



# Land Use Assumptions

*Prepared for:*

*City of Coolidge, Arizona*

*February 26, 2014*

**TischlerBise**  
Fiscal, Economic & Planning Consultants

4701 Sangamore Road, Suite S240  
Bethesda, MD  
301.320.6900  
[www.tischlerbise.com](http://www.tischlerbise.com)

**TABLE OF CONTENTS**

**INTRODUCTION..... 3**

**SERVICE AREA..... 3**  
 Figure 1: Map of City of Coolidge Service Area ..... 3

**SUMMARY OF GROWTH INDICATORS..... 3**  
 Figure 2: Development Projections and Growth Rates..... 4

**RESIDENTIAL DEVELOPMENT..... 5**

**CURRENT ESTIMATES OF RESIDENTIAL DEVELOPMENT ..... 5**  
 Figure 3: Person per Housing Unit by Type of Housing Unit ..... 6

**RECENT RESIDENTIAL CONSTRUCTION ..... 7**  
 Figure 4: Housing Units by Decade..... 7

**CURRENT ESTIMATE OF HOUSING UNITS ..... 8**  
 Figure 5: Residential/ New Housing Permits..... 8  
 Figure 6: Current Estimate of Housing Units..... 8  
 Figure 7: Current Estimate of Population..... 8

**RESIDENTIAL DEVELOPMENT FORECAST..... 9**  
 Figure 8: Projected Housing Units and Population..... 9

**NON-RESIDENTIAL DEVELOPMENT ..... 10**

**JOBS BY TYPE OF NONRESIDENTIAL DEVELOPMENT ..... 10**  
 Figure 9: Jobs and Floor Area Estimate..... 10  
 Figure 10: Employee and Building Area Ratios..... 11

**NONRESIDENTIAL DEVELOPMENT FORECAST ..... 12**  
 Figure 11: Projected Jobs and Nonresidential Floor Area ..... 12

**AVERAGE DAILY VEHICLE TRIPS..... 13**  
 Figure 12: Average Weekday Vehicle Trip Ends by Housing Type in City of Coolidge ..... 13  
 Figure 13: Adjustment for Journey-to Work Commuting ..... 14  
 Figure 14: Average Daily Trips..... 15

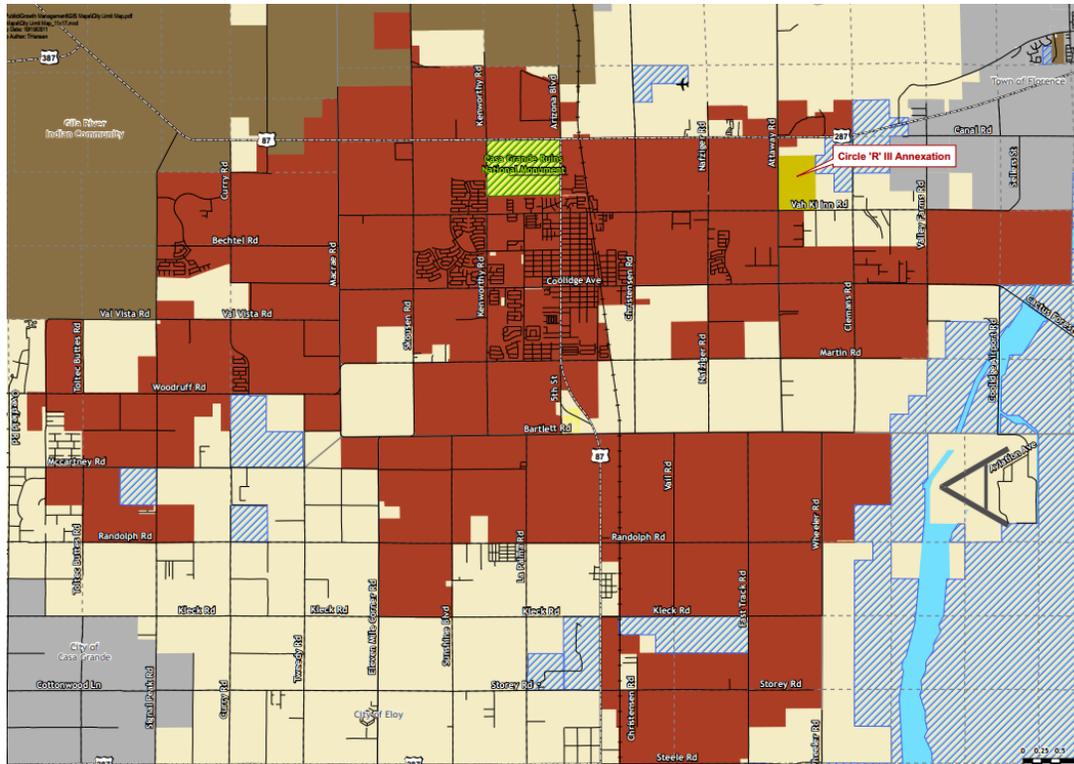
**DETAILED DEVELOPMENT PROJECTIONS..... 16**  
 Figure 15: Annual Demographic Data ..... 16

