7	8,199	$318	$2,610,338

Source: City of Yuma.

Fire Apparatus – Plan-Based

Development fees will be used to expand Yuma's inventory of fire apparatus. Figure 8 lists the current apparatus used by Yuma's Fire Department. The current inventory includes 14 apparatus with a total replacement cost of $10.15 million.

Figure 8: Fire Apparatus Inventory

Description	Unit Cost	Equipment Cost	Replacement Cost
2009 Pierce Arrow Xt	$650,000	$125,000	$775,000
1994 Pierce Arrow Platform 100'	$1,000,000	$125,000	$1,125,000
2006 Pierce Arrow Xt	$650,000	$125,000	$775,000
2014 Pierce Arrow Platform 100'	$1,000,000	$125,000	$1,125,000
2007 Pierce Arrow Xt	$650,000	$125,000	$775,000
2006 Pierce Arrow Xt	$650,000	$125,000	$775,000
2003 Pierce Quantum	$650,000	$125,000	$775,000
1998 Pierce Quantum Telesqurt 50'	$650,000	$125,000	$775,000
1995 Pierce Arrow	$650,000	$125,000	$775,000
2016 Pierce Arrow Xt	$650,000	$125,000	$775,000
2016 Pierce Arrow Xt	$650,000	$125,000	$775,000
2007 Pierce Contender (Water Tender)	$350,000	$125,000	$475,000
2015 Ford F250 4x4 Crew Cab	$100,000	$125,000	$225,000
2008 Ford F250 4x4 Extended Cab	$100,000	$125,000	$225,000
Total	$8,400,000	$1,750,000	$10,150,000

Level of Service

As previously discussed, the analysis uses non-traffic fire calls for service to allocate the proportionate share of demand to residential and nonresidential development. Yuma's existing level of service for residential development is 0.000055 apparatus per person (14 apparatus X 45 percent residential share / 115,208 peak population). The nonresidential level of service is 0.000151 apparatus per job (14 apparatus X 55 percent nonresidential share / 51,027 jobs).

Figure 9: Existing Level of Service

Level-of-Service (LOS) Standards	
Existing Units	14.0
Residential	
Residential Share	45%
2018 Peak Population	115,208
Units per Person	0.00005
Nonresidential	
Nonresidential Share	55%
2018 Jobs	51,027
Units per Job	0.00015

Planned Fire Apparatus

Based on Yuma's current level of service and 10-year development projections, Yuma needs two additional fire apparatus over the next 10 years to maintain the current level of service. However, Yuma's Fire Department needs only one additional fire apparatus during the study period. Shown below in Figure 10, the analysis allocates the cost of the additional apparatus to the development increase over the next 10 years. For residential development, the 2028 level of service is 0.00003 apparatus per person (1.0 apparatus x 45 percent residential share / 13,703 additional persons). For nonresidential development, the 2028 level of service is 0.00006 apparatus per job (1.0 apparatus x 55 percent nonresidential share / 8,779 additional jobs). Yuma's Fire Department estimates the cost of an additional apparatus to equal $800,000. The cost per person is $26.27 (0.00003 apparatus per person X $800,000 per apparatus) and the cost per job is $50.12 (0.00006 apparatus per job X $800,000 per apparatus).

Figure 10: Cost Allocation for Planned Fire Apparatus

Cost Allocation Factors	
Apparatus Cost[1]	$800,000

Level-of-Service (LOS) Standards	
Additional Apparatus	1.0
Residential	
Residential Share	45%
2018 Peak Population	115,208
2028 Peak Population	128,911
10-Year Population Increase	13,703
Units per Person	0.00003
Cost per Person	**$26.27**
Nonresidential	
Nonresidential Share	55%
2018 Jobs	51,027
2028 Jobs	59,806
10-Year Job Increase	8,779
Units per Job	0.00006
Cost per Job	**$50.12**

1. Yuma Fire Department

Ambulances – Plan-Based

Development fees will be used to expand Yuma's inventory of ambulances. Figure 11 lists the current ambulances used by Yuma's Fire Department. The current inventory includes 9 ambulances with a total replacement cost of $2.07 million.

Figure 11: Ambulance Inventory

Description	Unit Cost	Equipment Cost	Replacement Cost
2012 Dodge North Star Ambulance	$160,000	$70,000	$230,000
2008 Dodge Wheeled Coach Ambulance	$160,000	$70,000	$230,000
2012 Dodge North Star Ambulance	$160,000	$70,000	$230,000
2008 Dodge Wheeled Coach Ambulance	$160,000	$70,000	$230,000
2015 Ford North Star Ambulance	$160,000	$70,000	$230,000
2000 Ford Wheeled Coach Ambulance	$160,000	$70,000	$230,000
2006 Ford Medtec Ambulance	$160,000	$70,000	$230,000
2000 Ford Wheeled Coach Ambulance	$160,000	$70,000	$230,000
2001 Ford Wheeled Coach Ambulance	$160,000	$70,000	$230,000
Total	$1,440,000	$630,000	$2,070,000

Level of Service

As previously discussed, the analysis uses non-traffic fire calls for service to allocate the proportionate share of demand to residential and nonresidential development. Yuma's existing level of service for residential development is 0.00004 ambulances per person (9 ambulances X 45 percent residential share / 115,208 peak population). The nonresidential level of service is 0.00010 ambulances per job (9 ambulances X 55 percent nonresidential share / 51,027 jobs).

Figure 12: Existing Level of Service

Level-of-Service (LOS) Standards	
Existing Units	9.0
Residential	
Residential Share	45%
2018 Peak Population	115,208
Units per Person	0.00004
Nonresidential	
Nonresidential Share	55%
2018 Jobs	51,027
Units per Job	0.00010

Planned Ambulances

Based on Yuma's current level of service and 10-year development projections, Yuma needs approximately 1.5 additional ambulances over the next 10 years to maintain the current level of service. However, Yuma's Fire Department needs only one additional ambulance during the study period. Shown below in Figure 13, the analysis allocates the cost of the additional ambulance to the development increase over the next 10 years. For residential development, the 2028 level of service is 0.00003 ambulances per person (1.0 ambulance x 45 percent residential share / 13,703 additional persons). For nonresidential development, the 2028 level of service is 0.00006 ambulances per job (1.0 ambulance x 55 percent nonresidential share / 8,779 additional jobs). Yuma's Fire Department estimates the cost of an additional ambulance to equal $230,000. The cost per person is $7.55 (0.00003 ambulances per person X $230,000 per ambulance) and the cost per job is $14.41 (0.00006 ambulances per job X $230,000 per ambulance).

Figure 13: Cost Allocation for Planned Ambulances

Cost Allocation Factors	
Ambulance Cost[1]	$230,000

Level-of-Service (LOS) Standards	
Additional Ambulances	1.0
Residential	
Residential Share	45%
2018 Peak Population	115,208
2028 Peak Population	128,911
10-Year Population Increase	13,703
Units per Person	0.00003
Cost per Person	**$7.55**
Nonresidential	
Nonresidential Share	55%
2018 Jobs	51,027
2028 Jobs	59,806
10-Year Job Increase	8,779
Units per Job	0.00006
Cost per Job	**$14.41**

1. Yuma Fire Department

IIP and Development Fee Report – Plan Based

The cost to prepare the Fire Facilities IIP and development fees totals $13,350. Yuma 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*, the cost is $0.90 per person and is $1.74 per job.

Figure 14: IIP and Development Fee Report

Necessary Public Service	Cost	Assessed Against	Proportionate Share	Demand Unit	2018	2023	Change	Cost per Demand Unit
Fire	$13,350	Residential	45%	Peak Population	115,208	121,848	6,640	$0.90
		Nonresidential	55%	Jobs	51,027	55,241	4,214	$1.74
General Government	$8,900	Residential	73%	Peak Population	115,208	121,848	6,640	$0.98
		Nonresidential	27%	Jobs	51,027	55,241	4,214	$0.57
Parks and Recreation	$17,800	Residential	100%	Peak Population	115,208	121,848	6,640	$2.68
Police	$13,350	Residential	61%	Peak Population	115,208	121,848	6,640	$1.23
		Nonresidential	39%	Vehicle Trips	217,827	235,828	18,001	$0.29
Street	$35,600	Residential Nonresidential	100%	VMT	330,141	353,593	23,452	$1.52
Total	$89,000							

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 15 displays the ratio of a service unit to various types of land uses for residential and nonresidential development. The residential development table displays the persons per household for single-family units, multi-family units, and units in all other structures.

Nonresidential development fees are calculated using jobs as the service unit. The multiplier for each land use, which is employees per thousand square feet, is shown below.

Figure 15: Ratio of Service Unit to Development Unit

Residential Development	
Development Type	**Persons per Housing Unit[1]**
Single-Family	3.10
Multi-Family	2.16
All Other Types	1.80

Nonresidential Development	
Development Type	**Jobs per 1,000 Sq Ft[1]**
Commercial/Retail	2.00
Office/Institutional	3.32
Industrial/Flex	2.31
Hotel (per room)	0.44

1. See Land Use Assumptions

Projected Service Units and Projected Demand for Services

ARS 9-463.05(E)(5) requires:

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

The Land Use Assumptions projects an additional 13,703 persons and 8,779 jobs over the next ten years, as shown in Figure 16.

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."*

Fire Facilities

Shown in Figure 16, peak population is projected to increase by 13,703 persons by 2028, and jobs are projected to increase by 8,779 jobs during the same period. When applied to the 2018 LOS, future development will demand 8,332 square feet of fire facilities [(0.21698 residential LOS X 13,703 peak population increase) + (0.60620 nonresidential LOS X 8,779 jobs increase)). Based on the average cost of $318 per square foot, projected growth-related expenditures on fire facilities equal $2.65 million (8,332 square feet X $318 per square foot). Fire Station #7, to be constructed within the next 10 years, will be 8,199 square feet and cost approximately $2.61 million.

Figure 16: Projected Demand for Fire Facilities

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Fire Facilities	0.21968 Square Feet	per Person	$318
	0.60620 Square Feet	per Job	

Need for Fire Facilities					
Year	Peak Population	Jobs	Residential	Nonresidential	Total
2018	115,208	51,027	25,308	30,933	56,241
2019	116,505	51,843	25,593	31,427	57,021
2020	117,815	52,673	25,881	31,930	57,812
2021	119,142	53,515	26,173	32,441	58,613
2022	120,488	54,372	26,468	32,960	59,429
2023	121,848	55,241	26,767	33,487	60,254
2024	123,227	56,125	27,070	34,023	61,093
2025	124,622	57,023	27,376	34,567	61,944
2026	126,033	57,936	27,686	35,121	62,807
2027	127,464	58,863	28,001	35,683	63,684
2028	128,911	59,806	28,319	36,254	64,573
10-Yr Increase	13,703	8,779	3,010	5,322	8,332

Growth-Related Expenditures	$957,251	$1,692,341	$2,649,592

Fire Apparatus

Shown in Figure 17, peak population is projected to increase by 13,703 persons by 2028, and jobs are projected to increase by 8,779 during the same period. Using the 2018 LOS, future development will demand 2.07 additional apparatus [(0.00005 residential LOS X 13,703 peak population increase) + (0.00015 nonresidential LOS X 8,779 jobs increase)). As discussed previously, the Yuma Fire Department plans to acquire only one additional apparatus during the next 10 years.

