# Transportation Infrastructure Improvements Plan and Development Fee Study

**Prepared for:**

## City of Casa Grande, Arizona

July 8, 2008

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## Executive Summary

Wilson & Company recently completed the *City of Casa Grande Small Area Transportation Study* (hereafter referred to as SATS)[1]. The SATS notes that "as the City of Casa Grande increases in size and planning area, the roadway network is also growing to meet the additional travel demands"[2] and "significant improvement measures are needed to meet the travel demand generated by forecast population and employment growth"[3]. Given the findings of the SATS, the City of Casa Grande contracted with TischlerBise to calculate an infrastructure improvement plans (IIP) and updated development fees for transportation.

## DEVELOPMENT FEE REQUIREMENTS

*U.S Constitutional Requirements*

Like all land use regulations, development exactions, including development fees, are subject to the Fifth Amendment prohibition on taking of private property for public use without just compensation. Both state and federal courts have recognized the imposition of development fees on development as a legitimate form of land use regulation, provided the fees meet standards intended to protect against regulatory takings. To comply with the Fifth Amendment, development regulations must be shown to substantially advance a legitimate governmental interest. In the case of development fees, that interest is in the protection of public health, safety, and welfare by ensuring that development is not detrimental to the quality of essential public services.

There is little federal case law specifically dealing with development fees, although other rulings on other types of exactions (e.g. land dedication requirements) are relevant. In one of the most

[1] An electronic version of the SATS can be found on the City's Department of Public Works website: http://www.ci.casa-grande.az.us/c/document_library/get_file?folderId=4835&name=DLFE-337.pdf
[2] Page 39, *City of Casa Grande Small Area Transportation Study*, Wilson & Company, July 2, 2007.
[3] Page 60, Ibid.

important exaction cases, the U. S. Supreme Court found that a government agency imposing exactions on development must demonstrate an "essential nexus" between the exaction and the interest being protected (See *Nollan v. California Coastal Commission,* 1987). In a more recent case (*Dolan v. City of Tigard, OR,* 1994), the Court ruled that an exaction also must be "roughly proportional" to the burden created by development. However, the *Dolan* decision appeared to set

a higher standard of review for mandatory dedications of land than for monetary exactions such as development fees.

These constitutional requirements of development fees are commonly referred to as "rational nexus" test. The rational nexus test has three elements:

> Demand – a particular type of development demands a particular type of infrastructure.
>
> Proportionality – the fees are proportionate to the demand created by development for infrastructure.
>
> Benefit – The payer of the development fee must receive a benefit (i.e. the construction of infrastructure which accommodates their impact on a community's capital facilities and assets).

*State Requirements*

Many of these constitutional requirements are echoed in the state enabling legislation for municipalities to assess development fees. Development fees for municipalities in Arizona are authorized by Arizona Revised Statutes (A.R.S.) 9-463.05

Development fees for municipalities in Arizona must specifically:

> A. 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, other capital costs and associated appurtenances, equipment, vehicles, furnishings and other personalty
>
> B. Development fees assessed by a municipality under this section are subject to the following requirements:
>
> > 1. Development fees shall result in a beneficial use to the development.
> >
> > 2. 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 amended pursuant to subsection D of this section shall be used to provide the same category of necessary

public service for which the development fee was assessed. Interest earned on monies in the separate fund shall be credited to the fund.

3. The schedule for payment of fees shall be provided by the municipality. The municipality shall provide a credit toward the payment of a development fee for the required dedication of public sites, improvements and other necessary public services included in the infrastructure improvements plan and for which a development fee is assessed, to the extent the public sites, improvements and necessary public services are provided by the developer. The developer of residential dwelling units shall be required to pay development fees when construction permits for the dwelling units are issued, or at a later time if specified in a development agreement pursuant to Section 9-500.05. If a development agreement provides for fees to be paid at a time later than the issuance of construction permits, the deferred fees shall be paid no later than fifteen days after the issuance of a certificate of occupancy. The development agreement shall provide for the value of any deferred fees to be supported by appropriate security, including a surety bond, letter of credit or cash bond.

4. The amount of any development fees assessed pursuant to this section must bear a reasonable relationship to the burden imposed upon the municipality to provide additional necessary public services to the development. The municipality, in determining the extent of the burden imposed by the development, shall consider, among other things, the contribution made or to be made in the future in cash or by taxes, fees or assessments by the property owner towards the capital costs of the necessary public service covered by the development fee.

5. If development fees are assessed by a municipality, such fees shall be assessed in a nondiscriminatory manner.

6. In determining and assessing a development fee applying to land in a community facilities district established under title 48, chapter 4, article 6, the municipality shall take into account all public infrastructure provided by the district and capital costs paid by the district for necessary public services and shall not assess a portion of the development fee based on the infrastructure or costs.

C. A municipality shall give at least sixty days' advance notice of intention to assess a new or modified fee and shall release to the public a written report that identifies the methodology for calculating the amount of the development fee, explains the relationship between the development fee and the infrastructure improvements plan, includes documentation that supports the assessment of a new or modified development fee and identifies any index or indices to be used for automatic adjustment of the development fee pursuant to Subsection F for this section and the timing of those adjustments. The municipality shall conduct a public hearing on the proposed new or modified development fee at any time after the expiration of the sixty day notice of intention to assess a new or modified development fee and at least thirty days prior to the scheduled date of adoption of the new or modified fee by the governing body. A development fee assessed pursuant to this section shall not be

effective until seventy-five days after its formal adoption by the governing body of the municipality. Nothing in this subsection shall affect any development fee adopted prior to July 24, 1982.

D. Before the assessment of a new or modified development fee, the governing body of the municipality shall adopt or amend an infrastructure improvements plan. The municipality shall conduct a public hearing on the infrastructure improvements plan at least thirty days before adoption or amendment of the plan. The municipality shall release the plan to the public, make available to the public the documents used to prepare the plan and provide public notice at least sixty days before the public hearing, subject to the following:

1. An infrastructure improvements plan may be adopted concurrently with the report required by Subsection C of this section, and the municipality may provide for and schedule the notices and hearings required by this subsection together with the notices and hearings required by Subsection C of this section.

2. A municipality may amend an infrastructure improvements plan without a public hearing if the amendment addresses only elements of necessary public services that are included in the existing infrastructure improvements plan. The municipality shall provide public notices of those amendments at least fourteen days in advance of their effective date.

E. For each necessary public service that is the subject of a development fee, the infrastructure improvements plan shall:

1. Estimate the future necessary public services that will be required as a result of new development and the basis for the estimate.

2. Forecast the costs of infrastructure, improvements, real property, financing, other capital costs and associated appurtenances, equipment, vehicles, furnishings and other personalty that will be associated with meeting those future needs for necessary public services and estimate the time required to finance and provide the necessary public services.

F. A municipality may automatically adjust a development fee on an annual basis without a public hearing if the adjustment is based on a nationally recognized index applicable to the cost of the necessary public service that is the subject of the development fee and the adjustment mechanism is identified in the report required by Subsection C of this section. The municipality shall provide public notice of those adjustments at least thirty days in advance of their effective date.

G. Each municipality that assesses development fees shall submit an annual report accounting for the collection and use of the fees. The annual report shall include the following:

1. The amount assessed by the municipality for each type of development fee.

2. The balance of each fund maintained for each type of development fee assessed as of the beginning and end of the fiscal year.

3. The amount of interest or other earnings on the monies in each fund as of the end of the fiscal year.

4. The amount of development fee monies used to repay:

(a) Bonds issued by the municipality to pay the cost of a capital improvement project that is the subject of a development fee assessment.

(b) Monies advanced by the municipality from funds other than the funds established for development fees in order to pay the cost of a capital improvement project that is the subject of a development fee assessment.

5. The amount of development fee monies spent on each capital improvement project that is the subject of a development fee assessment and the physical location of each capital improvement project.

6. The amount of development fee monies spent for each purpose other than a capital improvement project that is the subject of a development fee assessment.

H. Within ninety days following the end of each fiscal year, each municipality shall submit a copy of the annual report to the city clerk. Copies shall be made available to the public on request. The annual report may contain financial information that has not been audited.

I. A municipality that fails to file the report required by this section shall not collect development fees until the report is filed.

J. Any action to collect a development fee shall be commenced within two years after the obligation to pay the fee accrues.

K. For the purposes of this section, "infrastructure improvements plan" means one or more written plans that individually or collectively identify each public service that is proposed to be the subject of a development fee and otherwise complies with the requirements of this section, and may be the municipality's capital improvements plan.

Sec. 2. Applicability

Section 9-463.05, Arizona Revised Statutes, as amended by this act, applies to development fees adopted or amended on or after the effective date of this act and shall not affect development fees duly adopted or amended before the effective date of this act.