# INTRODUCTION

## SERVICE AREA

The estimates and projections of residential and nonresidential development in this *Land Use Assumptions* document are for areas within the boundaries of the City of Coolidge. The map below illustrates the area within the City’s boundaries, shown in maroon.

Figure 1: Map of City of Coolidge Service Area



## SUMMARY OF GROWTH INDICATORS

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

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

TischlerBise has prepared this *Land Use Assumptions* document which details current demographic **estimates** and future development **projections** for both residential and nonresidential development that will be used in the infrastructure improvement plan (IIP) and calculation of the development fees. The development projections are used for calculating the level of service to be provided to future development by planned capital projects or existing infrastructure that was oversized in anticipation of new development. The development projections are also used in forecasting the amount and cost of infrastructure required by new development that will be documented in the cash flow analysis.

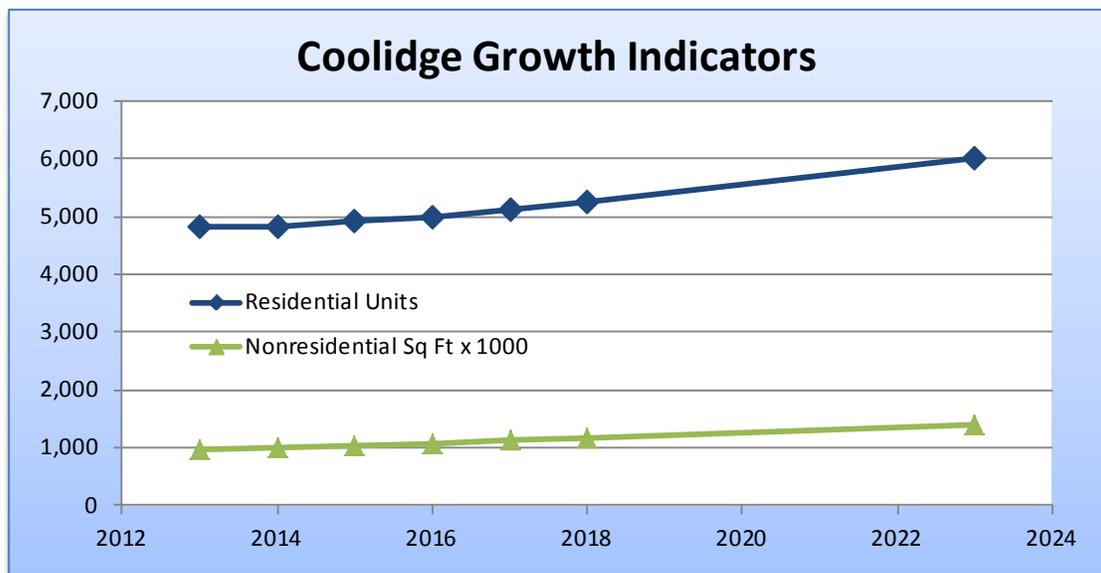
Development fee methodologies are designed to reduce sensitivity to accurate development projections in the determination of the proportionate-share fee amounts. If actual development is slower than projected, development fee revenues will also decline, but so will the need for growth-related infrastructure. In contrast, if development is faster than anticipated, the City will receive an increase in development fee revenue, but will also need to accelerate the capital improvements program to keep pace with development.

Development projections and growth rates are summarized in Figure 2. Coolidge specific base data for the demographic analysis and development projections include 2010 Census calculations of population and housing units and American Community Survey tables. The projected increase in housing units is based on past average residential building permits in Coolidge and estimations from City staff. Projected housing units were converted to population using the 2010 average of 2.47 year-round residents per housing unit. The Arizona Revised Statutes (ARS) 9-463.05 requires that “a municipality shall update the land use assumptions and infrastructure improvements plan at least every five years.” Therefore, the development fee study did not vary the persons per housing unit ratio over time, nor assume any change to the residential vacancy rate in Coolidge. For housing units, the development fee study assumes a compound annual growth rate of 2.3% for the first ten years.