Figure 17: Projected Demand for Fire Apparatus

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Fire Apparatus	0.00005 Units	per Person	$800,000
	0.00015 Units	per Job	

Need for Fire Apparatus					
Year	Peak Population	Jobs	Residential	Nonresidential	Total
2018	115,208	51,027	6.30	7.70	14.00
2019	116,505	51,843	6.37	7.82	14.19
2020	117,815	52,673	6.44	7.95	14.39
2021	119,142	53,515	6.52	8.08	14.59
2022	120,488	54,372	6.59	8.20	14.79
2023	121,848	55,241	6.66	8.34	15.00
2024	123,227	56,125	6.74	8.47	15.21
2025	124,622	57,023	6.81	8.60	15.42
2026	126,033	57,936	6.89	8.74	15.63
2027	127,464	58,863	6.97	8.88	15.85
2028	128,911	59,806	7.05	9.02	16.07
10-Yr Increase	13,703	8,779	0.75	1.32	2.07

Ambulances

Shown in Figure 18, peak population is projected to increase by 13,703 persons by 2028, and jobs are projected to increase by 8,779 during the same period. Using the 2018 LOS, future development will demand 1.33 additional ambulances [(0.00004 residential LOS X 13,703 peak population increase) + (0.00010 nonresidential LOS X 8,779 jobs increase)]. As discussed previously, the Yuma Fire Department plans to acquire only one additional ambulance during the next 10 years.

Figure 18: Projected Demand for Ambulances

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Ambulances	0.00004 Units	per Person	$230,000
	0.00010 Units	per Job	

Need for Ambulances					
Year	Peak Population	Jobs	Residential	Nonresidential	Total
2018	115,208	51,027	4.05	4.95	9.00
2019	116,505	51,843	4.10	5.03	9.12
2020	117,815	52,673	4.14	5.11	9.25
2021	119,142	53,515	4.19	5.19	9.38
2022	120,488	54,372	4.24	5.27	9.51
2023	121,848	55,241	4.28	5.36	9.64
2024	123,227	56,125	4.33	5.44	9.78
2025	124,622	57,023	4.38	5.53	9.91
2026	126,033	57,936	4.43	5.62	10.05
2027	127,464	58,863	4.48	5.71	10.19
2028	128,911	59,806	4.53	5.80	10.33
10-Yr Increase	13,703	8,779	0.48	0.85	1.33

Fire Facilities Development Fees

Revenue Credit

A revenue credit is not necessary for Fire Facilities development fees.

Proposed Fire Facilities Development Fees

Infrastructure standards and cost factors for fire fees are summarized in the upper portion of Figure 19. The conversion of infrastructure costs per service unit into a cost per development unit is also shown in the table below. For residential development, the average number of persons per household provides the necessary conversion. Development fees for residential development are determined by type of housing unit. For example, the fee for a single-family unit is $324 based on a cost factor of $104.58 per person and an average of 3.10 persons per household.

Nonresidential development fees are stated per square foot of floor area or, for hotels, per room. The fire fee of $0.60 per square foot of industrial development is derived from a capital cost of $259.04 per job multiplied by 2.31 jobs per 1,000 square feet divided by 1,000 square feet.

Figure 19: Schedule of Fire Development Fees

Fee Component	Cost per Person	Cost per Job
Fire Facilities	$69.86	$192.77
Fire Apparatus	$26.27	$50.12
Fire Ambulances	$7.55	$14.41
Development Fee Study	$0.90	$1.74
Total	$104.58	$259.04

Residential Development	Development Fees per Unit			
Development Type	Persons per Household[1]	Proposed Fees	Current Fees	Increase / Decrease
Single-Family	3.10	$324	$339	($15)
Multi-Family	2.16	$226	$267	($41)
All Other Types	1.80	$188	$205	($17)

Nonresidential Development	Development Fees per Square Foot			
Development Type	Jobs per 1,000 Sq Ft[1]	Proposed Fees	Current Fees	Increase / Decrease
Commercial/Retail	2.00	$0.52	$0.15	$0.37
Office/Institutional	3.32	$0.86	$0.26	$0.60
Industrial/Flex	2.31	$0.60	$0.17	$0.43
Hotel (per room)	0.44	$114	$33	$81

1. See Land Use Assumptions

FORECAST OF REVENUES

Appendix A contains the forecast of revenues required by Arizona's enabling legislation (ARS 9-463.05(E)(7)).

Projected Fire Development Fee Revenue

Projected fee revenue shown in Figure 20 is based on the development projections in the *Land Use Assumptions* and the updated Fire development fees. If development occurs at a faster rate than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs at a slower rate than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate. Anticipated development fee revenue of approximately $3.69 million over the next ten years is approximately equal to the projected growth-related cost of fire infrastructure ($3.69 million).

Figure 20: Projected Fire Development Fee Revenue

Fee Component	Growth Cost	Existing Cost	Total Cost
Fire Facilities	$2,649,620	$0	$2,649,620
Fire Apparatus	$800,000	$0	$800,000
Fire Ambulances	$230,000	$0	$230,000
Development Fee Study	$13,350	$0	$13,350
Total	$3,692,970	$0	$3,692,970

		Residential $286 per unit	Commercial/ Retail $0.52 per SF	Office/ Institutional $0.86 per SF	Industrial/ Flex $0.60 per SF
Year		Households	KSF	KSF	KSF
Base	2018	38,593	12,486	5,148	3,878
Year 1	2019	39,068	12,686	5,230	3,940
Year 2	2020	39,548	12,889	5,314	4,003
Year 3	2021	40,034	13,095	5,399	4,067
Year 4	2022	40,527	13,305	5,485	4,132
Year 5	2023	41,025	13,518	5,573	4,198
Year 6	2024	41,530	13,735	5,662	4,265
Year 7	2025	42,041	13,955	5,753	4,333
Year 8	2026	42,558	14,178	5,845	4,402
Year 9	2027	43,082	14,405	5,939	4,473
Year 10	2028	43,612	14,636	6,034	4,544
Ten-Year Increase		5,019	2,150	886	666
Projected Revenue		$1,426,585	$1,109,981	$759,308	$397,132

Projected Fee Revenue	$3,693,006
Total Expenditures	$3,692,970

GENERAL GOVERNMENT FACILITIES IIP

ARS 9-463.05 ® defines the facilities and assets which can be included in the General Government Facilities IIP:

> *"A municipality may continue to assess a development fee adopted before January 1, 2012 for any facility that was financed before June 1, 2011 if: (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 under this subsection 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."*

General government development fees are not one of the infrastructure categories allowed under Arizona law. However, facilities which have been debt financed can be included in the IIP and development fees. Since Yuma's development fee for the repayment of City Hall debt was adopted before January 1, 2012 and the debt was issued before June 1, 2011, Yuma may continue to collect development fees to repay City Hall debt. The cost recovery methodology is used to calculate the City Hall debt component of the General Government Facilities IIP and Development Fees. A plan-based methodology is used for the development fee study.

Service Area

The service area for all general government fees is the City of Yuma North Service Area—defined as all lands within the City of Yuma located north of and including 56th Street.

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 General Government Facilities IIP and development fees will allocate the cost of public services between residential and nonresidential based on functional population.

For certain infrastructure facilities TischlerBise often uses "functional population" to establish the relative demand for infrastructure from both residential and nonresidential development. As shown in Figure 21, functional population accounts for people living and working in a jurisdiction. Residents who don't work are assigned 20 hours per day to residential development and four hours per day to nonresidential development (annualized averages). Residents who work in Yuma are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents who work outside Yuma are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2013 functional population data, the resulting proportionate share is 73 percent from residential development and 27 percent from nonresidential development.

Figure 21: Functional Population

	Demand Units in 2013			Demand Hours/Day	Person Hours	Proportionate Share
Residential						
Estimated Residents	95,717					
Residents Not Working		64,165		20	1,283,300	
Employed Residents		31,552				
Employed in Service Area			19,082	14	267,148	
Employed outside Service Area			12,470	14	174,580	
			Residential Subtotal		1,725,028	73%
Nonresidential						
Non-working Residents			64,165	4	256,660	
Jobs in Service Area		39,120				
Residents Employed in Service Area			19,082	10	190,820	
Non-Resident Workers (inflow Commuters)			20,038	10	200,380	
			Nonresidential Subtotal		647,860	27%
				Total	2,372,888	100%

Source: Arizona Department of Administration 2013 Population Estimate; U.S. Census Bureau, OnTheMap 6.1.1 Application, 2013.

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."*

City Hall Debt Service – Cost Recovery

To provide capacity for new development, Yuma debt-financed the 2010 improvements to City Hall. This development fee will be used to cover new development's share of City Hall debt service payments.

City Hall encompasses 150,000 square feet and was oversized to serve new development. Based on the current number of employees and average square feet per work station, Yuma's Engineering Department estimates the facility is currently at 75 percent capacity based on the ratio of current (2018) population and jobs to future (max capacity) population and jobs [(115,208 persons + 51,027 jobs) / (152,860 persons + 68,595 jobs)].

Total debt service for City Hall, as shown in Figure 22, is approximately $41.16 million. The debt was issued in 2010 and will be retired in 2025. Remaining capacity is used to distribute costs to all users. To derive the cost per service unit, 73 percent of the debt service is allocated to residential development and 27 percent is allocated to nonresidential development. The cost per person is $196.56 ($41,159,077 total debt X 73 percent residential share / 152,860 maximum capacity) and the cost per job is $162.01 ($41,159,077 total debt X 27 percent nonresidential share / 68,595 maximum capacity).

Figure 22: Cost Allocation for City Hall

Facility	Total Debt	Current Capacity[1]	Remaining Capacity	Type of Development	Currently Served	Maximum Capacity	Remaining Capacity
City Hall	$41,159,077	75%	25%	Residential	115,208	152,860	37,652
				Nonresidential	51,027	68,595	17,568

Cost Allocation		
Residential	73%	$196.56 per person
Nonresidential	27%	$162.01 per job

1. City of Yuma, Engineering Department.

IIP and Development Fee Report – Plan Based

The cost to prepare the General Government IIP and development fees totals $8,900. Yuma 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*, the cost is $0.98 per person and is $0.57 per job.

Figure 23: IIP and Development Fee Report

Necessary Public Service	Cost	Assessed Against	Proportionate Share	Demand Unit	2018	2023	Change	Cost per Demand Unit
Fire	$13,350	Residential	45%	Peak Population	115,208	121,848	6,640	$0.90
		Nonresidential	55%	Jobs	51,027	55,242	4,215	$1.74
General Government	$8,900	Residential	73%	Peak Population	115,208	121,848	6,640	$0.98
		Nonresidential	27%	Jobs	51,027	55,242	4,215	$0.57
Parks and Recreation	$17,800	Residential	100%	Peak Population	115,208	121,848	6,640	$2.68
Police	$13,350	Residential	61%	Peak Population	115,208	121,848	6,640	$1.23
		Nonresidential	39%	Vehicle Trips	217,841	235,842	18,001	$0.29
Street	$35,600	Residential Nonresidential	100%	VMT	330,149	353,602	23,452	$1.52
Total	$89,000							

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 24 displays the ratio of a service unit to various types of land uses for residential and nonresidential development. The residential development table displays the persons per household for single-family units, multi-family units, and units in all other types of structures. Nonresidential development fees are calculated using jobs as the service unit. The multiplier for each land use, which is employees per thousand square feet, is shown below.

Figure 24: General Government Facilities Ratio of Service Unit to Development Unit

Residential Development	
Development Type	Persons per Household[1]
Single-Family	3.10
Multi-Family	2.16
All Other Types	1.80

Nonresidential Development	
Development Type	Jobs per 1,000 Sq Ft[1]
Commercial/Retail	2.00
Office/Institutional	3.32
Industrial/Flex	2.31
Hotel (per room)	0.44

1. See Land Use Assumptions

General Government Facilities Development Fees

Revenue Credit

The debt service associated with City Hall is being paid through property and sales tax revenues. Thus, these contributions from new development should be used in the IIP to determine the extent of the burden imposed by new development. The figure below calculates a credit for future property and sales tax contributions that will be applied to the cost of serving new development. A net present value calculation is used to account for the value of future revenues in current dollars.