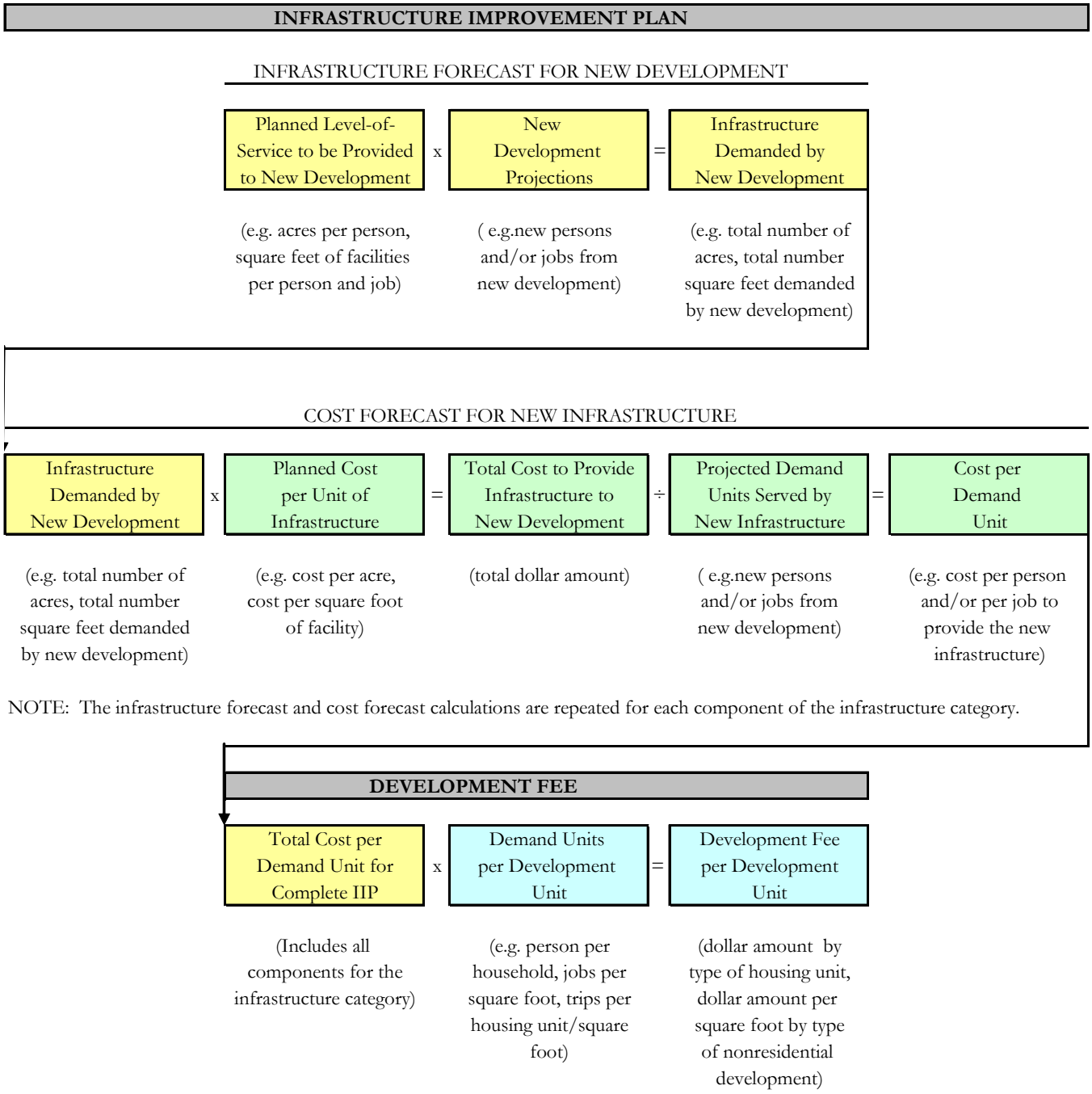
## CALCULATION METHODOLOGIES

TischlerBise evaluated several possible methodologies to determine the best measure of the demand created by new development for additional infrastructure capacity. This report documents the appropriate methodology and demand indicators by type of development for each IIP. The report also documents the relationship between the IIP and the development fees. Specific capital costs have been identified using local data and current dollars.

There are three basic methods used to calculate the various components of the City's IIP and development fees. The methodologies can be classified as looking at the past, present, and future capacities of infrastructure. In instances where infrastructure is built in advance of new development and will have excess capacity, the **buy-in methodology** is utilized. Under this methodology, new development is anticipated to repay for the excess capacity via the development fee. The **incremental expansion methodology** is used when a community plans to provide new development the same level-of-service (LOS) that is currently being provided to existing development. The third methodology is called the **plan-based methodology** which is based on existing, adopted plans. Under the plan-based methodology, there are two approaches considered. The *average approach* is used for planned projects that are the result of *both new and existing development*. The planned costs are allocated to both new and existing development which ensures that new growth only pays its share of the costs. The *marginal approach* is used for planned projects that are the result of *only new growth*. The planned costs are allocated to the net increase in new development.

The formula used to calculate the infrastructure improvement plan and development fee is diagrammed in Figure 1 below. The diagram starts in the upper left corner and progresses left-to-right and down through the lower right corner.

## Figure 1: IIP and Development Fee Formula



## IIP FORMULATION

As discussed above, Arizona state law requires the IIP to illustrate two points:

1. Estimate future necessary public services that will be required as a result of new development and basis for the estimate.

2. Forecast the costs of the infrastructure, improvements, real property, financing, other capital costs and associated appurtenances, equipment, vehicles, furnishings and other personalty that will be associated with meeting those future needs for necessary public services and estimate the time required to finance and provide the necessary public services.

The boxes shaded in yellow at the top of Figure 1 estimate the future necessary public services that will be required as a result of new development. This formula first determines the planned level-of-service (units of infrastructure per person and/or job and/or vehicle trip) to be provided to new development. The planned LOS is determined using the most appropriate calculation methodology (buy-in, incremental expansion, or plan-based). The planned LOS is then multiplied by the projected number of corresponding demand units (persons and/or jobs and/or vehicle trips) to calculate the total amount of infrastructure needed to serve new development.

The boxes shaded in green in the middle of Figure 1 forecast the cost to provide the projected infrastructure demanded by new development. The total cost for infrastructure is calculated by multiplying the amount of infrastructure needed to serve new development by the planned cost per unit of infrastructure. The final step in the IIP process is to calculate the cost per new demand unit (person and/or job and/or vehicle trip) to provide the infrastructure needed to serve new development. The total cost for infrastructure needed to serve new development is divided by the total number of new demand units to be served.

As noted in Figure 1, these calculations are repeated for each component of the IIP. The IIP forecasts the amount and cost of the infrastructure needed to serve new development for each component.

## DEVELOPMENT FEE CALCULATIONS

The boxes shaded in blue at the bottom of Figure 1 illustrate the steps in the calculation of the development fee. Arizona law requires identification of the methodology for calculating the amount of the development fee and explained the relationship between the development fee and the IIP. The first step in the development fee calculation totals the cost per demand unit for each component of the IIP to determine the total cost per demand unit to provide the complete IIP. The total cost per demand unit is then multiplied by the number of demand units per development unit. These factors include persons per household, jobs per square foot, vehicle trips per housing unit, and vehicle trips per square foot. These factors vary by type of development and measure the demand and proportionality of the demand created by different types of residential and nonresidential development for additional infrastructure. The development fees are calculated on a per unit basis for residential development. For nonresidential development, the majority of development fees are calculated on a per square foot basis, with the exception of certain development types which have a unique characteristic, such as hotels whose development fees are calculated on a per room basis.

## DEVELOPMENT FEE SCHEDULE

Figure 2 provides a schedule of Transportation Development Fees for the City. The City 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 expenditures and/or a decrease in the planned LOS standards.

**Figure 2: Schedule of Transportation Development Fees**

| ***Development Fees*** | | | |
|---|---|---|---|
| Residential (per housing unit) | *Residential* | *Commercial/ Shopping Center* | *All Other Nonresidential* |
| Single Family | $3,356 | | |
| Multi-Family | $2,311 | | |
| All Other Types of Housing | $1,750 | | |
| Nonresidential (per 1,000 Sq Ft/Hotel Room) | | | |
| Com / Shop Ctr less than 100,000 SF | | $8,035 | |
| Com / Shop Ctr 100,001-200,000 SF | | $6,877 | |
| Com / Shop Ctr over 200,001 SF | | $5,845 | |
| Office /Inst less than 100,000 SF | | | $2,627 |
| Office /Inst 100,001 to 200,000 SF | | | $2,239 |
| Office /Inst over 200,001 SF | | | $1,910 |
| Business Park | | | $2,513 |
| Light Industrial | | | $1,373 |
| Warehousing | | | $977 |
| Manufacturing | | | $752 |
| Hotel (per room) | | | $1,109 |

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 fees should be recalculated.

A note on rounding: Calculations throughout this report are based on analysis conducted using Excel software. Results are discussed in the report using one-and two-digit places (in most cases),

which represent rounded figures. However, the analysis itself uses figures carried to their ultimate decimal places; therefore the sums and products generated in the analysis may not equal the sum or product if the reader replicates the calculation with the factors shown in the report (due to the rounding of figures shown, not due to rounding in the analysis).

# Transportation

## OVERVIEW

The Transportation IIP and development fee includes components for road improvements, interchanges, support vehicles and equipment, and the IIP and development fee study. Average weekday trip generation rates by type of development are multiplied by the capital cost per vehicle miles of travel (VMT) to yield the Transportation IIP and Development Fees. The methodology includes trip adjustment factors for commuting patterns, pass-by trips and average trip length variation by type of land use.

## TRIP GENERATION RATES

Trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* The Transportation Development Fees are based on average weekday vehicle trip ends. 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 the development fees, 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%. As discussed further below, the development fee methodology includes additional adjustments to make the fees more proportionate to the infrastructure demand for particular types of development.

## ADJUSTMENT FOR JOURNEY-TO-WORK COMMUTING

Residential development has a higher trip adjustment factor of 56% to account for commuters leaving Casa Grande for work. According to the *National Household Transportation Survey* (see Table 6, Federal Highway Administration, 2001) home-based work trips are typically 31% of production trips (i.e., all out-bound trips, which are 50% of all trip ends). Also, Census 2000 data from Table P27 in Summary File 3 indicates that 36% of Casa Grande's workers travel outside the City for work. In combination, these factors (0.31 x 0.50 x 0.36 = 0.06) account for 6% of production trips. The total adjustment factor for residential includes attraction trips (50% of trip ends) plus the journey-to-work commuting adjustment (6% of production trips) for a total of 56%.

## ADJUSTMENT FOR PASS-BY TRIPS

Data contained in the book *Trip Generation Manual* indicates there is an inverse relationship between the size of shopping centers and pass-by trips. Therefore, appropriate trip adjustment factors have been calculated according to shopping center size (see Figure 3 below). For shopping center/retail development, the trip adjustment factor is less than 50% because these land uses attract vehicles as they pass by on arterial streets. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For a shopping center of 100,000 square feet of floor area, the *Trip Generation Manual* indicates that on average 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 shopping center as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 66% multiplied by 50%, or approximately 33% of the trip ends.