The projected increase nonresidential floor area is based on estimations made by City of Coolidge Growth Management staff. Projected jobs within Coolidge were converted to nonresidential floor area using average square-feet-per-employee multipliers provided by the Institute of Transportation Engineers. For nonresidential development, the development fee study assumes a compound annual growth rate of 3.9%.

**Figure 2: Development Projections and Growth Rates**

	Year							2013 to 2023 Average Annual	
	2013	2014	2015	2016	2017	2018	2023	Increase	Compound Growth Rate
Residential Units	4,814	4,839	4,909	5,004	5,134	5,269	6,014	120	2.3%
Nonresidential Sq Ft x 1000	962	1,001	1,039	1,080	1,122	1,166	1,412	45	3.9%



## RESIDENTIAL DEVELOPMENT

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

### CURRENT ESTIMATES OF RESIDENTIAL DEVELOPMENT

The 2010 census did not obtain detailed information using a “long-form” questionnaire. Instead, the U.S. Census Bureau has switched to a continuous monthly mailing of surveys, known as the American Community Survey (ACS) which is limited by sample-size constraints in areas with relatively few residents. For cities like Coolidge, data on detached housing units are now combined with attached single units (commonly known as townhouses). One way to address this limitation is to derive fees by housing unit size, as discussed further below, is to address this ACS data limitation. Because townhouses and mobile homes generally have less floor area than detached units, fees by housing would ensure proportionality and facilitate construction of affordable units.

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

Census data indicates that City had 4,796 housing units in 2010. As shown in Figure 3, in 2010, dwellings with a single unit per structure (detached, attached, and mobile homes) averaged 2.55 persons per housing unit. Dwellings in structures with multiple units (including structures with two or more units, boats, RVs, and vans) averaged 1.49 year-round residents per unit.

**Figure 3: Persons per Housing Unit by Type of Housing Unit**

**2007-2011 American Community Survey**

Type	Persons	Households	Housing Units
Single Unit <sup>1</sup>	10,596	3,895	4,820
2+ Units <sup>2</sup>	556	263	428
<b>TOTAL</b>	<b>11,152</b>	<b>4,158</b>	<b>5,248</b>

1. Single Unit includes detached, attached, and mobile homes.

2. 2+ Units includes boats, vans and RVs.

Source: Tables B25024, B25032, and B25033.

2007-2011 American Community Survey, U.S. Census Bureau.

**2010 Census**

Type	Persons	Households	Housing Units	Persons per Housing Unit
Single Unit <sup>1</sup>	11,235	3,697	4,405	2.55
2+ Units <sup>2</sup>	590	250	391	1.51
Subtotal	11,825	3,947	4,796	
Group Quarters	0			
<b>TOTAL</b>	<b>11,825</b>	<b>3,947</b>	<b>4,796</b>	<b>2.47</b>

1. Single Unit includes detached, attached, and mobile homes.

2. 2+ Units includes boats, vans and RVs.

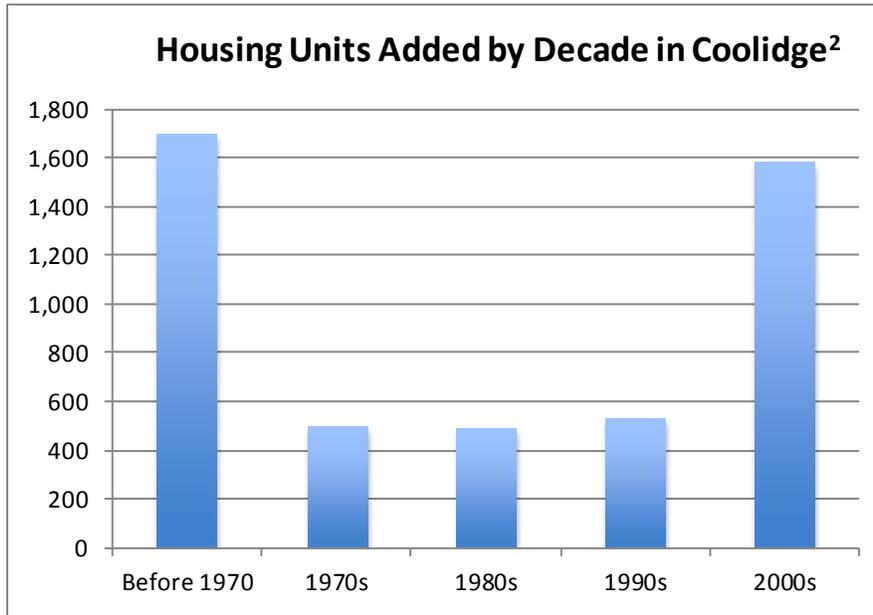
Source: Totals from Summary File 1, U.S. Census.