Figure 25: Revenue Credit for City Hall

Year	Total Principal and Interest	Residential Share	Peak Population	Credit per Person	Nonresidenital Share	Jobs	Credit per Job
2012	$2,567,865	$1,874,541	110,132	$17.02	$693,324	47,889	$14.48
2012	$2,528,581	$1,845,864	111,376	$16.57	$682,717	48,655	$14.03
2013	$2,530,081	$1,846,959	112,634	$16.40	$683,122	49,433	$13.82
2014	$2,525,082	$1,843,310	113,907	$16.18	$681,772	50,224	$13.57
2015	$2,522,331	$1,841,302	115,194	$15.98	$681,029	51,027	$13.35
2016	$2,853,381	$2,082,968	116,495	$17.88	$770,413	51,843	$14.86
2017	$2,849,781	$2,080,340	117,811	$17.66	$769,441	52,672	$14.61
2018	$2,854,282	$2,083,626	119,142	$17.49	$770,656	53,515	$14.40
2019	$2,853,781	$2,083,260	120,488	$17.29	$770,521	54,371	$14.17
2020	$2,848,281	$2,079,245	121,848	$17.06	$769,036	55,242	$13.92
2021	$2,854,881	$2,084,063	123,227	$16.91	$770,818	56,126	$13.73
2022	$2,854,800	$2,084,004	124,622	$16.72	$770,796	57,024	$13.52
2023	$2,852,800	$2,082,544	126,033	$16.52	$770,256	57,936	$13.29
2024	$2,850,300	$2,080,719	127,464	$16.32	$769,581	58,864	$13.07
2025	$2,852,850	$2,082,581	128,911	$16.16	$770,270	59,806	$12.88
Total	$41,199,077	Total		$252.18	Total		$207.71
			Discount Rate	4.00%		Discount Rate	4.00%
		Credit per Person		$186.99	Credit per Job		$154.53

Proposed General Government Facilities Development Fees

Infrastructure standards and cost factors for general government fees are summarized in the upper portion of Figure 26. The conversion of infrastructure costs per service unit into a cost per development unit is also shown in the table below. For residential development, the average number of persons per household provides the necessary conversion. Development fees for residential development are determined by type of housing unit. For example, the fee for a single-family unit is $33 based on a cost factor of $10.55 per person and an average of 3.10 persons per household.

Nonresidential development fees are stated per square foot of floor area or, for hotels, per room. The general government fee of $0.02 per square foot of commercial/retail development is derived from a capital cost of $8.05 per job multiplied by 2.0 jobs per 1,000 square feet divided by 1,000 square feet.

Figure 26: Schedule of General Government Development Fees

Fee Component	Cost per Person	Cost per Job
City Hall Debt	$196.56	$162.01
City Hall Debt Credit	($189.78)	($159.07)
Development Fee Study	$0.98	$0.57
Total	$7.76	$3.51

Residential Development	Development Fees per Unit			
Development Type	Persons per Household[1]	Proposed Fees	Current Fees	Increase / Decrease
Single-Family	3.10	$24	$20	$4
Multi-Family	2.16	$17	$15	$2
All Other Types	1.80	$14	$12	$2

Nonresidential Development	Development Fees per Square Foot			
Development Type	Jobs per 1,000 Sq Ft[1]	Proposed Fees	Current Fees	Increase / Decrease
Commercial/Retail	2.00	$0.01	$0.013	($0.003)
Office/Institutional	3.32	$0.01	$0.022	($0.012)
Industrial/Flex	2.31	$0.01	$0.015	($0.005)
Hotel (per room)	0.44	$2	$3	($1)

1. See Land Use Assumptions

Forecast of Revenues

Appendix A contains the forecast of revenues required by Arizona's enabling legislation (ARS 9-463.05(E)(7)).

Projected General Government Facilities Development Fee Revenue

Projected fee revenue shown in Figure 27 is based on the development projections in the *Land Use Assumptions* and the updated general government development fees. If development occurs at a faster rate than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs at a slower rate than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate.

Anticipated development fee revenue of $90,000 over the next seven years is approximately equal to the projected growth-related cost of general government infrastructure ($90,000). Yuma will need additional funding to support existing development's share of the remaining debt service.

Figure 27: Projected General Government Development Fee Revenue

Fee Component	Growth Cost	Existing Cost	Total Cost
City Hall Debt	$2,821,990	$38,337,087	$41,159,077
City Hall Debt Credit	-$2,740,486	-$29,980,489	-$32,720,975
Development Fee Study	$8,900	$0	$8,900
Total	$90,404	$8,356,598	$8,447,002

		Residential $21 per unit	Commercial/ Retail $0.01 per SF	Office/ Institutional $0.01 per SF	Industrial/ Flex $0.01 per SF
Year		Households	KSF	KSF	KSF
Base	2018	38,593	12,486	5,148	3,878
Year 1	2019	39,068	12,686	5,230	3,940
Year 2	2020	39,548	12,889	5,314	4,003
Year 3	2021	40,034	13,095	5,399	4,067
Year 4	2022	40,527	13,305	5,485	4,132
Year 5	2023	41,025	13,518	5,573	4,198
Year 6	2024	41,530	13,735	5,662	4,265
Year 7	2025	42,041	13,955	5,753	4,333
7-Year Increase		3,448	1,469	605	455
Projected Revenue		$70,327	$9,813	$6,709	$3,511

Projected Fee Revenue	$90,360
Total Expenditures	$8,447,002
Existing Development Share	$8,356,642

PARKS AND RECREATION FACILITIES IIP

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

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

Parks and recreation development fees include cost recovery of the Pacific Avenue Athletic Complex and the cost of professional services for preparing the Parks and Recreation Facilities IIP and development fees. The cost recovery methodology is used to calculate the Pacific Avenue Athletic Complex component of the Parks and Recreation Facilities IIP and Development Fees. A plan-based methodology is used for the development fee study.

Service Area

The service area for all parks and recreation fees is the City of Yuma North Service Area—defined as all lands within the City of Yuma located north of and including 56th Street.

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."*

Pacific Avenue Athletic Complex – Cost Recovery

To provide regional park capacity for existing and future development throughout the city, Yuma recently constructed the Pacific Avenue Athletic Complex (PAAC). This component of the parks and recreation development fee will be used to repay debt issued to finance construction of the park. The final payment of this bond occurs in 2035, so this analysis uses the projected 2035 level of service to distribute costs equally among all residential development. Yuma does not plan to construct any additional regional parks until it repays debt associated with the PAAC.

Yuma's 2035 regional parks inventory, shown in Figure 28, includes 115.2 developed acres serving a projected peak population of 115,208. The definition of necessary public services defined in the Arizona Revised Statutes excludes wetlands and includes "parks and recreational facilities on real property up to thirty acres in area, or parks and recreational facilities larger than thirty acres if the facilities provide a direct benefit to the development." Although the PAAC includes more than 30 acres, its unique characteristics and amenities provide a direct benefit to development; therefore, total acreage is included for the PAAC.

Figure 28: Regional Parks Inventory

Description	Acres
Caballero Park	27.0
Gateway Park	13.4
Pacific Avenue Athletic Complex	44.8
West Wetlands Park[1]	30.0
Total	115.2

1. Excludes wetlands

Level of Service

Based on the projected 2035 inventory of regional park acreage and the projected 2035 peak population, the level of service for regional parks is 0.00083 acres per person (115.2 acres / 139,547 peak population). Total principal and interest payments for the PAAC, shown below in Figure 29, total $17.415 million and include 44.8 acres with an average cost of $388,724 per acre ($17,415,000 / 44.8 acres). As discussed above, parks and recreations improvements are allocated 100 percent to residential development. To allocate costs equally, the analysis applies the cost per acre to the projected 2035 level of service. This results in a cost per demand unit of $320.91 per person ($388,728 per acre X 0.00083 level of service).

Future development's share of the PAAC, based on a population increase of 24,339 (2035 population of 139,547 - 2018 population of 115,208) and a projected 2035 level of service of 0.00083 acres per person, is 20.1 acres (24,339 additional persons X 0.00083 acres) and $7.81 million (20.1 acres X $388,728 per acre). Existing development's share of the PAAC is 24.7 acres (44.8 total acres – 20.1 acres from future development) and $9.6 million ($17.415 million total cost - $7.810 million future development cost). Yuma's previous study included a park named the Yuma East Athletic Park that, through the planning and capital improvement processes, became the Pacific Avenue Athletic Complex. Any fees collected for the Yuma East Athletic Park should be used to offset existing development's share of the Pacific Avenue Athletic Complex.

Figure 29: Cost Allocation for the PAAC

Cost Allocation Factors	
PAAC Principal and Interest	$17,415,000
PAAC Acres	44.8
Cost per Acre	$388,728

Level-of-Service (LOS) Standards	
Total Acres	115.2
2035 Peak Population	139,547
Acres per Person	0.00083
Cost per Person	**$320.91**

Development Fee Study – Plan Based

The cost to prepare the Parks and Recreation IIP and development fees totals $17,800. Yuma plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of new residential development from the *Land Use Assumptions*, the cost is $2.68 per person.

Figure 30: IIP and Development Fee Report

Necessary Public Service	Cost	Assessed Against	Proportionate Share	Demand Unit	2018	2023	Change	Cost per Demand Unit
Fire	$13,350	Residential	45%	Peak Population	115,208	121,848	6,640	$0.90
		Nonresidential	55%	Jobs	51,027	55,242	4,215	$1.74
General Government	$8,900	Residential	73%	Peak Population	115,208	121,848	6,640	$0.98
		Nonresidential	27%	Jobs	51,027	55,242	4,215	$0.57
Parks and Recreation	$17,800	Residential	100%	Peak Population	115,208	121,848	6,640	$2.68
Police	$13,350	Residential	61%	Peak Population	115,208	121,848	6,640	$1.23
		Nonresidential	39%	Vehicle Trips	217,841	235,842	18,001	$0.29
Street	$35,600	Residential Nonresidential	100%	VMT	330,149	353,602	23,452	$1.52
Total	$89,000							

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 31 displays the level of service of each Parks and Recreational Facilities element.

Figure 31: Parks and Recreation Facilities Ratio of Service Unit to Development Unit

Residential Development	
Development Type	**Persons per Household[1]**
Single-Family	3.10
Multi-Family	2.16
All Other Types	1.80

1. See Land Use Assumptions

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS 9-463.05(E)(5) requires:

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

As shown in Figure 32, the *Land Use Assumptions* projects an additional 13,703 persons over the next ten years (24,399 persons over the next 17 years).

ARS 9-463.05(E)(6) requires:

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

The projected service units are multiplied by the projected level of service for regional parks shown in Figure 32. New development will demand 20.1 acres of total regional parks in 2035 (115.2 acres), and the growth-related share of debt related to the PAAC is $7.81 million (20.1 acres X $388,728 per acre).

Figure 32: Projected Demand for Parks and Recreation Infrastructure

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Regional Parks	0.00083 Acres	per Person	$388,728
	0.00000 Acres	per Job	

Need for Regional Parks					
Year	Peak Population	Jobs	Residential	Nonresidential	Total
2018	115,208	51,027	95.1	0.0	95.1
2019	116,505	51,842	96.2	0.0	96.2
2020	117,815	52,672	97.3	0.0	97.3
2021	119,142	53,515	98.4	0.0	98.4
2022	120,488	54,371	99.5	0.0	99.5
2023	121,848	55,242	100.6	0.0	100.6
2024	123,227	56,126	101.7	0.0	101.7
2025	124,622	57,024	102.9	0.0	102.9
2026	126,033	57,936	104.0	0.0	104.0
2027	127,464	58,864	105.2	0.0	105.2
2028	128,911	59,806	106.4	0.0	106.4
2033	136,413	64,746	112.6	0.0	112.6
2035	139,547	66,835	115.2	0.0	115.2
17-Yr Increase	24,339	15,808	20.1	0.0	20.1

Growth-Related Expenditures	$7,810,524	$0	$7,810,524

PARKS AND RECREATION FACILITIES DEVELOPMENT FEES

Revenue Credit

A revenue credit is not necessary for parks and recreation facilities development fees.

Figure 33 provides a summary of the costs per demand unit used to calculate the parks and recreation development fees. As previously discussed, Parks and Recreation development fees are calculated for residential land uses. The total cost per residential demand unit is $323.59. The proposed fee for a single-family unit is $1,003 ($323.59 X 3.10 persons per household).