**Figure 3: Shopping Center/Retail Trip Rates and Adjustment Factors**

| Floor Area in thousands (KSF) | Commercial Pass-by Trips* | Commercial Trip Adj Factor** | *Shopping Centers* (ITE 820) | | *General Office* (ITE 710) | | *Shopping Centers* (ITE 820) | | *General Office* (ITE 710) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Trip Ends | Rate/KSF | Trip Ends | Rate/KSF | Trip Ends | Rate/KSF | Trip Ends | Rate/KSF |
| 10 | 52% | 24% | 1,520 | 152.03 | 227 | 22.66 | 137 | 13.70 | 90 | 9.00 |
| 25 | 45% | 28% | 2,758 | 110.32 | 459 | 18.35 | 251 | 10.03 | 107 | 4.27 |
| 50 | 39% | 31% | 4,328 | 86.56 | 782 | 15.65 | 396 | 7.92 | 135 | 2.70 |
| 100 | 34% | 33% | 6,791 | 67.91 | 1,334 | 13.34 | 626 | 6.26 | 191 | 1.91 |
| 200 | 29% | 36% | 10,656 | 53.28 | 2,275 | 11.37 | 989 | 4.95 | 303 | 1.51 |
| 400 | 23% | 39% | 16,722 | 41.80 | 3,879 | 9.70 | 1,563 | 3.91 | 527 | 1.32 |
| 800 | 18% | 41% | 26,239 | 32.80 | 6,615 | 8.27 | 2,470 | 3.09 | 975 | 1.22 |

*Source: Trip Generation, Institute of Transportation Engineers, 2003.*

* Based on data published by ITE in Trip Generation Handbook (2004), the best trendline correlation between pass-by trips and floor area is a logarithmic curve with the equation ((-7.6812*LN(KSF)) + 69.293).

** To convert trip ends to vehicle trips, the standard adjustment factor is 50%. Due to pass-by trips, commercial trip adjustment factors are lower, as derived from the following formula (0.50*(1-passby pct)).

## AVERAGE TRIP LENGTH ADJUSTMENT BY LAND USE

The demand for street infrastructure is a function of both the number of vehicle trips and the distance traveled. Multiplying the number of vehicle trips by the average trip length (in miles) yields vehicle miles of travel (VMT). The Transportation Development Fee methodology includes a percentage adjustment to account for trip length variation by type of land use. As documented in Table 6 of the *National Household Travel Survey* (FHWA, 2001), vehicle trips from residential development are approximately 122% of the average trip length. Trips associated with residential development include home-based work trips plus social and recreational purposes. Conversely, shopping trips associated with commercial development are roughly 68% of the average trip length, while other nonresidential development typically accounts for trips that are 75% of the average trip length.

## PLANNED FY2015 TRANSPORTATION PROJECTS

The SATS includes "improvement recommendations have been identified to ensure adequate system capacity to handle the magnitude of projected population and employment growth"[4]. The plan estimates improvement needs of $3,400,600,000 through FY2030 (see Table 6-2, page 71). As the first step in developing the infrastructure improvement plan for the transportation development fees, staff from the Department of Public Works prioritized projects which the City plans to complete over the next six years. These projects total $110,658,000 and 41.0 lane miles and are shown in Figure 4 below.

[4] Page 65, Ibid.

**Figure 4: Planned Transportation Projects through FY2015**

| | *Fiscal Year =>* | | | | | | | *Lane* |
|---|---|---|---|---|---|---|---|---|
| *Project* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | *TOTAL* | *Miles* |
| Cottonwood Ln: Peart Rd to Sunland Gin Rd Phase I | $17,246,500 | $0 | $0 | $0 | $0 | $0 | $17,246,500 | 9.0 |
| Peart/McCartney intersection | $3,000,000 | $0 | $0 | $0 | $0 | $0 | $3,000,000 | 0.0 |
| Cottonwood Phase 2 | $0 | $17,246,500 | $0 | $0 | $0 | $0 | $17,246,500 | 9.0 |
| Peart/Kortsen intersection | $0 | $3,000,000 | $0 | $0 | $0 | $0 | $3,000,000 | 0.0 |
| Kortsen Rd: Pinal Ave to I-10 Phase I | $0 | $0 | $15,582,500 | $0 | $0 | $0 | $15,582,500 | 11.5 |
| Kortsen/Pinal intersection | $0 | $0 | $3,000,000 | $0 | $0 | $0 | $3,000,000 | 0.0 |
| Kortsen Rd. Phase II | $0 | $0 | $0 | $15,582,500 | $0 | $0 | $15,582,500 | 11.5 |
| Hacienda/Cottonwood Intersection | $0 | $0 | $0 | $3,000,000 | $0 | $0 | $3,000,000 | 0.0 |
| Hacienda/Kortsen Intersection | $0 | $0 | $0 | $0 | $3,000,000 | $0 | $3,000,000 | 0.0 |
| Kortsen Interchange Phase I | $0 | $0 | $0 | $0 | $15,000,000 | $0 | $15,000,000 | 0.0 |
| Kortsen Interchange Phase II | $0 | $0 | $0 | $0 | $0 | $15,000,000 | $15,000,000 | 0.0 |
| TOTAL | $20,246,500 | $20,246,500 | $18,582,500 | $18,582,500 | $18,000,000 | $15,000,000 | $110,658,000 | 41.0 |

Source: Table 6-2, *City of Casa Grande Small Area Transportation Study*, Wilson & Company, July 2, 2007 and City Public Works staff.

## TRANSPORTATION IIP

The SATS identifies the some portions of the projects listed in Figure 4 to be the funding responsibility of other entities such as the Arizona Department of Transportation (ADOT) or Pinal County. The first step in developing the Transportation IIP, is determining the City's share of the planned projects. The SATS identifies projects which have funding obligations from other entities such as the Arizona Department of Transportation and Pinal County. In instances which the SATS identifies other funding entities, TischlerBise, with the concurrence of City staff, has assumed a 50-50 funding and construction split with the City and other entity.

The next step in developing the Transportation IIP is determining the portion of the planned projects that is the result of existing development versus new development. Some of the planned projects in Figure 4 address both replacements of existing infrastructure as well as providing additional capacity that are the result of new development. Since development fees can only be used to fund additional infrastructure capacity that is the result of new development, the portion of the projects which replaces existing infrastructure must be factored out of the IIP and development fee calculations.

Page 65 of the SATS includes the following assumption:

> "When an existing two-lane roadway showed a need to be upgraded to four or six travel lanes, it was assumed that the entire facility would be reconstructed."

Under this assumption, using a planned six lane road as an example, four of the six lanes (66%) would be additional capacity for new development while two of the six lanes (33%) would be replacement of existing infrastructure. The Cottonwood Lane and Korsten Road projects fall under this assumption. Thus, 66% of the cost and lane miles is the result of new development and included in the IIP and fee calculations.

Figure 5 documents these factors in converting the planned projects in Figure 4 into the Transportation IIP. The costs and lane miles at the right of Figure 5 are used in the Transportation IIP.

**Figure 5: Transportation IIP Factors**

| TOTAL PROJECT | | | CITY SHARE | | | NEW DEVELOPMENT SHARE | | |
|---|---|---|---|---|---|---|---|---|
| *Project* | *TOTAL* | *Lane Miles* | *City Share** | *Cost* | *Lane Miles* | *New Dev. Share*** | *Cost* | *Lane Miles* |
| Cottonwood Ln: Peart Rd to Sunland Gin Rd Phase I | $17,246,500 | 9.0 | 50% | $8,623,250 | 4.5 | 66% | $5,691,345 | 3.0 |
| Peart/McCartney intersection | $3,000,000 | 0.0 | 100% | $3,000,000 | 0.0 | 100% | $3,000,000 | 0.0 |
| Cottonwood Phase 2 | $17,246,500 | 9.0 | 50% | $8,623,250 | 4.5 | 66% | $5,691,345 | 3.0 |
| Peart/Kortsen intersection | $3,000,000 | 0.0 | 100% | $3,000,000 | 0.0 | 100% | $3,000,000 | 0.0 |
| Kortsen Rd: Pinal Ave to I-10 Phase I | $15,582,500 | 11.5 | 50% | $7,791,250 | 5.8 | 66% | $5,142,225 | 3.8 |
| Kortsen/Pinal intersection | $3,000,000 | 0.0 | 100% | $3,000,000 | 0.0 | 100% | $3,000,000 | 0.0 |
| Kortsen Rd. Phase II | $15,582,500 | 11.5 | 50% | $7,791,250 | 5.8 | 66% | $5,142,225 | 3.8 |
| Hacienda/Cottonwood Intersection | $3,000,000 | 0.0 | 100% | $3,000,000 | 0.0 | 100% | $3,000,000 | 0.0 |
| Hacienda/Kortsen Intersection | $3,000,000 | 0.0 | 100% | $3,000,000 | 0.0 | 100% | $3,000,000 | 0.0 |
| Kortsen Interchange Phase I | $15,000,000 | 0.0 | 100% | $15,000,000 | 0.0 | 100% | $15,000,000 | 0.0 |
| Kortsen Interchange Phase II | $15,000,000 | 0.0 | 100% | $15,000,000 | 0.0 | 100% | $15,000,000 | 0.0 |
| TOTAL | $110,658,000 | 41.0 | | $77,829,000 | 20.5 | | $66,667,140 | 13.5 |

* Table 6-2, *City of Casa Grande Small Area Transportation Study*, Wilson & Company, July 2, 2007. In instances where funding from outside entities is identified, TischlerBise, with concurrence of City staff, estimates the funding and construction split to be 50-50 between the City and other entities.
** Page 65, *City of Casa Grande Small Area Transportation Study*, Wilson & Company, July 2, 2007.

Using the Cottonwood Ln: Peart Rd. to Sunland Gin Rd. Phase 1 as an example, the cost and lane miles calculations are as follows:

> $17,246,500 x 50% City share = $8,623,250 City's share x 66% New development share = $5,691,345 New development's share
>
> 9.0 lane miles x 50% City share = 4.5 lane miles City's share x 66% New development share = 3.0 lane miles New development's share

Figure 6 summarizes the Transportation IIP that will serve as the basis of the Transportation Development Fees. The projects in the IIP total $66,667,140 and 13.5 lane miles.