**RECENT RESIDENTIAL CONSTRUCTION**

From 2000-2010, Coolidge has increased by an average of 158 housing units per year. The chart at the bottom of Figure 4 indicates the estimated number of housing units added by decade in Coolidge. Housing units per decade saw a large increase during the 2000’s.

**Figure 4: Housing Units by Decade**

2010 Population <sup>1</sup>	11,825	From 2000 to 2010, Coolidge added an average of 158 housing units per year.
2010 Housing Units <sup>1</sup>	4,796	
Total Housing Units in 2000 <sup>1</sup>	3,212	
New Housing Units	1,584	



1. Census SF1.

2. Source for 1990s and earlier is Table B25034, American Community Survey (2007-2011) scaled to equal total housing units in 2000.

**CURRENT ESTIMATE OF HOUSING UNITS**

The current estimate of housing units in Coolidge is determined below. First, Figure 5 shows new residential permits from 2006 to present provided by the City of Coolidge. As shown below, Coolidge saw a large number of permits from 2006 to 2008, but then a sharp decrease. Average units from 2006 to 2012 is shown to the far right. The average does not include 2013 permits because the year has not been completed.

**Figure 5: Residential New Housing Permits**

	2006	2007	2008	2009	2010	2011	2012	2013 (to date)	Total	Average 2006-2012
Single Units	625	212	100	1	4	6	5	3	956	140

Source: Coolidge Permitting Office.

Based on 2010 Census data and the permits listed above, Figure 6 displays the current estimate of housing units in Coolidge. 2010 total units are from the U.S. Census, and the division for 2010 between single units and units in structures with multiple units is found from the 2007-2011 American Community Survey. 2011 to 2013 units show 2010 totals plus the building permits displayed in Figure 5. The estimate below includes the 3 single unit permits granted in 2013.

**Figure 6: Current Estimate of Housing Units**

	2010	2011	2012	2013 (to date)
<b>Total<sup>1</sup></b>	<b>4,796</b>	<b>4,800</b>	<b>4,806</b>	<b>4,814</b>
Single Unit <sup>2</sup>	4,405	4,409	4,415	4,423
2+ Units <sup>2</sup>	391	391	391	391
<b>Annual Increase</b>		<b>4</b>	<b>6</b>	<b>8</b>

1. 2010 total units from 2010 U.S. Census, SF1.

2. 2010 division between single units and 2+ units from 2007-2011 American Community Survey, table B25024.

Next, the current estimate of population in Coolidge is found. The 2012 population is 12,039, which was determined by the Office of Employment & Population Statistics within the Arizona Department of Administration. Then, the new housing permits in 2012 and 2013, of which there were 8 single units, were converted to population using the persons per housing unit factor determined in Figure 3. These units equate to 20 new persons, which results in a 2013 population of 12,059 persons.

**Figure 7: Current Estimate of Population**

Persons per Single Unit (a)	Increase in Single Units (b)	Increase 2012 - 2013 (a x b)	2012 Population <sup>1</sup>	2013 Population
2.55	8	20	12,039	12,059

1. Office of Employment & Population Statistics, AZ Dept of Administration (2012). 2012 Population Estimate for City of Coolidge.

**RESIDENTIAL DEVELOPMENT FORECAST**

Figure 8 shows the current estimate of housing units in the City of Coolidge as well as projected units to 2033. Population is displayed below housing unit projections. The increase in units from 2013 to 2033 is projected to average 140 units per year, to align with the seven year average shown in Figure 5. Additionally, Coolidge expects slow growth from 2013 to 2018, due to the recession and the recent lack of permits. Following 2018, an increase in the growth rate of residential development is expected by Coolidge Growth Management staff due to planned economic activity in the region and the approval of many lots in the City. To reflect this, the annual increase in housing units grows at a higher rate each year from 2013 to 2033. Also, it is expected that there will be approximately 1,200 units in the first 10 years.

Projected population is determined by multiplying the 2010 estimate of persons per housing unit (2.47) by the estimated number of housing units.