Figure 33: Schedule of Parks and Recreation Development Fees

Fee Component	Cost per Person
PAAC Cost Recovery	$320.91
Development Fee Study	$2.68
Total	$323.59

Residential Development	Development Fees per Unit			
Development Type	Persons per Housing Unit[1]	Proposed Fees	Current Fees	Increase / Decrease
Single-Family	3.10	$1,003	$1,011	($8)
Multi-Family	2.16	$699	$797	($98)
All Other Types	1.80	$582	$612	($30)

1. See Land Use Assumptions

PROJECTED PARKS AND RECREATION FACILITIES DEVELOPMENT FEE REVENUE

Appendix A contains the forecast of revenues required by Arizona's enabling legislation (ARS 9-463.05(E)(7)).

In accordance with state law, this report includes an IIP for park infrastructure needed to accommodate new development. Projected fee revenue shown in Figure 34 is based on the development projections in the *Land Use Assumptions* and the updated development fees for parks and recreation. To the extent these assumptions change, the projected fee revenue will change correspondingly. If development occurs at a more rapid rate than projected, the demand for infrastructure will increase and development fee revenue will increase at a corresponding rate. If development occurs at a slower rate than is projected, the demand for infrastructure will also decrease, along with development fee revenue. Anticipated development fee revenue over the next 17 years of $7.83 million is approximately equal to the projected growth-related cost of parks and recreation facilities. Because this IIP includes only parks infrastructure demanded by future development, there is no cost to existing development.

Figure 34: Projected Parks Development Fee Revenue

	Growth Cost	Total Cost
PAAC Cost Recovery	$7,810,524	$17,415,000
Development Fee Study	$17,800	$17,800
Total	$7,828,324	$17,432,800

		Residential $883 per unit
Year		Households
Base	2018	38,593
Year 1	2019	39,068
Year 2	2020	39,548
Year 3	2021	40,034
Year 4	2022	40,527
Year 5	2023	41,025
Year 6	2024	41,530
Year 7	2025	42,041
Year 8	2026	42,558
Year 9	2027	43,082
Year 10	2028	43,612
Year 15	2033	46,360
Year 17	2035	47,508
Ten-Yr Increase		8,915

Projected Fee Revenue	$7,827,981
Total Expenditures	$17,432,800
Existing Development Share	$9,604,819

POLICE FACILITIES IIP

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

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

The Police Facilities IIP includes components for police facilities, vehicles, equipment, the police share of fleet services, and the cost of professional services for preparing the Police Facilities IIP and Development Fees. The incremental expansion methodology, based on the existing level of service, is used to calculate the facilities, vehicles, equipment, and fleet services components of the Police Facilities IIP and Development Fees. A plan-based methodology is used for the development fee study.

Service Area

The service area for all police fees is the City of Yuma North Service Area—defined as all lands within the City of Yuma located north of and including 56th Street.

Proportionate Share

ARS 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Police Facilities IIP and Development Fees use calls for residential and nonresidential development in Yuma from October 2013 through September 2015 to allocate costs between residential and nonresidential development. As shown in Figure 35 below, 61 percent of the cost is allocated to residential development and 39 percent of the cost is allocated to nonresidential development.

Figure 35: Proportionate Share

Development Type	Calls for Service	Share
Residential	68,319	61%
Nonresidential	43,691	39%
Total	112,010	100%

Source: Yuma Police Department, October 2013 - September 2015.

The development fee for Police Facilities is calculated on a per capita basis for residential development. Nonresidential development fees are calculated using nonresidential vehicle trips as the service unit. TischlerBise recommends using nonresidential vehicle trips as the best demand indicator for police facilities and equipment. Trip generation rates are used for nonresidential development because vehicle trips are highest for commercial developments, such as shopping centers, and lowest for industrial/warehouse development. Office and institutional trip rates fall between the other two categories. This ranking of trip rates is consistent with the relative demand for police facilities from nonresidential development.

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

ARS 9-463.05(E)(1) requires:

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

ARS 9-463.05(E)(2) requires:

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

Police Facilities – Incremental Expansion

Police development fees contain a cost component for facilities. Since facility square footage will be increased as demanded by development, an incremental expansion method is utilized. As shown in Figure 36, the Police Department currently uses 168,121 square feet.

Figure 36: 2018 Police Facilities Inventory

Description	Square Feet
Police Station 1st Avenue	93,500
1st Avenue Parking Garage	46,000
Police Storage - Kayla	4,620
Police Storage - ALSCO	20,001
Araby Road Substation	4,000
Total	168,121

Level of Service

The current level of service is based on the residential and nonresidential shares of police calls for service and the 2018 demand units—peak population of 115,208 for residential development and nonresidential trips totaling 217,827 for nonresidential development. Therefore, the current residential level of service is 0.8902 square feet per person (168,121 X 61 percent residential share / 115,208 peak population), and the nonresidential level of service equals 0.3010 square feet per nonresidential trip (168,121 square feet X 39 percent nonresidential share / 217,827 nonresidential trips). Cost estimates for planned projects, shown below in Figure 37, total $5.0 million and include 62,000 square feet with an average cost of $81 per square foot ($5.0 million / 62,000 square feet).

Figure 37: Cost Allocation for Police Facilities

Cost Allocation Factors	
Cost per Square Foot	$81

Level-of-Service (LOS) Standards	
Existing Square Feet	168,121
Residential	
Residential Share	61%
2018 Peak Population	115,208
Square Feet per Person	0.89016
Cost per Person	**$72.10**
Nonresidential	
Nonresidential Share	39%
2018 Vehicle Trips	217,841
Square Feet per Vehicle Trip	0.30099
Cost per Vehicle Trip	**$24.38**

Description	Square Feet	Cost per SF	Total Cost
Storage Facility: Vehicle (Indoor)	50,000	$70	$3,500,000
Storage Facility: Evidence	8,000	$100	$800,000
Evidence Processing (Covered)	4,000	$175	$700,000
Total	62,000	$81	$5,000,000

Source: City of Yuma.

Police Vehicles – Incremental Expansion

Development fees will be used to expand Yuma's inventory of police vehicles. Figure 38 lists the current vehicles used by Yuma's Police Department—97 vehicles representing a capital investment of approximately $5.76 million. The average cost is approximately $59,330 per vehicle ($5,755,000 / 97 vehicles).

Figure 38: 2018 Police Vehicles Inventory and Cost Allocation

Description	Units	Unit Cost	Total Cost
Ford Utility Interceptors (Marked)	22	$65,000	$1,430,000
Ford Utility Interceptors (Unmarked)	8	$55,000	$440,000
Ford Crown Victoria (Marked)	40	$60,000	$2,400,000
Ford Crown Victoria (Unmarked)	27	$55,000	$1,485,000
Total	97	$59,330	$5,755,000

Cost Allocation Factors	
Total Cost	$5,755,000
Cost per Unit	$59,330

Level-of-Service (LOS) Standards	
Existing Vehicles	97
Residential	
Residential Share	61%
2018 Peak Population	115,208
Units per Person	0.00051
Cost per Person	**$30.47**
Nonresidential	
Nonresidential Share	39%
2018 Vehicle Trips	217,841
Units per Vehicle Trip	0.00017
Cost per Vehicle Trip	**$10.30**

Level of Service

Non-traffic police calls for service are used to allocate the proportionate share of demand to residential and nonresidential development. Yuma's existing infrastructure standard for residential development is 0.00051 vehicles per person (97 vehicles X 61 percent residential share / 115,208 peak population). The nonresidential infrastructure standard is 0.00017 vehicles per vehicle trip (97 vehicles X 39 percent nonresidential share / 217,827 nonresidential vehicle trips). The cost per person is $30.47 ($59,330 per vehicle X 0.00051 residential level of service) and the cost per vehicle trip is $10.30 ($59,330 per vehicle X 0.00017 nonresidential level of service).

Police Equipment – Incremental Expansion

Development fees will be used to expand Yuma's inventory of police equipment. Figure 39 lists the current equipment used by Yuma's police department. Yuma currently has 12 units of police equipment representing a capital investment of approximately $90,000. The weighted average cost is approximately $7,500 per unit ($90,000 / 12 units).

Figure 39: 2018 Police Equipment Inventory and Cost Allocation

Description	Units	Unit Cost	Total Cost
Wells Fargo Trailer	1	$4,000	$4,000
Hmd 19'	1	$4,500	$4,500
Carson	1	$5,500	$5,500
Wells Fargo Trailer 14'	1	$5,500	$5,500
Pace Am (Cargo Trailer)	1	$4,000	$4,000
Seat Belt Demo Trailer	1	$13,000	$13,000
Speed Awareness Trailer	1	$7,000	$7,000
Pace Box (Traffic Trailer)	1	$4,500	$4,500
Haulmark	1	$4,500	$4,500
Speed Awareness Trailer	1	$7,000	$7,000
Scissor Lift Trailer	1	$27,500	$27,500
Parker (Atv Trailer)	1	$3,000	$3,000
Total	12	$7,500	$90,000

Cost Allocation Factors	
Total Cost	$90,000
Cost per Unit	$7,500

Level-of-Service (LOS) Standards	
Existing Equipment	12
Residential	
Residential Share	61%
2018 Peak Population	115,208
Units per Person	0.00006
Cost per Person	**$0.48**
Nonresidential	
Nonresidential Share	39%
2018 Vehicle Trips	217,841
Units per Vehicle Trip	0.00002
Cost per Vehicle Trip	**$0.16**

Level of Service

Police equipment costs are allocated according to non-traffic police calls for service—61 percent to residential development and 39 percent to nonresidential development. Yuma's existing infrastructure standard for residential development is 0.00006 units per person based on the 2018 peak population of 115,208 (12 units X 61 percent residential share / 115,208 peak population). The nonresidential infrastructure standard, based on 2018 vehicle trips of 217,827, is 0.00002 units per vehicle trip (12 units X 39 percent nonresidential share / 217,827 vehicle trips).

Fleet Services – Incremental Expansion

To meet the proportionality requirement, development fees allocate capital costs to the Police Department and the Fire Department based on each department's usage of the Fleet Services Facilities. According to the proportionate share analysis shown in Figure 40, the Police Department accounts for 28 percent of the demand for fleet services, and the Fire Department accounts for three percent of fleet services demand.

Figure 40: Fleet Services Usage and Inventory

Services Used

Timeframe	Total Services	Police	Fire
2013-14	3,479	977	105
2014-15	3,386	946	100
Total	6,865	1,923	205

Existing Fleet Facilities

Description	Square Feet
Fleet Shop	14,195
Fleet Warehouse	7,457
Total	21,652

Share of Services

Timeframe	Police	Fire
2013-14	28%	3%
2014-15	28%	3%
Share	28%	3%

Share of Fleet Services Square Footage

Description	Police	Fire
Fleet Shop	3,975	426
Fleet Warehouse	2,088	224
Total Square Feet	6,063	650

Existing Inventory

Police development fees contain a cost component for fleet services facilities. Since facility square footage will be increased as demanded by development, an incremental expansion method is utilized. As shown in Figure 40, existing fleet services facilities total 21,652 square feet. The Police Department's proportionate share is 6,063 square feet (21,652 square feet X 28 percent share).

Level of Service

The current level of service is based on the residential and nonresidential shares of police calls for service and the 2018 demand units—peak population of 115,208 for residential development and nonresidential trips totaling 217,827 for nonresidential development. Therefore, the current residential level of service is 0.0321 square feet per person (6,063 X 61 percent residential share / 115,208 peak population), and the nonresidential level of service equals 0.0109 square feet per vehicle trip (6,063 square feet X 39 percent nonresidential share / 217,827 vehicle trips). Cost estimates for the Fleet Services Facility, shown below in Figure 41, total approximately $14.41 million for a 40,000-square-foot facility with an average cost of approximately $360 per square foot ($14,406,692 / 40,000 square feet).