**Figure 6: Transportation IIP**

| | *Fiscal Year =>* | | | | | | | *Lane* |
|---|---|---|---|---|---|---|---|---|
| *Project* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | *TOTAL* | *Miles* |
| Cottonwood Ln: Peart Rd to Sunland Gin Rd Phase I | $5,691,345 | $0 | $0 | $0 | $0 | $0 | $5,691,345 | 3.0 |
| Peart/McCartney intersection | $3,000,000 | $0 | $0 | $0 | $0 | $0 | $3,000,000 | 0.0 |
| Cottonwood Phase 2 | $0 | $5,691,345 | $0 | $0 | $0 | $0 | $5,691,345 | 3.0 |
| Peart/Kortsen intersection | $0 | $3,000,000 | $0 | $0 | $0 | $0 | $3,000,000 | 0.0 |
| Kortsen Rd: Pinal Ave to I-10 Phase I | $0 | $0 | $5,142,225 | $0 | $0 | $0 | $5,142,225 | 3.8 |
| Kortsen/Pinal intersection | $0 | $0 | $3,000,000 | $0 | $0 | $0 | $3,000,000 | 0.0 |
| Kortsen Rd. Phase II | $0 | $0 | $0 | $5,142,225 | $0 | $0 | $5,142,225 | 3.8 |
| Hacienda/Cottonwood Intersection | $0 | $0 | $0 | $3,000,000 | $0 | $0 | $3,000,000 | 0.0 |
| Hacienda/Kortsen Intersection | $0 | $0 | $0 | $0 | $3,000,000 | $0 | $3,000,000 | 0.0 |
| Kortsen Interchange Phase I | $0 | $0 | $0 | $0 | $15,000,000 | $0 | $15,000,000 | 0.0 |
| Kortsen Interchange Phase II | $0 | $0 | $0 | $0 | $0 | $15,000,000 | $15,000,000 | 0.0 |
| TOTAL | $8,691,345 | $8,691,345 | $8,142,225 | $8,142,225 | $18,000,000 | $15,000,000 | $66,667,140 | 13.5 |

## ROAD IMPROVEMENTS COMPONENT

The road improvements component of the Transportation IIP includes the following projects:

**Figure 7: Road Improvements IIP**

| *Road Improvement* | *Cost* | *Lane Miles* |
|---|---|---|
| Cottonwood Ln: Peart Rd to Sunland Gin Rd Phase I | $5,691,345 | 3.0 |
| Peart/McCartney intersection | $3,000,000 | 0.0 |
| Cottonwood Phase 2 | $5,691,345 | 3.0 |
| Peart/Kortsen intersection | $3,000,000 | 0.0 |
| Kortsen Rd: Pinal Ave to I-10 Phase I | $5,142,225 | 3.8 |
| Kortsen/Pinal intersection | $3,000,000 | 0.0 |
| Kortsen Rd. Phase II | $5,142,225 | 3.8 |
| Hacienda/Cottonwood Intersection | $3,000,000 | 0.0 |
| Hacienda/Kortsen Intersection | $3,000,000 | 0.0 |
| TOTAL | $36,667,140 | 13.5 |

## VEHICLE MILES OF TRAVEL ON PLANNED ROAD IMPROVEMENTS

VMT is the product of the number of vehicle trips multiplied by the average trip length. These factors are discussed below.

*Vehicle Trips from Development in Casa Grande*

Figure 8 documents projected vehicle trips and VMT on the planned road improvements associated with new development in Casa Grande over the next six years. The demographic data shown in the boxes at the top of the table are from Appendix B at the back of this report. Trip generation rates and trip adjustment factors, as used in the development fee calculations, convert projected development into average weekday vehicle trips (shown with gray shading).

*Lane Miles*

The IIP identifies 13.5 lane miles of road improvements attributable to new development.

*Lane Capacity*

The road improvements component is based on a lane capacity standard of 8,700 vehicles per lane mile which represents a LOS of D taken from Table 3-1 on page 15 of the SATS.

*Average Trip Length*

Knowing the increase in vehicle trips, planned lane miles, and lane capacity, it is possible to derive the average trip length on the planned road improvements from new residential and nonresidential growth in Casa Grande. Because the VMT calculations include 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), the average trip length is determined through a series of iterations using spreadsheet software. As shown in Figure 8, the average trip length on the planned road improvement projects by new residential and nonresidential development is 1.31 miles.

**Figure 8: Planned Road Improvements Capacity Analysis**

**Road Improvements Capacity Analysis**

Casa Grande, Arizona

| *INPUT VARIABLES* | |
|---|---|
| Single Family Weekday VTE per Unit | 9.57 |
| Multi-Family Weekday VTE per Unit | 6.72 |
| All Other Weekday VTE per Unit | 4.99 |
| Retail Weekday VTE/KSF | 67.91 |
| Office Weekday VTE/KSF | 18.35 |
| Industrial Flex Weekday VTE/KSF | 3.82 |
| Residential Trip Adj Factor | 56% |
| Retail Trip Adj Factor | 33% |
| Other Nonres Trip Adj Factor | 50% |
| City Arterial Trips | 100% |
| **Average Arterial Trip Length** | **1.31** |
| Residential Trip Length | 122% |
| Retail Trip Length | 68% |
| Other Nonresidential Trip Length | 75% |
| City Arterial Capacity Per Lane @ LOS D** | 8,700 |

| *Fiscal Year* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | *2016* |
|---|---|---|---|---|---|---|---|
| **DEMAND DATA*** | | | | | | | |
| SINGLE FAMILY DETACHED | 17,803 | 19,385 | 20,966 | 22,547 | 24,129 | 25,710 | 27,292 |
| MULTI-FAMILY | 3,360 | 3,377 | 3,393 | 3,409 | 3,425 | 3,441 | 3,457 |
| ALL OTHER | 2,317 | 2,383 | 2,450 | 2,516 | 2,583 | 2,649 | 2,716 |
| RETAIL/COMMERCIAL KSF | 3,469 | 3,706 | 3,942 | 4,179 | 4,416 | 4,652 | 4,889 |
| OFFICE/INSTITUTIONAL KSF | 1,781 | 1,848 | 1,914 | 1,981 | 2,048 | 2,114 | 2,181 |
| INDUSTRIAL FLEX KSF | 3,241 | 3,462 | 3,683 | 3,904 | 4,125 | 4,346 | 4,567 |
| *SINGLE FAMILY TRIPS* | 94,695 | 103,106 | 111,518 | 119,930 | 128,341 | 136,753 | 145,164 |
| *MULTI-FAMILY TRIPS* | 12,551 | 12,611 | 12,672 | 12,732 | 12,792 | 12,852 | 12,912 |
| *ALL OTHER TRIPS* | 6,426 | 6,610 | 6,795 | 6,979 | 7,163 | 7,348 | 7,532 |
| *RETAIL TRIPS* | 77,741 | 83,045 | 88,349 | 93,653 | 98,956 | 104,260 | 109,564 |
| *OFFICE TRIPS* | 16,341 | 16,952 | 17,564 | 18,176 | 18,787 | 19,399 | 20,011 |
| *IND/FLEX TRIPS* | 6,190 | 6,612 | 7,035 | 7,457 | 7,879 | 8,301 | 8,723 |
| *CITY ARTERIAL TRIPS* | 213,944 | 228,938 | 243,932 | 258,925 | 273,919 | 288,912 | 303,906 |
| CITY ARTERIAL VMT | 273,059 | 292,634 | 312,208 | 331,783 | 351,357 | 370,931 | 390,506 |
| CUMULATIVE ARTERIAL LN MI NEEDED | 2.2 | 2.3 | 2.2 | 2.3 | 2.2 | 2.3 | |
| | | | | | **TOTAL LANE MILES** | **13.5** | |

* Appendix B.

** Table 3-1, *City of Casa Grande Small Area Transportation Study* , Wilson & Company, July 2, 2007.

## COST PER VMT FOR PLANNED ROAD IMPROVEMENTS

The total cost of the planned road improvement projects which are the result of new development totals $36,667,410. This figure is divided by the net increase of 117,447 Citywide VMT's on these projects from FY2010 through FY2015 which is taken from Figure 8 above (390,506 VMT's through FY2015 – 273,059 VMT's in FY2010 = 117,447 VMT's). This results in a cost per VMT of $312.20 ($36,667,410/117,447 VMT's = $312.20).

**Figure 9: Planned Road Improvements Cost per VMT**

| *Road Improvement* | *Cost* |
|---|---|
| Cottonwood Ln: Peart Rd to Sunland Gin Rd Phase I | $5,691,345 |
| Peart/McCartney intersection | $3,000,000 |
| Cottonwood Phase 2 | $5,691,345 |
| Peart/Kortsen intersection | $3,000,000 |
| Kortsen Rd: Pinal Ave to I-10 Phase I | $5,142,225 |
| Kortsen/Pinal intersection | $3,000,000 |
| Kortsen Rd. Phase II | $5,142,225 |
| Hacienda/Cottonwood Intersection | $3,000,000 |
| Hacienda/Kortsen Intersection | $3,000,000 |
| TOTAL | $36,667,140 |
| Net Increase in Citywide VMT FY2010-2015 | 117,447 |
| Cost per VMT | $312.20 |

## INTERCHANGE COMPONENT

The interchange component of the Transportation IIP includes the following projects:

**Figure 10: Interchange IIP**

| | |
|---|---|
| Kortsen Interchange Phase I | $15,000,000 |
| Kortsen Interchange Phase II | $15,000,000 |
| TOTAL | $30,000,000 |

## VEHICLE MILES OF TRAVEL ON PLANNED INTERCHANGES

Figure 11 documents projected vehicle trips and VMT on the planned interchanges associated with new development in Casa Grande over the next twenty years. The same demographic projections, lane capacity standards, and average trip length listed in Figure 8 are used to calculate the planned VMT's to be served by the planned interchanges.