**Figure 8: Projected Housing Units and Population**

	2013	2014	2015	2016	2017	2018	2023	2028	2033
	Base	1	2	3	4	5	10	15	20
<b>Total Housing Units<sup>1</sup></b>	<b>4,814</b>	<b>4,839</b>	<b>4,909</b>	<b>5,004</b>	<b>5,134</b>	<b>5,269</b>	<b>6,014</b>	<b>6,799</b>	<b>7,619</b>
Single Unit (91.8%) <sup>2</sup>	4,423	4,444	4,508	4,596	4,715	4,839	5,523	6,244	6,997
2+ Units (8.2%) <sup>2</sup>	391	395	401	408	419	430	491	555	622
<b>Annual Housing Unit Increase</b>		<b>25</b>	<b>70</b>	<b>95</b>	<b>130</b>	<b>135</b>	<b>155</b>	<b>160</b>	<b>165</b>
Persons per Housing Unit <sup>3</sup>	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47
Population <sup>4</sup>	12,059	12,121	12,293	12,527	12,848	13,181	15,018	16,953	18,975
<b>Annual Population Increase</b>		<b>62</b>	<b>173</b>	<b>234</b>	<b>321</b>	<b>333</b>	<b>382</b>	<b>394</b>	<b>407</b>

1. Assumes an increase of 1,200 units from 2013 to 2033 and an average of 140 units per year from 2013 to 2033.
2. Split between single units and 2+ units found in 2007-2011 American Community Survey, table B25024.
3. 2010 Census, SF 1.
4. Based on housing units multiplied by persons per housing unit.

## NON-RESIDENTIAL DEVELOPMENT

### JOBS BY TYPE OF NONRESIDENTIAL DEVELOPMENT

Figure 9 indicates the City's 2011 job estimate and nonresidential floor area, estimated using square feet per employee multipliers obtained from the Institute of Transportation Engineers (ITE 2012). The prototype for Commercial is an average-size shopping center. For Office/ Institutional, the development prototype is an average-sized office. The prototype development for Industrial jobs is light industrial. General land use types are based on two-digit industry sectors, with the percentage distribution of jobs by type of development from U.S. Census Bureau's OnTheMap web application.

As shown below, in 2011 there were 2,287 jobs in Coolidge and 893,101 square feet of nonresidential floor area.

**Figure 9: Jobs and Floor Area Estimate**

	2011 Jobs <sup>1</sup>	% of Total	Sq Ft per Job <sup>2</sup>	Floor Area
Commercial <sup>3</sup>	774	34%	500	387,000
Office/ Institutional <sup>4</sup>	1,129	49%	301	339,829
Industrial	384	17%	433	166,272
<b>Total</b>	<b>2,287</b>	<b>100%</b>		<b>893,101</b>

1. OnTheMap web application, U.S. Census Bureau.
2. Trip Generation, Institute of Transportation Engineers, 2012.
3. Retail, Food and Accommodation Services.
4. Major sectors are Health Care, Education, Public Administration, Administration & Support (office jobs), and Professional/Scientific/Technical Services.

In Figure 10, gray shading indicates four nonresidential development prototypes used by TischlerBise to estimate floor area in Coolidge.

**Figure 10: Employee and Building Area Ratios**

ITE Code	Land Use / Size	Demand Unit	Wkdy Trip Ends Per Dmd Unit*	Wkdy Trip Ends Per Employee*	Emp Per Dmd Unit**	Sq Ft Per Emp
<b>Commercial / Shopping Center</b>						
820	Shopping Center (avg size)	1,000 Sq Ft	42.70	na	2.00	500
<b>General Office</b>						
710	General Office (avg size)	1,000 Sq Ft	11.03	3.32	3.32	301
<b>Other Nonresidential</b>						
770	Business Park***	1,000 Sq Ft	12.44	4.04	3.08	325
760	Research & Dev Center	1,000 Sq Ft	8.11	2.77	2.93	342
610	Hospital	1,000 Sq Ft	13.22	4.50	2.94	340
565	Day Care	student	4.38	26.73	0.16	na
550	University/College	student	1.71	8.96	0.19	na
540	Community College	student	1.23	15.55	0.08	na
530	High School	1,000 Sq Ft	12.89	19.74	0.65	1,531
520	Elementary School	1,000 Sq Ft	15.43	15.71	0.98	1,018
254	Assisted Living	bed	2.66	3.93	0.68	na
620	Nursing Home	1,000 Sq Ft	7.60	3.26	2.33	429
320	Motel	room	5.63	12.81	0.44	na
110	Light Industrial	1,000 Sq Ft	6.97	3.02	2.31	433
130	Industrial Park	1,000 Sq Ft	6.83	3.34	2.04	489
140	Manufacturing	1,000 Sq Ft	3.82	2.13	1.79	558
150	Warehousing	1,000 Sq Ft	3.56	3.89	0.92	1,093

\* Trip Generation, Institute of Transportation Engineers, 9th Edition (2012).