Figure 41: Cost Allocation for Fleet Services – Police Share

Description	Square Feet
Fleet Shop	3,975
Fleet Warehouse	2,088
TOTAL	6,063

Cost Allocation Factors	
Existing Square Feet	6,063
Cost per Square Foot	$360

Level-of-Service (LOS) Standards	
Residential	
Residential Share	61%
2018 Peak Population	115,208
Square Feet per Person	0.03210
Cost per Person	**$11.56**
Nonresidential	
Nonresidential Share	39%
2018 Vehicle Trips	217,841
Square Feet per Vehicle Trip	0.01085
Cost per Vehicle Trip	**$3.91**

Cost Basis from Planned Projects

Description	Square Feet	Cost per SF	Total Cost
Fleet Services	40,000	$360	$14,406,692

Development Fee Study – Plan Based

The cost to prepare the Police Facilities IIP and development fees totals $13,350. Yuma 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*, the cost is $1.23 per person and the cost is $0.29 per vehicle trip.

Figure 42: IIP and Development Fee Report

Necessary Public Service	Cost	Assessed Against	Proportionate Share	Demand Unit	2018	2023	Change	Cost per Demand Unit
Fire	$13,350	Residential	45%	Peak Population	115,208	121,848	6,640	$0.90
		Nonresidential	55%	Jobs	51,027	55,242	4,215	$1.74
General Government	$8,900	Residential	73%	Peak Population	115,208	121,848	6,640	$0.98
		Nonresidential	27%	Jobs	51,027	55,242	4,215	$0.57
Parks and Recreation	$17,800	Residential	100%	Peak Population	115,208	121,848	6,640	$2.68
Police	$13,350	Residential	61%	Peak Population	115,208	121,848	6,640	$1.23
		Nonresidential	39%	Vehicle Trips	217,841	235,842	18,001	$0.29
Street	$35,600	Residential Nonresidential	100%	VMT	330,149	353,602	23,452	$1.52
Total	$89,000							

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 43 displays the ratio of a service unit to various types of land uses for residential and nonresidential development. The residential development table displays the persons per household for single-family units, multi-family units, and units in all other types of housing.

Nonresidential development fees are calculated using trips as the service unit. TischlerBise recommends using nonresidential vehicle trips as the best demand indicator for police facilities and equipment. Trip generation rates are used for nonresidential development because vehicle trips are highest for commercial developments, such as shopping centers, and lowest for industrial/warehouse development. Office and institutional trip rates fall between the other two categories. This ranking of trip rates is consistent with the relative demand for police from nonresidential development. Other possible nonresidential demand indicators, such as employment or floor area, will not accurately reflect the demand for service. For example, if employees per thousand square feet were used as the demand indicator, police development fees would be too high for office and institutional development because offices typically have more employees per 1,000 square feet than retail uses. If floor area were used as the demand indicator, police development fees would be too high for industrial development.

Trip generation rates are from the reference book Trip Generation published by the Institute of Transportation Engineers (ITE 9th Edition 2012). A vehicle trip end represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). To calculate development fees, trip generation rates require an adjustment factor to avoid double counting each trip at both the origin and destination points. Therefore, the basic trip adjustment factor is 50%.

For commercial development, the trip adjustment factor is less than 50% because retail development and some services attract vehicles as they pass by on arterial and collector roads. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For the average shopping center, the ITE data indicates that 34% of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66% of attraction trips have the commercial site as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 66 percent multiplied by 50 percent, or approximately 33 percent of the trip ends. These factors are shown to derive inbound vehicle trips for each type of nonresidential land use.

Figure 43: Police Facilities Ratio of Service Unit to Development Unit

Residential Development	
Development Type	**Persons per Household[1]**
Single-Family	3.10
Multi-Family	2.16
All Other Types	1.80

Nonresidential Development			
Development Type	**Avg Wkdy Veh Trip Ends[1] (a)**	**Trip Rate Adjustment (b)**	**Inbound Trips (a x b)**
Commercial/Retail	42.70	33%	14.09
Office/Institutional	11.03	50%	5.52
Industrial/Flex	6.97	50%	3.49
Hotel (per room)	5.63	50%	2.82

1. See Land Use Assumptions

PROJECTED SERVICE UNITS AND PROJECTED DEMAND FOR SERVICES

ARS 9-463.05(E)(5) requires:

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

As shown in Figure 44, the Land Use Assumptions projects an additional 13,703 persons and 37,499 nonresidential vehicle trips over the next ten years.

ARS 9-463.05(E)(6) requires:

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

Police Facilities

Shown in Figure 44, peak population is projected to increase by 13,703 persons by 2028, and nonresidential vehicle trips will increase by 37,503 trips during the same period. When applied to the 2018 LOS, future development will demand 23,486 square feet of police facilities [(0.8902 LOS X 13,703 peak population increase) + (0.3010 LOS X 37,503 nonresidential trip increase)). Based on the average cost of $81 per square foot, the growth-related expenditure on police facilities is $1.90 million (23,486 square feet X $81).

Figure 44: Projected Demand for Police Facilities

Type of Infrastructure	Level of Service		Demand Unit	Average Cost
Facilities	0.8902	Square Feet	per Person	$81
	0.3010	Square Feet	per Vehicle Trip	

Need for Police Facilities					
Year	Peak Population	Vehicle Trips	Residential	Nonresidential	Total
2018	115,208	217,841	102,554	65,567	168,121
2019	116,505	221,327	103,708	66,617	170,325
2020	117,815	224,871	104,874	67,683	172,558
2021	119,142	228,465	106,056	68,765	174,821
2022	120,488	232,125	107,254	69,867	177,120
2023	121,848	235,842	108,464	70,985	179,450
2024	123,227	239,624	109,692	72,124	181,816
2025	124,622	243,463	110,934	73,279	184,213
2026	126,033	247,353	112,190	74,450	186,640
2027	127,464	251,317	113,464	75,643	189,107
2028	128,911	255,344	114,752	76,855	191,607
Ten-Yr Increase	13,703	37,503	12,198	11,288	23,486

Growth-Related Expenditures	**$988,029**	**$914,319**	**$1,902,348**

Police Vehicles

Shown in Figure 45, peak population is projected to increase by 13,703 persons by 2028, and nonresidential vehicle trips will increase by 37,503 trips during the same period. Future development will demand 13.5 additional police vehicles [(0.00051 LOS X 13,703 peak population increase) + (0.00017 LOS X 37,503 vehicle trip increase)). The growth-related expenditure on police vehicles is $803,949 (13.5 vehicles X $59,330 per vehicle).

Figure 45: Projected Demand for Police Vehicles

Type of Infrastructure	Level of Service		Demand Unit	Average Cost
Vehicles	0.00051	Vehicles	per Person	$59,330
	0.00017	Vehicles	per Nonres. Trip	

Need for Police Vehicles					
Year	Peak Population	Vehicle Trips	Residential	Nonresidential	Total
2018	115,208	217,841	59.0	38.0	97.0
2019	116,505	221,327	59.8	38.4	98.2
2020	117,815	224,871	60.5	39.1	99.6
2021	119,142	228,465	61.2	39.7	100.9
2022	120,488	232,125	61.9	40.3	102.2
2023	121,848	235,842	62.6	41.0	103.6
2024	123,227	239,624	63.3	41.6	104.9
2025	124,622	243,463	64.0	42.3	106.3
2026	126,033	247,353	64.7	43.0	107.7
2027	127,464	251,317	65.5	43.6	109.1
2028	128,911	255,344	66.2	44.3	110.5
Ten-Yr Increase	13,703	37,503	7.2	6.3	13.5

Growth-Related Expenditures	$417,550	$386,399	$803,949

Police Equipment

As shown in Figure 46, peak population and nonresidential trips drive the need for police equipment. Based on the development projections in the *Land Use Assumptions*, Yuma will need approximately 1.7 additional units of police equipment over the next ten years ([0.00006 LOS X 13,703] + [0.00002 LOS X 37,499]). The ten-year, growth-related capital cost associated with these additional units of police equipment is $12,750 (1.7 units X $7,500).

Figure 46: Projected Demand for Police Equipment

Type of Infrastructure	Level of Service		Demand Unit	Average Cost
Equipment	0.00006	Units	per Person	$7,500
	0.00002	Units	per Nonres. Trip	

Need for Police Equipment					
Year	Peak Population	Vehicle Trips	Residential	Nonresidential	Total
2018	115,208	217,841	7.3	4.7	12.0
2019	116,505	221,327	7.4	4.8	12.2
2020	117,815	224,871	7.5	4.8	12.3
2021	119,142	228,465	7.6	4.9	12.5
2022	120,488	232,125	7.7	5.0	12.7
2023	121,848	235,842	7.7	5.1	12.8
2024	123,227	239,624	7.8	5.1	12.9
2025	124,622	243,463	7.9	5.2	13.1
2026	126,033	247,353	8.0	5.3	13.3
2027	127,464	251,317	8.1	5.4	13.5
2028	128,911	255,344	8.2	5.5	13.7
Ten-Yr Increase	13,703	37,503	0.9	0.8	1.7

Growth-Related Expenditures	$6,530	$6,043	$12,573

Police Fleet Services

Shown in Figure 47, peak population is projected to increase by 13,703 persons by 2028, and vehicle trips will increase by 37,503 trips during the same period. When applied to the 2018 LOS, future development will demand 847 square feet of fleet services facilities [(0.0321 LOS X 13,703 peak population increase) + (0.01085 LOS X 37,503 nonresidential trip increase)). Based on the average cost of $360 per square foot, the growth-related expenditure on fleet services facilities is $304,911 (847 square feet X $360).

Figure 47: Projected Demand for Police Fleet Services

Type of Infrastructure	Level of Service		Demand Unit	Average Cost
Fleet Services	0.03210	Square Feet	per Person	$360
	0.01085	Square Feet	per Nonres. Trip	

Need for Police Fleet Services					
Year	Peak Population	Vehicle Trips	Residential	Nonresidential	Total
2018	115,208	217,841	3,698	2,365	6,063
2019	116,505	221,327	3,740	2,402	6,142
2020	117,815	224,871	3,782	2,441	6,223
2021	119,142	228,465	3,825	2,480	6,305
2022	120,488	232,125	3,868	2,520	6,388
2023	121,848	235,842	3,912	2,560	6,472
2024	123,227	239,624	3,956	2,601	6,557
2025	124,622	243,463	4,001	2,643	6,644
2026	126,033	247,353	4,046	2,685	6,731
2027	127,464	251,317	4,092	2,728	6,820
2028	128,911	255,344	4,138	2,772	6,910
Ten-Yr Increase	13,703	37,503	440	407	847

Growth-Related Expenditures	$158,363	$146,548	$304,911

Police Facilities Development Fees

Revenue Credit

A revenue credit is not necessary for Police Facilities Development Fees.

Proposed Police Facilities Development Fees

Infrastructure standards and cost factors for police fees are summarized in the upper portion of Figure 48. Development fees for residential development are determined by type of housing unit. For example, the police fee for a dwelling in a multi-family structure is $250 based on a cost factor of $115.84 per person and an average of 2.16 persons per household.

Nonresidential development fees are stated per square foot of floor area or, for hotels, per room. The police fee of $0.55 per square foot of commercial/retail development is derived from a capital cost of $39.04 per vehicle trip multiplied by 42.70 average weekday vehicle trip ends with a trip rate adjustment of 33 percent divided by 1,000 square feet.