**Figure 11: Planned Interchange Capacity Analysis**

| *INPUT VARIABLES* | |
|---|---|
| Single Family Weekday VTE per Unit | 9.57 |
| Multi-Family Weekday VTE per Unit | 6.72 |
| All Other Weekday VTE per Unit | 4.99 |
| Retail Weekday VTE/KSF | 67.91 |
| Office Weekday VTE/KSF | 18.35 |
| Industrial Flex Weekday VTE/KSF | 3.82 |
| Residential Trip Adj Factor | 56% |
| Retail Trip Adj Factor | 33% |
| Other Nonres Trip Adj Factor | 50% |
| City Arterial Trips | 100% |
| **Average Arterial Trip Length** | **1.31** |
| Residential Trip Length | 122% |
| Retail Trip Length | 68% |
| Other Nonresidential Trip Length | 75% |
| City Arterial Capacity Per Lane @ LOS D** | 8,700 |

**Interchange Capacity Analysis**

Casa Grande, Arizona

| *Fiscal Year* | *2010* | *10 Year Increments* *2011* | *2021* | *2031* |
|---|---|---|---|---|
| **DEMAND DATA*** | | | | |
| SINGLE FAMILY DETACHED | 17,803 | 19,385 | 35,199 | 51,011 |
| MULTI-FAMILY | 3,360 | 3,377 | 3,537 | 3,698 |
| ALL OTHER | 2,317 | 2,383 | 3,048 | 3,711 |
| RETAIL/COMMERCIAL KSF | 3,469 | 3,706 | 6,072 | 8,440 |
| OFFICE/INSTITUTIONAL KSF | 1,781 | 1,848 | 2,514 | 3,182 |
| INDUSTRIAL FLEX KSF | 3,241 | 3,462 | 5,672 | 7,882 |
| *SINGLE FAMILY TRIPS* | 94,695 | 103,106 | 187,222 | 271,329 |
| *MULTI-FAMILY TRIPS* | 12,551 | 12,611 | 13,212 | 13,812 |
| *ALL OTHER TRIPS* | 6,426 | 6,610 | 8,454 | 10,293 |
| *RETAIL TRIPS* | 77,741 | 83,045 | 136,083 | 189,150 |
| *OFFICE TRIPS* | 16,341 | 16,952 | 23,069 | 29,198 |
| *IND/FLEX TRIPS* | 6,190 | 6,612 | 10,834 | 15,055 |
| *CITY ARTERIAL TRIPS* | 213,944 | 228,938 | 378,874 | 528,837 |
| CITY ARTERIAL VMT | 273,059 | 292,634 | 488,378 | 684,136 |

* Appendix B.
** Table 3-1, *City of Casa Grande Small Area Transportation Study*, Wilson & Company, July 2, 2007.

## COST PER VMT FOR PLANNED INTERCHANGES

The total cost of the planned interchange projects which are the result of new development totals $30,000,000. This figure is divided by the net increase of 411,077 Citywide VMT's on these projects from FY2010 through FY2030 which is taken from Figure 11 above (684,136 VMT's through FY2015 – 273,059 VMT's in FY2010 = 411,077 VMT's). This results in a cost per VMT of $72.98 ($30,000,000/411,077 VMT's = $72.98).

**Figure 12: Planned Intersection Cost per VMT**

| | |
|---|---|
| Kortsen Interchange Phase I | $15,000,000 |
| Kortsen Interchange Phase II | $15,000,000 |
| TOTAL | $30,000,000 |
| Net Increase in Citywide VMT FY2010-FY2030 | 411,077 |
| Cost per VMT | $72.98 |

## SUPPORT VEHICLES AND EQUIPMENT COMPONENT

As the City's transportation network gets larger, additional support vehicles and equipment will be needed. The City plans to maintain the LOS for support vehicles and equipment it is currently providing to existing residential and nonresidential development. Thus, the incremental expansion methodology is used to calculate the vehicles component of the IIP and development fee.

*LOS Analysis*

The City currently has 53 vehicles and equipment supporting the City transportation efforts. The current LOS for vehicles and equipment is calculated as follows: 53 units/213,944 trips = 0.0002 vehicles/pieces of equipment per trip.

**Figure 13: Support Vehicles and Equipment LOS Standards**

| *Vehicle/Equipment Type* | *Units in Service* |
|---|---|
| Bucket Truck | 1 |
| 2 Tone Crewcab Dump Truck | 2 |
| Swaploader | 1 |
| Linedryer Striper | 1 |
| Gannon | 1 |
| Sign Mainline | 1 |
| 9-wheel Roller | 1 |
| 2 1/2 Ton Crewcab Truck | 1 |
| 3/4 Ton 4X4 Pickup Truck | 1 |
| Crewcab Pickup Truck | 2 |
| 3/4 Ton Pickup Truck | 1 |
| Road Grader | 1 |
| Street Sweeper | 4 |
| Patch Truck | 1 |
| Dump Truck | 4 |
| Trailer | 8 |
| Trailer-mounted Crackseal Machine | 1 |
| Loader | 2 |
| Backhoe | 3 |
| Cement Mixer | 4 |
| Roller | 2 |
| Cement Saw | 1 |
| Air Compressor | 2 |
| Patch Sprayer | 1 |
| Sand Spreader | 1 |
| Mower | 1 |
| Paver | 1 |
| 4000gal Water Truck | 2 |
| Vibrating Compactor | 1 |
| TOTAL | 53 |

| | |
|---|---|
| *Demand Units FY2010* | |
| Average Weekday Vehicle Trips | 213,944 |
| *Current LOS* | |
| Vehicles per Trip | 0.0002 |

*Cost Analysis*

The City's Public Works Department estimates the current inventory of support vehicles and equipment to have a total replication value of $3,236,500, an average of $61,066 per unit. Based on the current LOS of 0.0002 units per trip, and an average cost of $61,066 per unit, the cost per demand unit is $15.13 per trip.

**Figure 14: Support Vehicles and Equipment Cost Standards**

| *Vehicle/Equipment Type* | *Units in Service* | *Unit Price** | *Replacement Cost* |
|---|---|---|---|
| Bucket Truck | 1 | $95,000 | $95,000 |
| 2 Tone Crewcab Dump Truck | 2 | $40,000 | $80,000 |
| Swaploader | 1 | $70,000 | $70,000 |
| Linedryer Striper | 1 | $10,000 | $10,000 |
| Gannon | 1 | $48,500 | $48,500 |
| Sign Mainline | 1 | $32,000 | $32,000 |
| 9-wheel Roller | 1 | $65,000 | $65,000 |
| 2 1/2 Ton Crewcab Truck | 1 | $48,000 | $48,000 |
| 3/4 Ton 4X4 Pickup Truck | 1 | $22,000 | $22,000 |
| Crewcab Pickup Truck | 2 | $23,000 | $46,000 |
| 3/4 Ton Pickup Truck | 1 | $18,000 | $18,000 |
| Road Grader | 1 | $267,000 | $267,000 |
| Street Sweeper | 4 | $180,000 | $720,000 |
| Patch Truck | 1 | $102,000 | $102,000 |
| Dump Truck | 4 | $120,000 | $480,000 |
| Trailer | 8 | $5,000 | $40,000 |
| Trailer-mounted Crackseal Machine | 1 | $31,000 | $31,000 |
| Loader | 2 | $150,000 | $300,000 |
| Backhoe | 3 | $79,000 | $237,000 |
| Cement Mixer | 4 | $4,000 | $16,000 |
| Roller | 2 | $31,000 | $62,000 |
| Cement Saw | 1 | $10,000 | $10,000 |
| Air Compressor | 2 | $15,000 | $30,000 |
| Patch Sprayer | 1 | $40,000 | $40,000 |
| Sand Spreader | 1 | $15,000 | $15,000 |
| Mower | 1 | $55,000 | $55,000 |
| Paver | 1 | $44,000 | $44,000 |
| 4000gal Water Truck | 2 | $110,000 | $220,000 |
| Vibrating Compactor | 1 | $33,000 | $33,000 |
| TOTAL | 53 | | $3,236,500 |

Average Cost per Vehicle => $61,066

*Current LOS*

Vehicles per Trip 0.0002

*Cost Factor*

Average Cost per Vehicle $61,066

*Cost per*

Average Weekday Trip $15.13

* Casa Grande Public Works Department.

Figure 15 shows the IIP for the support vehicles and equipment. The IIP is calculated using the development projections from Appendix B at the back of the report and the LOS and cost figures listed above. Over the next six years, there is a projected increase of 51,936 trips from residential development and 38,025 trips from nonresidential development. Based on the planned LOS, this amount of residential development will require approximately 12.9 vehicles/pieces of equipment while nonresidential development will require 9.4 vehicles/pieces of equipment over the next six years. The projected cost of this demanded infrastructure for residential development totals $785,683 while nonresidential development accounts for $575,238.

**Figure 15: Support Vehicles and Equipment IIP**

**NEW DEVELOPMENT PROJECTIONS**

| | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | *2016* |
|---|---|---|---|---|---|---|---|
| Vehicle Trip Projections Residential Development | 113,672 | 122,328 | 130,984 | 139,640 | 148,296 | 156,952 | 165,609 |
| Vehicle Trip Projections Nonresidential Development | 100,272 | 106,610 | 112,947 | 119,285 | 125,623 | 131,960 | 138,298 |
| Vehicle Miles of Travel Projections (VMT) Residential Development | 181,671 | 195,505 | 209,339 | 223,173 | 237,007 | 250,841 | 264,676 |
| Vehicle Miles of Travel Projections (VMT) Nonresidential Development | 91,389 | 97,129 | 102,869 | 108,610 | 114,350 | 120,090 | 125,830 |
| | | | | | | | *6 Year Total* |
| Net Change Vehicle Trips Residential Development | 8,656 | 8,656 | 8,656 | 8,656 | 8,656 | 8,656 | 51,936 |
| Net Change Vehicle Trips Nonresidential Development | 6,338 | 6,338 | 6,338 | 6,338 | 6,338 | 6,338 | 38,025 |
| Net Change VMT Residential Development | 13,834 | 13,834 | 13,834 | 13,834 | 13,834 | 13,834 | 83,005 |
| Net Change VMT Nonresidential Development | 5,740 | 5,740 | 5,740 | 5,740 | 5,740 | 5,740 | 34,442 |

**SUPPORT VEHICLES AND EQUIPMENT**

| | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | *2016* |
|---|---|---|---|---|---|---|---|
| Current LOS-Vehicles/Equipment per Trip | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 |
| | | | | | | | *6 Year Total* |
| Vehicles Demanded by New Res. Development | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 12.9 |
| Vehicles Demanded by New Nonres. Development | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 9.4 |
| TOTAL | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 22.3 |
| Planned Cost Per Vehicle/Piece of Equipment | $61,066 | $61,066 | $61,066 | $61,066 | $61,066 | $61,066 | |
| | | | | | | | *6 Year Total* |
| Support Vehicles/Equipment Cost For New Res. Development | $130,947 | $130,947 | $130,947 | $130,947 | $130,947 | $130,947 | $785,683 |
| Support Vehicles/Equipment Cost For New Nonres. Development | $95,873 | $95,873 | $95,873 | $95,873 | $95,873 | $95,873 | $575,238 |
| TOTAL | $226,820 | $226,820 | $226,820 | $226,820 | $226,820 | $226,820 | $1,134,101 |

## IIP AND DEVELOPMENT FEE STUDY COMPONENT

The cost of preparing the Transportation IIP and Development Fee Study is also included in the fee calculations. As we do with many of our development fee clients in Arizona, TischlerBise has included the cost of preparing the current IIP and development fee in the fee calculations in order to create a source of funding to conduct this regular update. This cost ($14,000) is allocated over the projected increase in trips over the next three years (44,981). This results in a development fee study of $0.31 per trip ($14,000/44,981 = $0.31).