\*\* Employees per demand unit calculated from trip rates, except for Shopping Center data, which are derived from Development Handbook and Dollars and Cents of Shopping Centers, published by the Urban Land Institute.

\*\*\* According to ITE, a Business Park is a group of flex-type buildings served by a common roadway system. The tenant space includes a variety of uses with an average mix of 20-30% office/commercial and 70-80% industrial/warehousing.

### NONRESIDENTIAL DEVELOPMENT FORECAST

Figure 11 displays projected jobs and nonresidential floor area in Coolidge from 2011 to 2033. The 2011 estimates are based on Figure 9. Projections were made using an exponential growth rate of 3.9%, which was determined by City of Coolidge Growth Management staff to align with a projected ten-year increase of 450,000 square feet of nonresidential floor from 2013 to 2023.

**Figure 11: Projected Jobs and Nonresidential Floor Area**

Growth Rate
3.9%

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2028	2033
			Base	1	2	3	4	5	6	7	8	9	10	15	20
City of Coolidge	2,287	2,376	2,469	2,565	2,665	2,769	2,877	2,989	3,106	3,227	3,353	3,484	3,620	4,383	5,307
<b>Annual Job Increase</b>			<b>93</b>	<b>96</b>	<b>100</b>	<b>104</b>	<b>108</b>	<b>112</b>	<b>117</b>	<b>121</b>	<b>126</b>	<b>131</b>	<b>136</b>	<b>165</b>	<b>199</b>

Source: 2011 jobs from OnTheMap, U.S. Census Bureau web application. An exponential growth rate of 3.9% is used for years 2012 to 2033, which is based on City of Coolidge Projections.

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2028	2033
<b>Nonres Sq Ft in 1000's (KSF)</b>			Base	1	2	3	4	5	6	7	8	9	10	15	20
Commercial	387	402	417	434	450	468	486	505	525	546	567	589	612	741	897
Office/ Institutional	340	353	366	381	396	411	427	444	461	479	498	517	537	651	788
Industrial/ Flex	166	172	179	186	193	201	209	217	225	234	243	253	263	318	385
<b>Total</b>	<b>893</b>	<b>927</b>	<b>962</b>	<b>1,001</b>	<b>1,039</b>	<b>1,080</b>	<b>1,122</b>	<b>1,166</b>	<b>1,211</b>	<b>1,259</b>	<b>1,308</b>	<b>1,359</b>	<b>1,412</b>	<b>1,710</b>	<b>2,070</b>
<b>Annual Nonres Floor Area Increase (KSF)</b>			<b>35</b>	<b>39</b>	<b>38</b>	<b>41</b>	<b>42</b>	<b>44</b>	<b>45</b>	<b>48</b>	<b>49</b>	<b>51</b>	<b>53</b>	<b>65</b>	<b>77</b>

Source: Jobs shown above were converted to nonresidential square footage using ITE multipliers. (See figures 9 and 10.) Mix of job types from OnTheMap, U.S. Census Bureau web application.

## AVERAGE DAILY VEHICLE TRIPS

### Residential Vehicle Trip Rates

As an alternative to simply using the national average trip generation rate for residential development, the Institute of Transportation Engineers (ITE) publishes regression curve formulas that may be used to derive custom trip generation rates using local demographic data. Key independent variables needed for the analysis (i.e., vehicles available, housing units, households, and persons) are available from the U.S. Census Bureau American Community Survey (ACS) 2010 data for the City of Coolidge. This data was used to derive custom average weekday vehicle trip ends by type of housing, as shown below. A vehicle trip end represents a vehicle either entering or exiting development, as if a traffic counter were placed across a driveway.

**Figure 12: Average Weekday Vehicle Trip Ends by Housing Type in City of Coolidge**

	Vehicles Available <sup>1</sup>	Households <sup>2</sup>			Vehicles per Household by Tenure
		Single Unit	2+ Units	Total	
Owner-occupied	4,973	2,662	46	2,708	1.84
Renter-occupied	1,964	1,233	280	1,513	1.30
TOTAL	6,937	3,895	326	4,221	1.64
Housing Units (6) =>		4,757	491	5,248	