Figure 48: Schedule of Police Development Fees

Fee Component	Cost per Person	Cost per Vehicle Trip
Police Facilities	$72.10	$24.38
Police Vehicles	$30.47	$10.30
Police Equipment	$0.48	$0.16
Fleet Services	$11.56	$3.91
Development Fee Study	$1.23	$0.29
TOTAL	$115.84	$39.04

Residential Development	Development Fees per Unit			
Development Type	Persons per Household[1]	Proposed Fees	Current Fees	Increase / Decrease
Single-Family	3.10	$359	$506	($147)
Multi-Family	2.16	$250	$399	($149)
All Other Types	1.80	$209	$306	($97)

Nonresidential Development	Development Fees per Square Foot				
Development Type	Avg Wkdy Veh Trip Ends[1]	Trip Rate Adjustment	Proposed Fees	Current Fees	Increase / Decrease
Commercial/Retail	42.70	33%	$0.55	$0.95	($0.40)
Office/Institutional	11.03	50%	$0.22	$0.47	($0.25)
Industrial/Flex	6.97	50%	$0.14	$0.30	($0.16)
Hotel (per room)	5.63	50%	$110	$239	($129)

1. See Land Use Assumptions

FORECAST OF REVENUES

Appendix A contains the forecast of revenues required by Arizona's enabling legislation (ARS 9-463.05(E)(7)).

Projected Police Development Fee Revenue

Projected fee revenue shown in Figure 49 is based on the development projections in the *Land Use Assumptions* and the updated Police development fees. If development occurs at a faster rate than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs at a slower rate than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate.

Anticipated development fee revenue of approximately $3.04 million over the next ten years is approximately equal to the projected growth-related cost of police facilities ($3.04 million).

Figure 49: Projected Revenue from Police Development Fees

Fee Component	Growth Cost	Existing Cost	Total Cost
Police Facilities	$1,902,348	$0	$1,902,348
Police Vehicles	$803,949	$0	$803,949
Police Equipment	$12,573	$0	$12,573
Fleet Services	$304,911	$0	$304,911
Development Fee Study	$13,350	$0	$13,350
Total	$3,037,131	$0	$3,037,131

		Residential $316 per unit	Commercial/ Retail $0.55 per SF	Office/ Institutional $0.22 per SF	Industrial/ Flex $0.14 per SF
Year		Households	KSF	KSF	KSF
Base	2018	38,593	12,486	5,148	3,878
Year 1	2019	39,068	12,686	5,230	3,940
Year 2	2020	39,548	12,889	5,314	4,003
Year 3	2021	40,034	13,095	5,399	4,067
Year 4	2022	40,527	13,305	5,485	4,132
Year 5	2023	41,025	13,518	5,573	4,198
Year 6	2024	41,530	13,735	5,662	4,265
Year 7	2025	42,041	13,955	5,753	4,333
Year 8	2026	42,558	14,178	5,845	4,402
Year 9	2027	43,082	14,405	5,939	4,473
Year 10	2028	43,612	14,636	6,034	4,544
Ten-Year Increase		5,019	2,150	886	666
Projected Revenue		$1,578,508	$1,178,230	$190,033	$90,266

Projected Fee Revenue	$3,037,037
Total Expenditures	$3,037,131

STREET FACILITIES IIP

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

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

The Street Facilities IIP includes components for arterials, signalized intersections, bike lanes, bridges, and the cost of professional services for preparing the Street Facilities IIP and Development Fees. The incremental expansion methodology, based on the existing level of service, is used to calculate the signalized intersections and bike lanes components of the Street Facilities IIP and Development Fees. A plan-based methodology is used for arterials, bridges, and the development fee study.

Service Area

The service area for all street fees is the City of Yuma North Service Area—defined as all lands within the City of Yuma located north of and including 56th Street.

Proportionate Share

ARS 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to provide necessary public services to the development. Trip generation rates and trip adjustment factors are used to determine the proportionate impact of residential, commercial, office, and industrial land uses on Yuma's street network.

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."*

The existing public services included in the Street Facilities IIP are lane miles of major and prime arterials, improved intersections, and bike lanes.

Figure 50: Yuma Street Facilities Inventory

Arterial Lane Miles	204.7
Improved Intersections	28
Bike Lanes	12.4

Arterials – Plan-Based

Yuma's Capital Improvement Plan identified 28 lane miles of potential arterial improvements needed within the next 10 years; however, Yuma plans to construct only five lane miles of arterial improvements. Yuma will use the average cost of the potential arterial improvements and select any five lane miles of the total 28 lane miles of arterial improvements. Shown below in Figure 51, the average cost of approximately $1,137,946 per arterial lane mile ($31,862,500 / 28.0) is based on projects from Yuma's CIP. Based on a planned cost of $5,689,732 (5.0 lane miles X $1,137,946 per lane mile) and a 10-year increase of 48,619 vehicle miles of travel, the cost per VMT is $117.03 ($5,689,732 / 48,619).

Figure 51: Existing Standards and Cost Allocations for Arterials

Description	New Lane Miles[1]	Total Cost[1]
Ave 9E Widening, 24th St to N. Frontage Rd	3.00	$1,800,000
40th St, Ave 6¾E to Ave 8E	3.50	$4,287,500
40th St, Ave 8E to Ave 10E	6.00	$6,175,000
Ave 3½E Widening, 32nd St to 44th St	3.00	$2,430,000
Ave 6E Widening, 32nd St to 48th St	4.00	$5,450,000
32nd St Widening, Ave 6E to Ave 7E	2.00	$2,625,000
28th St, 45th Ave to Avenue C	1.00	$1,350,000
32nd St Widening, Avenue B to Avenue C	2.00	$3,050,000
45th Avenue (East Half), 28th St to 24th St	0.50	$670,000
Giss Pkwy, WB Off Ramp to 8th St/Castle Dome, 8th St, Castle Dome to Pacific Ave Pacific Ave, 8th St to 12th St	3.00	$4,025,000
Total	28.00	$31,862,500

Cost Allocation Factors	
Eligible Arterial Lane Miles	28.0
Total Cost of Arterial Improvements	$31,862,500
Cost per Lane Mile	$1,137,946

Level-of-Service (LOS) Standards	
Planned Arterial Lane Miles	5.0
Planned Arterial Improvements	$5,689,732
10-Year VMT Increase	48,619
Cost per VMT	**$117.03**

1. Yuma Engineering Department.

Signalized Intersections – Incremental Expansion

Similar to arterials, level-of-service standards for signalized intersections also use vehicle miles of travel. Yuma's streets infrastructure includes 28 signalized intersections, and when allocated per VMT, the level of service is 0.00008 signalized intersections per VMT (28 signalized intersections / 330,149 VMT). City staff identified 11 eligible intersection improvement projects from the most recent CIP to determine an average cost per signalized intersection of $433,636 ($4,770,000 / 11). Yuma plans to construct four of the 11 signalized intersections shown below.

Figure 52: Existing Standards and Cost Allocations for Signalized Intersections

Description	Eligible Cost
18th St and Avenue C Traffic Signal	$295,000
32nd St and Avenue C Traffic Signal	$310,000
40th St and Ave 6E Traffic Signal	$295,000
40th St and Ave 8E Traffic Signal	$310,000
32nd St and Avenue B Turn Lanes	$950,000
16th St and Pacific Avenue Turn Lane	$175,000
16th St and Avenue B Turn Lane	$175,000
24th St and Arizona Avenue Turn Lanes	$350,000
32nd St and Avenue 7E Turn Lane	$210,000
24th St and 1st Avenue Turn Lane	$250,000
32nd St and Pacific Avenue Widening	$1,450,000
Total	$4,770,000

Cost Allocation Factors	
Existing Signalized Intersections	28
Cost per Signalized Intersection	$433,636

Level-of-Service (LOS) Standards	
2018 VMT	330,149
Signalized Intersections per VMT	0.00008
Cost per VMT	**$36.78**

Source: Yuma Engineering Department.

Bike Lanes – Incremental Expansion

The City of Yuma Transportation Master Plan identifies the need for bike lanes. To ensure new development pays for only its share of improvements, an incremental expansion methodology is used for this component. Figure 53 lists the 2018 inventory of bike lanes, located within a street right-of-way, at 32.8 miles.

Bike lanes are allocated per VMT for residential and nonresidential development. Based on the 2018 VMT of 330,149, the existing level of service is 0.00010 miles per VMT (32.8 miles / 330,149). The weighted average cost is $211,875 per mile ($5,085,000 / 24.0 miles). This cost is based on ten eligible bike lane projects included in the fiscal year 2014-2015 CIP.

Figure 53: Existing Standards and Cost Allocations Bike Lanes

Description	New Lane Miles[1]	Total Cost[1]
Ave 9E Widening, 24th St to N. Frontage Rd	3.00	$585,000
40th St, Ave 6¾E to Ave 8E	2.50	$562,500
40th St, Ave 8E to Ave 10E	4.00	$900,000
Ave 3½E Widening, 32nd St to 44th St	3.00	$585,000
Ave 6E Widening, 32nd St to 48th St	3.00	$675,000
32nd St Widening, Ave 6E to Ave 7E	2.00	$450,000
28th St, 45th Ave to Avenue C	1.00	$195,000
32nd St Widening, Avenue B to Avenue C	2.00	$450,000
45th Avenue (East Half), 28th St to 24th St	0.50	$97,500
Giss Pkwy, WB Off Ramp to 8th St/Castle Dome, 8th St, Castle Dome to Pacific Ave, Pacific Ave, 8th St to 12th St	3.00	$585,000
Total	24.00	$5,085,000

Cost Allocation Factors	
Existing Bike Lane Miles	32.8
Cost per Lane Mile	$211,875

Level-of-Service (LOS) Standards	
2018 VMT	330,149
Bike Lane Miles per VMT	0.00010
Cost per VMT	**$21.05**

1. Yuma Engineering Department.

Bridges – Plan Based

The City of Yuma identified the need for bridges. To ensure new development pays for only its share of improvements, city staff analyzed existing conditions to determine a growth share for the planned project. Based on these estimates, the growth-related cost is $1,1903,060. Allocating the growth-related cost to the projected increase in vehicle miles of travel results in a cost per VMT of $24.54 ($1,193,060 / 48,619).

Figure 54: Allocation Factors for Planned Bridges

Description	Total Cost[1]	Growth Share[1]	Growth Cost
Avenue 7E and 40th St Box Culvert at A Canal	$1,870,000	63.8%	$1,193,060
Total	$1,870,000	63.8%	$1,193,060

Level-of-Service (LOS) Standards	
Growth Cost	$1,193,060
10-Year VMT Increase	48,619
Cost per VMT	**$24.54**

1. Yuma Engineering Department.

IIP and Development Fee Report – Plan Based

The cost to prepare the Streets IIP and development fees totals $35,600. Yuma 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*, the cost is $1.52 per VMT.

Figure 55: IIP and Development Fee Report

Necessary Public Service	Cost	Assessed Against	Proportionate Share	Demand Unit	2018	2023	Change	Cost per Demand Unit
Fire	$13,350	Residential	45%	Peak Population	115,208	121,848	6,640	$0.90
		Nonresidential	55%	Jobs	51,027	55,242	4,215	$1.74
General Government	$8,900	Residential	73%	Peak Population	115,208	121,848	6,640	$0.98
		Nonresidential	27%	Jobs	51,027	55,242	4,215	$0.57
Parks and Recreation	$17,800	Residential	100%	Peak Population	115,208	121,848	6,640	$2.68
Police	$13,350	Residential	61%	Peak Population	115,208	121,848	6,640	$1.23
		Nonresidential	39%	Vehicle Trips	217,841	235,842	18,001	$0.29
Street	$35,600	Residential Nonresidential	100%	VMT	330,149	353,602	23,452	$1.52
Total	$89,000							

LEVEL OF SERVICE AND RATIO OF SERVICE UNIT TO LAND USE

Service Units

Yuma will use average weekday vehicle trip ends as the service units for documenting existing infrastructure standards and allocating the costs of future improvements. Components used to determine the service units and input variables are discussed, including trip generation rates, adjustments for commuting patterns and pass-by trips, and trip length weighting factors.