Figure 16 shows the IIP for the Transportation Improvements IIP and Development Fee Study. The projected cost of this study totals $28,000 over the next six years for new development.

### Figure 16: Transportation IIP and Development Fee Study IIP

**NEW DEVELOPMENT PROJECTIONS**

| | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | *2016* |
|---|---|---|---|---|---|---|---|
| Vehicle Trip Projections Residential Development | 113,672 | 122,328 | 130,984 | 139,640 | 148,296 | 156,952 | 165,609 |
| Vehicle Trip Projections Nonresidential Development | 100,272 | 106,610 | 112,947 | 119,285 | 125,623 | 131,960 | 138,298 |
| Vehicle Miles of Travel Projections (VMT) Residential Development | 181,671 | 195,505 | 209,339 | 223,173 | 237,007 | 250,841 | 264,676 |
| Vehicle Miles of Travel Projections (VMT) Nonresidential Development | 91,389 | 97,129 | 102,869 | 108,610 | 114,350 | 120,090 | 125,830 |
| | | | | | | | *6 Year Total* |
| Net Change Vehicle Trips Residential Development | 8,656 | 8,656 | 8,656 | 8,656 | 8,656 | 8,656 | 51,936 |
| Net Change Vehicle Trips Nonresidential Development | 6,338 | 6,338 | 6,338 | 6,338 | 6,338 | 6,338 | 38,025 |
| Net Change VMT Residential Development | 13,834 | 13,834 | 13,834 | 13,834 | 13,834 | 13,834 | 83,005 |
| Net Change VMT Nonresidential Development | 5,740 | 5,740 | 5,740 | 5,740 | 5,740 | 5,740 | 34,442 |

**TRANSPORTATION IIP AND DEVELOPMENT FEE STUDY**

| | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | *2016* |
|---|---|---|---|---|---|---|---|
| Planned Study Cost per Res. Trip | $0.31 | $0.31 | $0.31 | $0.31 | $0.31 | $0.31 | $0.31 |
| Planned Study Cost per Nonres. Trip | $0.31 | $0.31 | $0.31 | $0.31 | $0.31 | $0.31 | $0.31 |
| | | | | | | | *6 Year Total* |
| IIP and Development Fee Study Cost For New Res. Development | $2,694 | $2,694 | $2,694 | $2,694 | $2,694 | $2,694 | $16,165 |
| IIP and Development Fee Study Cost For New Nonres. Development | $1,973 | $1,973 | $1,973 | $1,973 | $1,973 | $1,973 | $11,835 |
| **TOTAL** | **$4,667** | **$4,667** | **$4,667** | **$4,667** | **$4,667** | **$4,667** | **$28,000** |

## TRANSPORTATION DEVELOPMENT FEE

Figure 17 provides a summary of the cost factors used to calculate the Transportation Development Fees. The fees are calculated for both residential and nonresidential land uses. Developers may be eligible for site-specific credits or reimbursements only if they provide system improvements that have been included in the Transportation IIP. Specific policies and procedures related to site-specific credits for system improvements are addressed in the ordinance that establishes the City's fees. Project improvements normally required as part of the development approval process are not eligible for credits against development fees.

## Figure 17: Transportation Development Fee Calculation Factors

| *Vehicle Trips Per Unit* | *Residential* | *Commercial/ Shopping Center* | *All Other Nonresidential* |
|---|---|---|---|
| Single Family | 9.57 | | |
| Multi-Family | 6.59 | | |
| All Other Types of Housing | 4.99 | | |
| ***Weekday Vehicle Trip Ends per 1,000 Sq Ft/Hotel Room*** | | | |
| Com / Shop Ctr less than 100,000 SF | | 67.91 | |
| Com / Shop Ctr 100,001-200,000 SF | | 53.28 | |
| Com / Shop Ctr over 200,001 SF | | 41.80 | |
| Office /Inst less than 100,000 SF | | | 13.34 |
| Office /Inst 100,001 to 200,000 SF | | | 11.37 |
| Office /Inst over 200,001 SF | | | 9.70 |
| Business Park | | | 12.76 |
| Light Industrial | | | 6.97 |
| Warehousing | | | 4.96 |
| Manufacturing | | | 3.82 |
| Hotel (per room) | | | 5.63 |
| ***Trip Adjustment Factors*** | | | |
| Residential Trip Adjustment Factors | 56% | | |
| Com / Shop Ctr less than 100,000 SF | | 33% | |
| Com / Shop Ctr 100,001-200,000 SF | | 36% | |
| Com / Shop Ctr over 200,001 SF | | 39% | |
| All Other Nonresidential Development | | | 50% |
| ***Cost Summary*** | | | |
| Average Trip Length (miles) | 1.31 | 1.31 | 1.31 |
| Average Trip Length Adjustment | 122% | 68% | 75% |
| Road Network Improve. Capital Cost Per VMT | $312.20 | $312.20 | $312.20 |
| **Road Network Improve. Capital Cost per Ave. Length Trip** | **$498.96** | **$278.11** | **$306.74** |
| Average Trip Length (miles) | 1.31 | 1.31 | 1.31 |
| Average Trip Length Adjustment | 122% | 68% | 75% |
| Interchange Capital Cost Per VMT | $72.98 | $72.98 | $72.98 |
| **Interchange Capital Cost per Ave. Trip Length** | **$116.64** | **$65.01** | **$71.70** |
| **Street Support Vehicle/Equip Cost Per Trip** | **$15.13** | **$15.13** | **$15.13** |
| **Development Fee Study Cost Per Trip** | **$0.31** | **$0.31** | **$0.31** |
| **Net Capital Cost Per Trip** | **$631.04** | **$358.56** | **$393.88** |

The input variables listed above are used to derive the development fees shown in Figure 18 below. The development fees are the product of the trip generation rates multiplied by the trip adjustment factors multiplied by the net capital cost per trip. For example, the Transportation Development Fee for a single-family detached house is 9.57 multiplied by 0.56 multiplied by $631.04, which equals $3,356 per unit.

## Figure 18: Transportation Development Fee Schedule

| ***Development Fees*** | | | |
|---|---|---|---|
| Residential (per housing unit) | *Residential* | *Commercial/ Shopping Center* | *All Other Nonresidential* |
| Single Family | $3,356 | | |
| Multi-Family | $2,311 | | |
| All Other Types of Housing | $1,750 | | |
| Nonresidential (per 1,000 Sq Ft/Hotel Room) | | | |
| Com / Shop Ctr less than 100,000 SF | | $8,035 | |
| Com / Shop Ctr 100,001-200,000 SF | | $6,877 | |
| Com / Shop Ctr over 200,001 SF | | $5,845 | |
| Office /Inst less than 100,000 SF | | | $2,627 |
| Office /Inst 100,001 to 200,000 SF | | | $2,239 |
| Office /Inst over 200,001 SF | | | $1,910 |
| Business Park | | | $2,513 |
| Light Industrial | | | $1,373 |
| Warehousing | | | $977 |
| Manufacturing | | | $752 |
| Hotel (per room) | | | $1,109 |

## Implementation and Administration

As specified in the Development Fees Act, there are certain accounting requirements that must be met by the City. Monies received shall be placed in a separate fund and accounted for separately and may only be used for the purposes authorized by ARS 9-463.05. Interest earned on monies in the separate fund shall be credited to the fund.

The City will prepare an annual report that will keep government and private sector leaders informed of the performance of development fees. The report will contain basic information such as the revenue generated by each type of public facility. At the time of the annual report, suggested improvements can be acted upon and necessary updates incorporated in the adopted ordinance.

All costs in the development fee calculations are given in current dollars with no assumed inflation rate over time. Necessary cost adjustments can be made as part of the recommended annual evaluation and update of development fees. One approach is to adjust for inflation in construction costs by means of an index like the one published by Marshall-Swift Valuation Service, R.S. Means, or Engineering News Record *Construction Cost Index*. This index could be applied against the calculated development fee. If cost estimates change significantly the City should redo the fee calculations.

Residential development categories are based on data from the 2000 U.S. Census Summary File 3 for Casa Grande. Specifically:

> ***Single Family*** – units in structure: 1-detached and 1-attached, owner and renter occupied.
>
> ***Multi-Family*** – units in structure: 2, 3 - 4, 5 – 9, 10 – 19, 20 – 49, 50 or more, owner and renter occupied.
>
> ***All Other Housing Types*** – units in structure: mobile homes, other, owner and renter occupied.

Nonresidential development categories are based on land use classifications from the book *Trip Generation Manual* (ITE, 2003). A summary description of each development category is provided below.

> ***Shopping Center*** (820) – A shopping center is an integrated group of commercial establishments that is planned, developed, owned and managed as a unit. A shopping center provides on-site parking facilities sufficient to serve its own parking demands. Shopping centers may contain non-merchandizing facilities, such as office buildings, movie theaters, restaurants, post offices, banks, health clubs and recreational facilities. In addition to the integrated unit of shops in one building or enclosed around a mall, many shopping centers include out-parcels. For smaller centers without an enclosed mall or peripheral buildings, the Gross Leasable Area (GLA) may be the same as the Gross Floor Area (GFA) of the building.

***General Office*** (710) – A general office building houses multiple tenants including, but not limited to, professional services, insurance companies, investment brokers and tenant services such as banking, restaurants and service retail facilities. In the development fees study, this category is used as a proxy for institutional uses that may have more specific land use codes.