Units per Structure	Persons <sup>3</sup>	Trip Ends <sup>4</sup>	Vehicles by Type of Housing	Trip Ends <sup>5</sup>	Average Trip Ends	Trip Ends per Housing Unit
Single Units	10,596	27,422	6,489	37,507	32,464	6.82
2+ Units	668	2,253	448	2,058	2,156	4.39
<b>TOTAL</b>	<b>11,264</b>	<b>29,675</b>	<b>6,937</b>	<b>39,565</b>	<b>34,620</b>	<b>6.60</b>

1. Vehicles available by tenure from Table B25046, American Community Survey, 2007-2011.
2. Households by tenure and units in structure from Table B25032, American Community Survey, 2007-2011.
3. Persons by units in structure from Table B25033, American Community Survey, 2007-2011.
4. Vehicle trips ends based on persons using formulas from Trip Generation (ITE 2008). For single unit housing (ITE 210), the fitted curve equation is  $EXP(0.91 * LN(\text{persons}) + 1.52)$ . To approximate the average population of the ITE studies, persons were divided by 19 and the equation result multiplied by 19. For 2+ unit housing (ITE 220), the fitted curve equation is  $(3.47 * \text{persons}) - 64.48$ .
5. Vehicle trip ends based on vehicles available using formulas from Trip Generation (ITE 2008). For single unit housing (ITE 210), the fitted curve equation is  $EXP(0.99 * LN(\text{vehicles}) + 1.81)$ . To approximate the average number of vehicles in the ITE studies, vehicles available were divided by 25 and the equation result multiplied by 25. For 2+ unit housing (ITE 220), the fitted curve equation is  $(3.94 * \text{vehicles}) + 293.58$ .
6. Housing units from Table B25024, American Community Survey, 2007-2011.

### Nonresidential Vehicle Trip Rates

Vehicle trips rates for nonresidential development are from the reference book, *Trip Generation* published by the Institute of Transportation Engineers (ITE) in 2012.

### Trip Rate Adjustments

Trip generation rates are adjusted to avoid double counting each trip at both the origin and destination points. Therefore, the basic trip adjustment factor is 50 percent. As discussed below, additional

adjustments are made to ensure the fees are proportionate to the infrastructure demand for particular types of development.

**Adjustment for Journey-To-Work Commuting**

Residential development in the City has a larger trip adjustment factor of 63 percent to account for commuters leaving Coolidge for work. According to the National Household Travel Survey, home-based work trips are typically 31 percent of “production” trips, in other words, out-bound trips (which are 50 percent of all trip ends). Also, data from the US Census Bureau indicates that 84 percent of Coolidge’s workers travel outside the City for work. In combination, these factors (0.31 x 0.50 x 0.84 = 0.13) account for 13 percent of additional production trips. The total adjustment factor for residential includes attraction trips (50 percent of trip ends) plus the journey-to-work commuting adjustment (13 percent of production trips) for a total of 63 percent.

**Figure 13: Adjustment for Journey-to Work Commuting**

<b>Trip Adjustment Factor for Commuters</b>	
Employed Coolidge Residents (2011)	4,251
Coolidge Residents Working in City (2011)	677
Coolidge Residents Commuting Outside City for Work	3,574
<b>Percent Commuting out of the City</b>	<b>84%</b>
Additional Production Trips	13%
<b>Residential Trip Adjustment Factor</b>	<b>63%</b>

Source: U.S. Census, OnTheMap Application (version 6.1)  
 Longitudinal-Employer Household Dynamics (LEHD) Program; ITE

According to the National Household Travel Survey (2009), home-based work trips are typically 31 percent of “production” trips, in other words, out-bound trips (which are 50 percent of all trip ends). Also, Census Bureau's web application "OnTheMap" indicates that 84 percent of Coolidge's workers travel outside the City for work. In combination, these factors (0.31 x 0.50 x 0.84 = 0.13) account for 13 percent of additional production trips. The total adjustment factor for residential includes attraction trips (50% of trip ends) plus the journey-to-work commuting adjustment (13% of production trips) for a total of 63 percent.

**Adjustment for Pass-By Trips**

The basic trip adjustment factor of 50 percent is applied to the Industrial, Office and Institutional categories. The Retail category has a trip factor of less than 50 percent because this type of development attracts vehicles as they pass-by on arterial and collector roads. For an average size shopping center, the ITE manual indicates that an average size shopping center has a pass-by rate of 34 percent.

**Estimated Vehicle Trips in Coolidge**

As shown in Figure 14, there is an average of 28,603 vehicle trips generated by existing development in the City of Coolidge on an average weekday. As the table indicates, residential development is estimated

to generate 20,085 vehicle trips compared to 8,518 vehicle trips generated by nonresidential development. An example of the calculation is as follows for detached units: 4,423 single units x 6.82 vehicle trips per day per unit x 63% adjustment factor = 19,003 total vehicle trips per day from single units in the City.