Trip Rate Adjustments

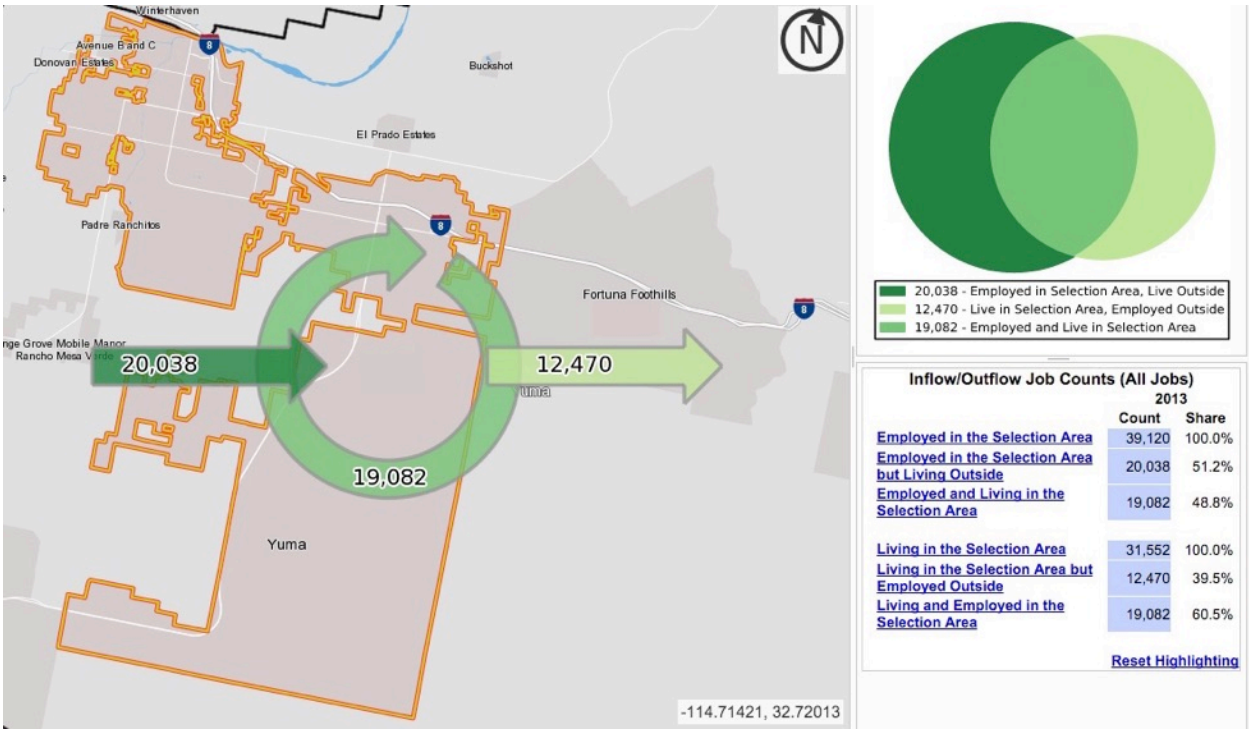
Yuma's streets development fees use average weekday trip generation rates from the reference book *Trip Generation* published by the Institute of Transportation Engineers (ITE 2012). A vehicle trip end represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). To calculate streets 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.

Adjustment for Journey-To-Work Commuting

Residential development has a larger trip adjustment factor of 56% to account for commuters leaving Yuma for work. According to the 2009 National Household Travel Survey, 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 56, the Census Bureau's web application OnTheMap[1] indicates that 39.5 percent of resident workers traveled outside Yuma for work in 2013. In combination, these factors (0.31 x 0.50 x 0.395 = 0.06) support the additional six percent allocation of trips to residential development.

[1] OnTheMap is a web-based mapping and reporting application that shows where workers are employed and where they live and it describes geographic patterns of jobs by their employment locations and residential locations as well as the connections between the two locations. OnTheMap was developed through a unique partnership between the U.S. Census Bureau and its Local Employment Dynamics (LED) partner states.

Figure 56: Inflow/Outflow Analysis



Adjustment for Pass-By Trips

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

PROJECTED SERVICE UNITS, DEMAND, AND COSTS FOR SERVICES

TischlerBise created an aggregate travel model to convert development units within Yuma to vehicle trips and vehicle miles of travel.

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."*

Yuma Travel Demand

The relationship between the amount of development in Yuma and growth-related system improvements is documented below. Figure 57 summarizes the input variables used to determine the average trip length on arterial improvements. In the table below HU means housing units, KSF means square feet of nonresidential development, in thousands, Institute of Transportation Engineers is abbreviated ITE, VTE

means vehicle trip ends, and VMT means vehicle miles of travel. Trip generation rates by type of housing unit are documented in the *Land Use Assumptions*.

Projected development in Yuma over the next ten years, and the corresponding need for additional lane miles, is shown in the middle section of Figure 57. Trip generation rates and trip adjustment factors convert projected development into average weekday vehicle trips. A typical vehicle trip, such as a person leaving their home and traveling to work, generally begins on a local street that connects to a collector street, which connects to an arterial road and eventually to a state or interstate highway. This progression of travel up and down the functional classification chain limits the average trip length determination, for the purpose of development fees, to the following question, "What is the average vehicle trip length on development fee system improvements?"

A Vehicle Mile of Travel (VMT) is a measurement unit equal to one vehicle traveling one mile. In the aggregate, VMT is the product of daily traffic on a roadway segment (vehicle trips) multiplied by the length of that segment. A lane mile is a rectangular area of pavement, one lane wide and one mile long. The segment length in this study reflects the "consumption" or utilization of the roadway system and is calibrated to the current and planned arterial network of lane miles and a lane capacity standard of 9,700 vehicles per lane.

Figure 57 shows the calibration of existing development to Yuma's current arterial network. Knowing the current arterial lane miles (204.7) TischlerBise determined the weighted-average miles per trip on the current arterial network is 5.532 miles.

The methodology is as follows:

- With an existing inventory of 204.7 lane miles of arterials and an average daily lane capacity standard of 9,700 vehicles per lane, the arterial network can accommodate 1,985,151 vehicle miles of travel (i.e., 9,700 vehicles per day traveling the entire 204.7 lane miles).
- To derive the average utilization (expressed in miles per trip) of the existing system improvements, we divide vehicle miles of travel by the aggregate number of vehicle trips associated with development in Yuma. Existing development in Yuma currently generates an estimated 393,171 vehicle trips on an average day. Based on 1,985,151 vehicle miles of travel that can be accommodated on the existing arterial network, and 393,171 average day vehicle trips, the average utilization of the arterial network is approximately 5.049 miles per trip.
- However, to be consistent with the methodology used in the development fee calculations, TischlerBise further refined the average utilization through a series of iterations using spreadsheet software. This refinement is necessary because the calibration of average utilization includes the same adjustment factors used in the development fee calculations (i.e., residential commuting adjustment, commercial pass-by adjustment, and average trip length adjustment by type of land use as discussed below). With these additional refinements, TischlerBise determined the average utilization on the arterial network to be 5.532 miles per trip, as shown in Figure 57.

Figure 57: Yuma Travel Demand and Trip Length Calibration

Dev Type	ITE Code	Weekday VTE	Dev Unit	Trip Adj	Trip Length Wt Factor
Single Family	210	9.41	HU	56%	121%
Multi-Family	220	7.07	HU	56%	121%
All Other Types of Housing	240	5.38	HU	56%	121%
Commercial/Retail	820	42.70	KSF	33%	66%
Office/Institutional	710	11.03	KSF	50%	73%
Industrial/Flex	110	6.97	KSF	50%	73%

Avg Trip Length (miles)	5.532
Vehicle Capacity Per Lane	9,700

	Base	1	2	3	4	5	10	10-Year
	2018	2019	2020	2021	2022	2023	2028	Increase
Single Family	22,770	23,050	23,333	23,620	23,911	24,205	25,731	**2,961**
Multi-Family	8,105	8,204	8,305	8,407	8,511	8,615	9,159	**1,054**
All Other Types of Housing	7,719	7,814	7,910	8,007	8,105	8,205	8,722	**1,004**
Commercial/Retail KSF	12,486	12,686	12,889	13,095	13,305	13,518	14,636	**2,150**
Office/Institutional KSF	5,148	5,230	5,314	5,399	5,485	5,573	6,034	**886**
Industrial/flex KSF	3,878	3,940	4,003	4,067	4,132	4,198	4,544	**666**
Single Family Trips	119,988	121,465	122,957	124,468	126,001	127,549	135,592	**15,604**
Multi-Family Trips	32,087	32,482	32,881	33,286	33,695	34,109	36,260	**4,173**
All Other Types of Housing Trips	23,255	23,541	23,830	24,123	24,420	24,720	26,279	**3,024**
Commercial/Retail Trips	175,933	178,751	181,612	184,515	187,474	190,475	206,229	**30,296**
Office/Institutional Trips	28,393	28,846	29,309	29,778	30,252	30,737	33,280	**4,886**
Industrial/Flex Trips	13,514	13,730	13,950	14,173	14,399	14,629	15,835	**2,321**
Total Vehicle Trips	**393,171**	**398,815**	**404,539**	**410,342**	**416,242**	**422,221**	**453,476**	**60,305**
Vehicle Miles of Travel (VMT)	**1,985,202**	**2,012,636**	**2,040,434**	**2,068,605**	**2,097,231**	**2,126,223**	**2,277,549**	**292,346**
ARTERIAL LANE MILES	204.7	207.5	210.4	213.3	216.2	219.2	234.8	**30.1**
SIGNALIZED INTERSECTIONS	28.0	28.4	28.8	29.2	29.6	30.0	32.1	**4.1**
BIKE LANES (MILES)	32.8	33.2	33.7	34.2	34.6	35.1	37.6	**4.8**
							Ten-Year VMT Increase =>	**12.8%**

To maintain this level of service, Yuma needs to construct 30.1 lane miles over the next 10 years to serve growth. Development projections are multiplied by the input variables at the top of Figure 57 to yield average weekday travel demand on arterials in Yuma. Trip generation rates and trip adjustment factors convert projected development into average weekday vehicle trips, shown with light blue shading. For example, in 2018 the 22,770 single-family housing units produce 119,988 average weekday trips (22,770 single-family units X 9.41 average weekday vehicle trip ends X 56 percent trip adjustment). Similarly, office and institutional development in 2018 generates 28,393 average weekday vehicle trips (5,148 KSF X 11.03 average weekday vehicle trips per 1,000 square feet X 50 percent trip adjustment).

Although the travel demand model projects the need for 30.1 lane miles of arterials, Yuma plans to construct fewer lane miles during this period. Yuma's Capital Improvement Plan and subsequent analysis updating and refining projects from the plan identify **5.0 new lane miles needed through 2028**.

To ensure future development does not pay for a higher level of service than will be built and provided by Yuma, the travel demand factors are therefore calibrated to the amount of **planned arterial improvements**. This adjusts the input factors accordingly and is used to calculate the road improvement component of the impact fee. No adjustment is required for improved intersections or bike lanes as the current level of service will be maintained given the planned projects over the next ten years. Figure 58 provides the adjusted average utilization of 0.92 miles and adjusted vehicle miles of travel.