***Hospital*** (610) – A hospital is any institution where medical or surgical care and overnight accommodations are provided to non-ambulatory and ambulatory patients. However, the term "hospital" does not refer to medical clinics (facilities that provide diagnoses and outpatient care only) or to nursing homes (facilities devoted to the care of persons unable to care for themselves).

***Business Park*** (770) – Business parks consist of a group of flex-type buildings served by a common roadway system. The tenant space lends itself to a variety of uses, with the rear side of the building usually served by a garage door. The tenant space includes a variety of uses with an average mix of 20 to 30 percent office/commercial and 70 to 80 percent industrial/warehousing.

***Light Industrial*** (110) – Light industrial facilities usually employ fewer than 500 persons and have an emphasis on activities other than manufacturing. Typical light industrial activities include, but are not limited to printing plants, material-testing laboratories and assembling of data processing equipment.

***Warehousing*** (150) – Warehouses are primarily devoted to the storage of materials.

***Manufacturing*** (140) – In manufacturing facilities, the primary activity is the conversion of raw materials or parts into finished products.

***Hotel (320) -*** A place of lodging that provides sleeping accommodations and often a restaurant. They offer free on-site parking and provide little or no meeting space and few (if any) supporting facilities.

For development types not shown above, City staff may use the most appropriate rates from the ITE manual or rates from approved local transportation studies or observed data.

# Appendix A – Demographic Estimates and Development Projections

TischlerBise recently updated the City's development fees in 2007. The demographic estimates and development projections used in that study have been "aged" ahead for the time horizon of FY2011 – FY2031 for the Transportation IIP and revised development fees. The current estimates and projections of housing units by type and nonresidential square footage by type are listed below since these are the demand units upon which trips and VMT's are calculated. The "current" estimates are for FY2010 (beginning July 1, 2009) since this the earliest fiscal year in which the City might start building the planned transportation projects.

A note on rounding: Calculations throughout this report are based on analysis conducted using Excel software. Results are discussed in the report using one-and two-digit places (in most cases), which represent rounded figures. However, the analysis itself uses figures carried to their ultimate decimal places; therefore the sums and products generated in the analysis may not equal the sum or product if the reader replicates the calculation with the factors shown in the report (due to the rounding of figures shown, not due to rounding in the analysis).

## HOUSING UNIT PROJECTIONS

TischlerBise prepared housing unit projection alternatives shown in Figure A-1 for FY2007-FY2027. TischlerBise produced four different housing unit projections utilizing different projection methodologies: exponential, linear, logarithmic curve, and linear trend extrapolation. TischlerBise recommends the linear trend extrapolation methodology which closely resembles the average number of residential building permits issued during the last three fiscal years.

**Figure A-1: Housing Unit Projections**

| | | | | | | | | | | | *5 Year Increments* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual | Base | Fiscal Year | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | **2010** | 2011 | 2012 | 2017 | 2022 | 2027 | Average |
| Change | Value | | | | | | projection years (x) => | | | | | | | | Annual |
| (a) | (b) | Method | | | | | 1 | 2 | **3** | 4 | 5 | 10 | 15 | 20 | Increase |
| 11.0% | 18,489 | Exponential | 13,516 | 14,556 | 16,276 | 18,489 | 20,522 | 22,780 | **25,285** | 28,067 | 31,154 | 52,497 | 88,460 | 149,060 | 6,529 |
| 12.3% | 18,489 | Linear | 13,516 | 14,556 | 16,276 | 18,489 | 20,763 | 23,037 | **25,311** | 27,585 | 29,859 | 41,229 | 52,600 | 63,970 | 2,274 |
| 9.0% | 18,489 | Logarithmic | 13,516 | 14,556 | 16,276 | 18,489 | 19,646 | 20,323 | **20,803** | 21,176 | 21,480 | 22,492 | 23,118 | 23,572 | 254 |
| 4.7% | | Linear Trend Extrap* | 13,516 | 14,556 | 16,276 | 18,489 | 20,153 | 21,817 | **23,481** | 25,145 | 26,809 | 35,129 | 43,449 | 51,769 | 1,664 |
| | | | Past Buidling Permit Activity | | | | Additional Annual Units under recommended methodology | | | | | | | | |
| | | | | 1,040 | 1,720 | 2,213 | 1,664 | 1,664 | **1,664** | 1,664 | 1,664 | 1,664 | 1,664 | | |
| | | | | | 3 Year Ave. => | 1,658 | | | | | | | | | |

* Recommended Methodology

TischlerBise used the distribution of recent residential building permits to project the type of new housing units in Figure A-1. Single family detached units are projected to total 95%, multi-family 1%, and all other types of housing the remaining 4%. Future housing units by type are projected in Figure A-2 below.

**Figure A-2: Housing Unit Projections by Type**

| | | | | | | | 5 Year Increments | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *FY* | *2007* | *2008* | *2009* | ***2010*** | *2011* | *2012* | *2017* | *2022* | *2027* |
| Housing Units* | | 18,489 | 20,153 | 21,817 | **23,481** | 25,145 | 26,809 | 35,129 | 43,449 | 51,769 |
| *Housing Unit Projections by Type* | | | | | | | 5 Year Increments | | | |
| | *FY* | *2007* | *2008* | *2009* | ***2010*** | *2011* | *2012* | *2017* | *2022* | *2027* |
| | *Future Housing %* | | | | | | | | | |
| Single Family Detached | 95% | 13,059 | 14,640 | 16,222 | **17,803** | 19,385 | 20,966 | 28,873 | 36,780 | 44,687 |
| Multi-family | 1% | 3,312 | 3,328 | 3,344 | **3,360** | 3,377 | 3,393 | 3,473 | 3,554 | 3,634 |
| All Other Housing Types | 4% | 2,117 | 2,184 | 2,250 | **2,317** | 2,383 | 2,450 | 2,782 | 3,115 | 3,447 |
| TOTAL | | 18,489 | 20,153 | 21,817 | **23,481** | 25,145 | 26,809 | 35,129 | 43,449 | 51,769 |

## NONRESIDENTIAL MULTIPLIERS

In addition to data on residential development, the calculation of development fees requires data on nonresidential construction in Casa Grande. To convert employment projections to gross floor area of nonresidential development, average square feet per employee multipliers are used. The multipliers shown in Figure A-3 are derived from national data published by the Institute of Transportation Engineers (ITE) and the Urban Land Institute (ULI).

These multipliers are also used to calculate the number of average weekday vehicle trips from nonresidential development in Casa Grande.

### Figure A-3: Floor Area per Employee and Nonresidential Trip Rates

| *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* |
|---|---|---|---|---|---|---|
| ***Commercial / Shopping Center**** | | | | | | |
| 820 | 25K gross leasable area | 1,000 Sq Ft | 110.32 | na | 3.33 | 300 |
| 820 | 50K gross leasable area | 1,000 Sq Ft | 86.56 | na | 2.86 | 350 |
| **820** | **100K gross leasable area** | **1,000 Sq Ft** | **67.91** | **na** | **2.50** | **400** |
| 820 | 200K gross leasable area | 1,000 Sq Ft | 53.28 | na | 2.22 | 450 |
| 820 | 400K gross leasable area | 1,000 Sq Ft | 41.80 | na | 2.00 | 500 |
| *General Office**** | | | | | | |
| 710 | 10K gross floor area | 1,000 Sq Ft | 22.66 | 5.06 | 4.48 | 223 |
| 710 | 25K gross floor area | 1,000 Sq Ft | 18.35 | 4.43 | 4.15 | 241 |
| 710 | 50K gross floor area | 1,000 Sq Ft | 15.65 | 4.00 | 3.91 | 256 |
| **710** | **100K gross floor area** | **1,000 Sq Ft** | **13.34** | **3.61** | **3.69** | **271** |
| *Industrial* | | | | | | |
| 770 | Business Park***** | 1,000 Sq Ft | 12.76 | 4.04 | 3.16 | 317 |
| 151 | Mini-Warehouse | 1,000 Sq Ft | 2.50 | 56.28 | 0.04 | 22,512 |
| 150 | Warehousing | 1,000 Sq Ft | 4.96 | 3.89 | 1.28 | 784 |
| **140** | **Manufacturing** | **1,000 Sq Ft** | **3.82** | **2.13** | **1.79** | **558** |
| 110 | Light Industrial | 1,000 Sq Ft | 6.97 | 3.02 | 2.31 | 433 |
| ***Examples of Other Nonresidential Land Uses*** | | | | | | |
| 720 | Medical-Dental Office | 1,000 Sq Ft | 36.13 | 8.91 | 4.05 | 247 |
| 730 | Government Office Building | 1,000 Sq Ft | 68.93 | 11.95 | 5.77 | 173 |
| 620 | Nursing Home | bed | 2.37 | 6.55 | 0.36 | na |
| 610 | Hospital | 1,000 Sq Ft | 17.57 | 5.20 | 3.38 | 296 |
| 565 | Day Care | student | 4.48 | 28.13 | 0.16 | na |
| 530 | High School | student | 1.71 | 19.74 | 0.09 | na |
| 522 | Middle School/Junior High School | student | 1.62 | na | na | na |
| 520 | Elementary School | student | 1.29 | 15.71 | 0.08 | na |
| 520 | Elementary School | 1,000 Sq Ft | 14.49 | 15.71 | 0.92 | 1,084 |
| 320 | Motel | room | 5.63 | 12.81 | 0.44 | na |

* Trip Generation, Institute of Transportation Engineers, 2003.

** 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.

*** Trip rates for Commercial/Shopping Center by size derived using the formula Ln(T)=0.65Ln(X)+5.83, where T=average weekday trip ends and X=1,000 square feet gross leasable area. Taken from Trip Generation, Institute of Transportation Engineers, 2003.

**** Trip rates for General Office by size derived using the formula Ln(T)=0.77Ln(X)+3.65, where T=average weekday trip ends and X=1,000 square feet gross leasable area. Taken from Trip Generation, Institute of Transportation Engineers, 2003.

***** 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 SQUARE FOOTAGE & JOB PROJECTIONS

Figure A-4 lists the projected type of nonresidential square footage over the next twenty years.

To project the amount of nonresidential square footage by type, TischlerBise used nonresidential permit data from the last three years for each category to determine the average amount of square footage to be added annually.