**Figure 14: Average Daily Trips**

<b>2013 Residential Vehicle Trips Average Weekday</b>			
<b>Residential Units</b>		Assumptions	
Single Unit		4,423	
2+ Units		391	
<b>Average Weekday Vehicle Trip Ends per Unit</b>		<i>Trip Rate</i>	<i>Adj. Factor</i>
Single Unit		6.82	63%
2+ Units		4.39	63%
<b>Residential Vehicle Trip Ends Average Weekday</b>			
Single Unit		19,003	
2+ Units		1,082	% of total
<b>Total Residential Trips</b>		<b>20,085</b>	<b>70%</b>
<b>2013 Nonresidential Vehicle Trips Average Weekday</b>			
<b>Nonresidential Gross Floor Area (1,000 sq. ft.)</b>		Assumptions	
Commercial		417	
Office/ Institutional		366	
Industrial/ Flex		179	
<b>Average Weekday Vehicle Trips Ends per 1,000 Sq. Ft. <sup>2</sup></b>		<i>Trip Rate</i>	<i>Adj. Factor</i>
Commercial		42.70	33%
Office/ Institutional		11.03	50%
Industrial/ Flex		6.97	50%
<b>Nonresidential Vehicle Trips Average Weekday</b>			
Commercial		5,876	
Office/ Institutional		2,018	
Industrial/ Flex		624	% of total
<b>Total Nonresidential Trips</b>		<b>8,518</b>	<b>30%</b>
<b>TOTAL TRIPS</b>		<b>28,603</b>	

## DETAILED DEVELOPMENT PROJECTIONS

Demographic data shown in Figure 15 provides key inputs for updating development fees in the City of Coolidge. Cumulative data are shown at the top and projected annual increases by type of development are shown at the bottom of the table.

**Figure 15: Annual Demographic Data**

	2013	2014	2015	2016	2017	2018	2023	2028	2033	20-Year Increase
	Base Yr	1	2	3	4	5	10	15	20	
Population	12,059	12,121	12,293	12,527	12,848	13,181	15,018	16,953	18,975	6,916
Jobs	2,469	2,565	2,665	2,769	2,877	2,989	3,620	4,383	5,307	2,838
<u>Housing Units</u>										
Single Unit	4,423	4,444	4,508	4,596	4,715	4,839	5,523	6,244	6,997	2,574
2+ Units	391	395	401	408	419	430	491	555	622	231
<b>Total Housing Units</b>	<b>4,814</b>	<b>4,839</b>	<b>4,909</b>	<b>5,004</b>	<b>5,134</b>	<b>5,269</b>	<b>6,014</b>	<b>6,799</b>	<b>7,619</b>	<b>2,805</b>
Jobs to Housing Ratio	0.51	0.53	0.54	0.55	0.56	0.57	0.60	0.64	0.70	
Persons per Hsg Unit	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	
<u>Nonres Sq Ft in thousands (KSF)</u>										
Commercial	417	434	450	468	486	505	612	741	897	480
Office/ Institutional	366	381	396	411	427	444	537	651	788	422
Industrial/ Flex	179	186	193	201	209	217	263	318	385	206
<b>Total KSF</b>	<b>962</b>	<b>1,001</b>	<b>1,039</b>	<b>1,080</b>	<b>1,122</b>	<b>1,166</b>	<b>1,412</b>	<b>1,710</b>	<b>2,070</b>	<b>1,108</b>
Avg Sq Ft Per Job	390	390	390	390	390	390	390	390	390	
<b>Annual Increase</b>		<b>13-14</b>	<b>14-15</b>	<b>15-16</b>	<b>16-17</b>	<b>17-18</b>	<b>22-23</b>	<b>27-28</b>	<b>32-33</b>	<b>2013-33 Avg Anl</b>
Population		62	173	234	321	333	382	394	407	346
Jobs		96	100	104	108	112	136	165	199	142
Housing Units		25	70	95	130	135	155	160	165	140
Commercial KSF		17	16	18	18	19	23	28	33	24
Office/ Institutional KSF		15	15	15	16	17	20	25	30	21
Industrial/ Flex KSF		7	7	8	8	8	10	12	14	10
<b>Total KSF</b>		<b>39</b>	<b>38</b>	<b>41</b>	<b>42</b>	<b>44</b>	<b>53</b>	<b>65</b>	<b>77</b>	<b>53</b>