Figure 58: Yuma Revised Travel Demand and Trip Length Calibration

Dev Type	ITE Code	Weekday VTE	Dev Unit	Trip Adj	Trip Length Wt Factor
Single Family	210	9.41	HU	56%	121%
Multi-Family	220	7.07	HU	56%	121%
All Other Types of Housing	240	5.38	HU	56%	121%
Commercial/Retail	820	42.70	KSF	33%	66%
Office/Institutional	710	11.03	KSF	50%	73%
Industrial/Flex	110	6.97	KSF	50%	73%

Avg Trip Length (miles)	0.920
Vehicle Capacity Per Lane	9,700

	Base	1	2	3	4	5	10	10-Year
	2018	2019	2020	2021	2022	2023	2028	Increase
Single Family	22,770	23,050	23,333	23,620	23,911	24,205	25,731	**2,961**
Multi-Family	8,105	8,204	8,305	8,407	8,511	8,615	9,159	**1,054**
All Other Types of Housing	7,719	7,814	7,910	8,007	8,105	8,205	8,722	**1,004**
Commercial/Retail KSF	12,486	12,686	12,889	13,095	13,305	13,518	14,636	**2,150**
Office/Institutional KSF	5,148	5,230	5,314	5,399	5,485	5,573	6,034	**886**
Industrial/flex KSF	3,878	3,940	4,003	4,067	4,132	4,198	4,544	**666**
Single Family Trips	119,988	121,465	122,957	124,468	126,001	127,549	135,592	**15,604**
Multi-Family Trips	32,087	32,482	32,881	33,286	33,695	34,109	36,260	**4,173**
All Other Types of HousIng Trips	23,255	23,541	23,830	24,123	24,420	24,720	26,279	**3,024**
Commercial/Retail Trips	175,933	178,751	181,612	184,515	187,474	190,475	206,229	**30,296**
Office/Institutional Trips	28,393	28,846	29,309	29,778	30,252	30,737	33,280	**4,886**
Industrial/Flex Trips	13,514	13,730	13,950	14,173	14,399	14,629	15,835	**2,321**
Total Vehicle Trips	**393,171**	**398,815**	**404,539**	**410,342**	**416,242**	**422,221**	**453,476**	**60,305**
Vehicle Miles of Travel (VMT)	**330,149**	**334,712**	**339,335**	**344,020**	**348,780**	**353,602**	**378,768**	**48,619**
ARTERIAL LANE MILES	34.0	34.5	35.0	35.5	36.0	36.5	39.0	**5.0**
SIGNALIZED INTERSECTIONS	28.0	28.4	28.8	29.2	29.6	30.0	32.1	**4.1**
BIKE LANES (MILES)	32.8	33.3	33.7	34.2	34.7	35.1	37.6	**4.8**
							Ten-Year VMT Increase =>	**12.8%**

The calibrated level-of-service standard, based on five additional lane miles, is 1.03 lane miles per 10,000 vehicle miles of travel (34.0 lane miles / [330,149 VMT / 10,000 VMT]), 0.85 signalized intersections per 10,000 VMT, and 0.99 miles of bike lanes per 10,000 VMT. By Year 10, the level of service will be 1.03 lane miles per 10,000 vehicle miles of travel, 0.85 improved intersections per 10,000 VMT, and 0.99 miles of bike lanes per 10,000 VMT.

Projected Need

As shown in Figure 59, projected VMT drives the need for arterial improvements, improved intersections, and bike lanes. Over the next ten years, Yuma will need 30.1 additional lane miles of arterials to maintain the current level of service. Yuma staff, however, estimates the construction of five lane miles is likely during the study period at a cost of approximately $5.7 million (five lane miles X $1,137,946 per lane mile).

Additionally, new development will demand 4.1 signalized intersections at a cost of approximately $1.8 million (4.1 signalized intersections X $433,635 per intersection). Finally, new development will demand and additional 4.8 miles of bike lanes over the next ten years. The total cost for bike lanes is $1.0 million (4.8 miles X $211,875 per mile). In combination, Yuma anticipates capital costs of approximately $8.5 million for growth-related street infrastructure over the next ten years.

Figure 59: Growth-Related Need for Streets Infrastructure

Type of Infrastructure	Level of Service	Demand Unit	Average Cost
Arterials	1.03 Lane Miles	per 10,000 VMT	$1,137,946
Signalized Intersections	0.85 Intersections	per 10,000 VMT	$433,636
Bike Lanes	0.99 Miles	per 10,000 VMT	$211,875

Need for Streets Facilities					
Year		VMT	Arterials (Lane Miles)	Signalized Intersections	Bike Lanes (Miles)
Base	2018	330,149	34.0	28.0	32.8
Year 1	2019	334,712	34.5	28.4	33.3
Year 2	2020	339,335	35.0	28.8	33.7
Year 3	2021	344,020	35.5	29.2	34.2
Year 4	2022	348,780	36.0	29.6	34.7
Year 5	2023	353,602	36.5	30.0	35.1
Year 6	2024	358,499	37.0	30.4	35.6
Year 7	2025	363,462	37.5	30.8	36.1
Year 8	2026	368,487	38.0	31.3	36.6
Year 9	2027	373,593	38.5	31.7	37.1
Year 10	2028	378,768	39.0	32.1	37.6
Ten-Yr Increase		48,619	5.0	4.1	4.8

Growth-Related Expenditures	$5,689,732	$1,788,037	$1,023,402

Total Growth-Related Expenditure on Streets Facilities	$8,501,171

STREET FACILITIES DEVELOPMENT FEES

Revenue Credit

A revenue credit is not necessary for the Street Facilities development fees.

Street Facilities Development Fees

Infrastructure standards and cost factors for Street Facilities development fees are summarized in the upper portion of Figure 60. Nonresidential development fees are stated per square foot of floor area or, for hotels, per room. The proposed Street fee per square foot of commercial/retail development is $1.71.

The input variables discussed above yield the proposed Development Fees shown in the lower section of Figure 53. For example, the Street Facilities development fees for a single-family house is $1,179 ($200.91 per VMT x 0.92 X 9.41 X 56 percent x 121 percent).

Figure 60: Schedule of Streets Development Fees

Fee Component	Cost per VMT
Arterials	$117.03
Signalized Intersections	$36.78
Bike Lanes	$21.05
Bridges	$24.54
Development Fee Study	$1.52
Total	$200.91

Average Miles per Trip	0.920

Residential Development	Development Fees per Unit					
Development Type	Avg Wkdy Veh Trip Ends[1]	Trip Rate Adjustment	Trip Length Adjustment	Proposed Fees	Current Fees	Increase / Decrease
Single-Family Unit	9.41	56%	121%	$1,179	$696	$483
Multi-Family Unit	7.07	56%	121%	$886	$479	$407
All Other Types	5.38	56%	121%	$674	$363	$311

Nonresidential Development	Development Fees per Square Foot					
Development Type	Avg Wkdy Veh Trip Ends[1]	Trip Rate Adjustment	Trip Length Adjustment	Proposed Fees	Current Fees	Increase / Decrease
Commercial/Retail	42.70	33%	66%	$1.71	$0.80	$0.91
Office/Institutional	11.03	50%	73%	$0.74	$0.44	$0.30
Industrial/Flex	6.97	50%	73%	$0.47	$0.28	$0.19
Hotel (per room)	5.63	50%	73%	$380	$223	$157

1. See Land Use Assumptions

Forecast of Revenues

Appendix A contains the forecast of revenues required by Arizona's enabling legislation (ARS 9-463.05(E)(7)).

Projected Street Facilities Development Fee Revenue

Projected fee revenue shown in Figure 61 is based on the development projections in the *Land Use Assumptions* and the updated Street Facilities development fees. If development occurs at a faster rate than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs at a slower rate than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate. Anticipated development fee revenue of approximately $9.71 million over the next ten years is approximately equal to the projected growth-related cost of street facilities ($9.73 million). Yuma will need to fund existing development's share with other sources of revenue.

Figure 61: Projected Streets Development Fee Revenue

Fee Component	Growth Cost	Existing Cost	Total Cost
Arterials	$5,689,732	$0	$5,689,732
Signalized Intersections	$1,788,037	$0	$1,788,037
Bike Lanes	$1,023,402	$0	$1,023,402
Bridges	$1,193,060	$676,940	$1,870,000
Development Fee Study	$35,600	$0	$35,600
Total	$9,729,831	$676,940	$10,406,771

		Residential (Average) $1,016 per unit	Commercial/ Retail $1.71 per SF	Office/ Institutional $0.74 per SF	Industrial/ Flex $0.47 per SF
Year		Households	KSF	KSF	KSF
Base	2018	38,593	12,486	5,148	3,878
Year 1	2019	39,068	12,686	5,230	3,940
Year 2	2020	39,548	12,889	5,314	4,003
Year 3	2021	40,034	13,095	5,399	4,067
Year 4	2022	40,527	13,305	5,485	4,132
Year 5	2023	41,025	13,518	5,573	4,198
Year 6	2024	41,530	13,735	5,662	4,265
Year 7	2025	42,041	13,955	5,753	4,333
Year 8	2026	42,558	14,178	5,845	4,402
Year 9	2027	43,082	14,405	5,939	4,473
Year 10	2028	43,612	14,636	6,034	4,544
Ten-Year Increase		5,019	2,150	886	666
Projected Revenue		$5,081,776	$3,661,960	$653,045	$311,789

Projected Fee Revenue	$9,708,570
Total Expenditures	$10,406,771
Existing Development Share	$698,201

APPENDIX A: REVENUE FORECAST

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 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	Assessed Against	Proportionate Share	Demand Unit	2018	2023	Change	Cost per Demand Unit
Fire	$13,350	Residential	45%	Peak Population	115,208	121,848	6,640	$0.90
		Nonresidential	55%	Jobs	51,027	55,242	4,215	$1.74
General Government	$8,900	Residential	73%	Peak Population	115,208	121,848	6,640	$0.98
		Nonresidential	27%	Jobs	51,027	55,242	4,215	$0.57
Parks and Recreation	$17,800	Residential	100%	Peak Population	115,208	121,848	6,640	$2.68
Police	$13,350	Residential	61%	Peak Population	115,208	121,848	6,640	$1.23
		Nonresidential	39%	Vehicle Trips	217,841	235,842	18,001	$0.29
Street	$35,600	Residential Nonresidential	100%	VMT	330,149	353,602	23,452	$1.52
Total	$89,000							

APPENDIX C: IMPLEMENTATION AND ADMINISTRATION

As specified in ARS 9-463.05, there are certain accounting requirements that must be met by the City:

> *Monies received from development fees assessed pursuant to this section shall be placed in a separate fund and accounted for separately and may only be used for the purposes authorized by this section. Monies received from a development fee identified in an infrastructure improvements plan adopted or updated pursuant to subsection D of this section shall be used to provide the same category of necessary public services or facility expansions for which the development fee was assessed and for the benefit of the same service area, as defined in the infrastructure improvements plan, in which the development fee was assessed. Interest earned on monies in the separate fund shall be credited to the fund.*

All costs in the development fee calculations are given in current dollars with no assumed inflation rate over time. If cost estimates change significantly the City should update the fee calculations.

RESIDENTIAL DEVELOPMENT

As discussed below, residential development categories are based on data from the U.S. Census Bureau, American Community Survey. Yuma will collect development fees from all new residential units, including mobile homes and Recreational Vehicles (RV). For a parcel intended for occupancy by multiple mobile homes and/or RVs, the landowner will pay a development fee for each site than can accommodate a residential unit. One-time development fees are determined by site capacity (i.e. number of residential units) and will not be imposed on replacement units.

Single-Family:

1. Single-family detached is a 1-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 1-unit structure that has one or more walls extending from ground to roof separating it from adjoining structures. In row houses (sometimes called townhouses), double houses, or houses attached to nonresidential structures, each house is a separate, attached structure if the dividing or common wall goes from ground to roof.

Multi-Family:

1. 2+ units (duplexes and apartments) are units in structures containing two or more housing units, further categorized as units in structures with “2, 3 or 4, 5 to 9, 10 to 19, 20 to 49, and 50 or more apartments.”

All Other Types:

1. Mobile home includes both occupied and vacant mobile homes, to which no permanent rooms have been added, are counted in this category. 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.

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

NONRESIDENTIAL DEVELOPMENT

The proposed general nonresidential development categories (defined below) can be used for all new construction within Yuma. 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 / Retail: Establishments primarily selling merchandise, eating/drinking places, and entertainment uses. By way of example, *Commercial / Retail* includes shopping centers, supermarkets, pharmacies, restaurants, bars, nightclubs, automobile dealerships, and movie theaters.

Office / Institutional: Establishments providing management, administrative, professional, or business services; personal and health care services; lodging facilities; and public and quasi-public buildings providing educational, social assistance, or religious services. By way of example, *Office / Institutional* includes banks, business offices; hotels and motels; assisted living facilities, nursing homes, hospitals and medical offices; veterinarian clinics; and institutional facilities such as schools, universities, churches, daycare facilities, government buildings, and prisons.

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.