### Figure A-4: Nonresidential Square Footage by Type Projections

| *Nonresidential Square Footage Projections (1,000's)* | | | | | | | *5 Year Increments* | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *FY* | *2007* | *2008* | *2009* | ***2010*** | *2011* | *2012* | *2017* | *2022* | *2027* |
| | *Ave. SF Added** | | | | | | | | | |
| Retail/Commercial | 236,667 | 2,759 | 2,996 | 3,232 | **3,469** | 3,706 | 3,942 | 5,126 | 6,309 | 7,492 |
| Office/Institutional | 66,667 | 1,581 | 1,648 | 1,714 | **1,781** | 1,848 | 1,914 | 2,248 | 2,581 | 2,914 |
| Industrial Flex | 221,000 | 2,578 | 2,799 | 3,020 | **3,241** | 3,462 | 3,683 | 4,788 | 5,893 | 6,998 |
| TOTAL | | 6,918 | 7,442 | 7,967 | **8,491** | 9,015 | 9,540 | 12,161 | 14,783 | 17,405 |

## SUMMARY OF DEVELOPMENT PROJECTIONS FY2010-FY2031

Annual development projections for the development fee study are summarized in Figure A-5 below. Casa Grande is projected to add approximately 1,581 single family detached units, 16 multi-family units, and 66 other types of housing units per year. In addition to these annual residential development projections, the City is projected to also add 237,000 square feet of retail/commercial development, 67,000 square feet of office/institutional development, and 221,000 square feet of industrial/flex square footage per year. However, actual nonresidential construction is often built in irregular intervals compared to residential development, with minor construction followed by large-scale projects.

### Figure A-5: Development Projections FY2010-FY2031

| | | | | | | | *5 Year Increments* | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *Fiscal Year =>* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | *2016* | *2021* | *2026* | *2031* |
| **RESIDENTIAL** | | | | | | | | | | |
| TOTAL HOUSING UNITS | | | | | | | | | | |
| Single Family Detached | 17,803 | 19,385 | 20,966 | 22,547 | 24,129 | 25,710 | 27,292 | 35,199 | 43,106 | 51,011 |
| Multi-family | 3,360 | 3,377 | 3,393 | 3,409 | 3,425 | 3,441 | 3,457 | 3,537 | 3,618 | 3,698 |
| All Other Housing Types | 2,317 | 2,383 | 2,450 | 2,516 | 2,583 | 2,649 | 2,716 | 3,048 | 3,381 | 3,711 |
| | | | | | | | | | | |
| UNITS ADDED ANNUALLY | | | | | | | | | | |
| Single Family Detached | 1,581 | 1,581 | 1,581 | 1,581 | 1,581 | 1,581 | 1,581 | 1,581 | 1,581 | |
| Multi-family | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | |
| All Other Housing Types | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | |
| | | | | | | | | | | |
| **NONRESIDENTIAL** | | | | | | | | | | |
| TOTAL 1,000's SQUARE FEET | | | | | | | | | | |
| Retail/Commercial | 3,469 | 3,706 | 3,942 | 4,179 | 4,416 | 4,652 | 4,889 | 6,072 | 7,256 | 8,440 |
| Office/Institutional | 1,781 | 1,848 | 1,914 | 1,981 | 2,048 | 2,114 | 2,181 | 2,514 | 2,848 | 3,182 |
| Industrial Flex | 3,241 | 3,462 | 3,683 | 3,904 | 4,125 | 4,346 | 4,567 | 5,672 | 6,777 | 7,882 |
| | | | | | | | | | | |
| 1,000's SQUARE FEET ADDED ANNUALLY | | | | | | | | | | |
| Retail/Commercial | 237 | 237 | 237 | 237 | 237 | 237 | 237 | 237 | 237 | |
| Office/Institutional | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | |
| Industrial Flex | 221 | 221 | 221 | 221 | 221 | 221 | 221 | 221 | 221 | |

# Appendix B – Cash Flow Analysis

This cash flow analysis is based on the IIP's, development fees, and methodologies plus the demographic and development projections in Appendix A. FY2010 (beginning July 1, 2009) is the first projection year (note: all figures are in thousands of dollars).

This cash flow analysis is based on several assumptions:

- 100% of all future residential and nonresidential development will pay 100% of the proposed development fees.
- Future development will occur at the pace and magnitude outlined in the demographic and development projects in Appendix A of the development fee report.

To the extent these assumptions change, the cash flow analysis will change correspondingly. Also, the cash flow analysis is based on the proposed fees and LOS over a six year time frame. Goodyear updates its development fees on a regular basis and thus, it is likely the fee amounts, LOS, and methodologies will change over the course of the cash flow analysis.

# TRANSPORTATION CASH FLOW ANALYSIS

The cash flow summary below indicates total revenues of approximately $38.5 million over the next six years. The deficits shown at the bottom of the tables are the result of three factors. First, as noted in the SATS, several of the planned projects require funding from other entities such as ADOT or Pinal County. Second, several of the planned projects are the result of both existing and new development. Development fees will pay for new development's proportionate share of these projects while existing development's share will need to be funded from non-development fee revenues. The third explanation for the deficits is the timing of the construction of the planned interchanges being built with excess capacity for future development, while the cash flow analysis is only for six years. Under this assumption, future development fees will be used to repay the City for oversizing these facilities using the buy-in methodology.

## Figure B-1: Transportation Development Fee Cash Flow

**DEVELOPMENT PROJECTIONS**

| *Fiscal Year* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | *2016* |
|---|---|---|---|---|---|---|---|
| Projected Residential Units | | | | | | | |
| Single Family Detached | 17,803 | 19,385 | 20,966 | 22,547 | 24,129 | 24,129 | 25,710 |
| Multi-family | 3,360 | 3,377 | 3,393 | 3,409 | 3,425 | 3,425 | 3,441 |
| All Other Types | 2,317 | 2,383 | 2,450 | 2,516 | 2,583 | 2,583 | 2,649 |
| Projected Nonresidential Square Footage by Type (1,000's) | | | | | | | |
| Retail/Commercial | 3,469 | 3,706 | 3,942 | 4,179 | 4,416 | 4,416 | 4,652 |
| Office/Institutional | 1,781 | 1,848 | 1,914 | 1,981 | 2,048 | 2,048 | 2,114 |
| Industrial Flex | 3,241 | 3,462 | 3,683 | 3,904 | 4,125 | 4,125 | 4,346 |
| | | | | | | | |
| Net Increase Units | | | | | | | *TOTAL* |
| Single Family Detached | 1,581 | 1,581 | 1,581 | 1,581 | 1,581 | 1,581 | 9,489 |
| Multi-family | 16 | 16 | 16 | 16 | 16 | 16 | 97 |
| All Other Types | 66 | 66 | 66 | 66 | 66 | 66 | 399 |
| Net Increase 1,000's Square Feet | | | | | | | *TOTAL* |
| Retail/Commercial | 237 | 237 | 237 | 237 | 237 | 237 | 1,420 |
| Office/Institutional | 67 | 67 | 67 | 67 | 67 | 67 | 400 |
| Industrial Flex | 221 | 221 | 221 | 221 | 221 | 221 | 1,326 |

**PROJECTED TRANSPORTATION DEVELOPMENT FEE REVENUE**

| *Fiscal Year* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | *TOTAL* |
|---|---|---|---|---|---|---|---|
| Single Family Detached | $5,308,016 | $5,308,016 | $5,308,016 | $5,308,016 | $5,308,016 | $5,308,016 | $31,848,098 |
| Multi-family | $37,182 | $37,182 | $37,182 | $37,182 | $37,182 | $37,182 | $223,091 |
| All Other Types | $116,372 | $116,372 | $116,372 | $116,372 | $116,372 | $116,372 | $698,229 |
| Retail/Commercial | $1,901,714 | $1,901,714 | $1,901,714 | $1,901,714 | $1,901,714 | $1,901,714 | $11,410,285 |
| Office/Institutional | $175,145 | $175,145 | $175,145 | $175,145 | $175,145 | $175,145 | $1,050,872 |
| Industrial Flex | $166,261 | $166,261 | $166,261 | $166,261 | $166,261 | $166,261 | $997,564 |
| **TOTAL TRANSPORTATION DEV. FEE REVENUE** | **$7,704,690** | **$7,704,690** | **$7,704,690** | **$7,704,690** | **$7,704,690** | **$7,704,690** | **$38,523,449** |

**TRANSPORTATION INFRASTRUCTURE IMPROVEMENTS PLAN**

| *Fiscal Year* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | *TOTAL* |
|---|---|---|---|---|---|---|---|
| Cottonwood Ln: Peart Rd to Sunland Gin Rd Phase I | $17,246,500 | $0 | $0 | $0 | $0 | $0 | $17,246,500 |
| Peart/McCartney intersection | $3,000,000 | $0 | $0 | $0 | $0 | $0 | $3,000,000 |
| Cottonwood Phase 2 | $0 | $17,246,500 | $0 | $0 | $0 | $0 | $17,246,500 |
| Peart/Kortsen intersection | $0 | $3,000,000 | $0 | $0 | $0 | $0 | $3,000,000 |
| Kortsen Rd: Pinal Ave to I-10 Phase I | $0 | $0 | $15,582,500 | $0 | $0 | $0 | $15,582,500 |
| Kortsen/Pinal intersection | $0 | $0 | $3,000,000 | $0 | $0 | $0 | $3,000,000 |
| Kortsen Rd. Phase II | $0 | $0 | $0 | $15,582,500 | $0 | $0 | $15,582,500 |
| Hacienda/Cottonwood Intersection | $0 | $0 | $0 | $3,000,000 | $0 | $0 | $3,000,000 |
| Hacienda/Kortsen Intersection | $0 | $0 | $0 | $0 | $3,000,000 | $0 | $3,000,000 |
| Kortsen Interchange Phase I | $0 | $0 | $0 | $0 | $15,000,000 | $0 | $15,000,000 |
| Kortsen Interchange Phase II | $0 | $0 | $0 | $0 | $0 | $15,000,000 | $15,000,000 |
| Support Vehicles and Equipment | $226,820 | $226,820 | $226,820 | $226,820 | $226,820 | $226,820 | $1,360,921 |
| IIP and Development Fee Study | $4,667 | $4,667 | $4,667 | $4,667 | $4,667 | $4,667 | $28,000 |
| **TOTAL TRANSPORTATION CAPITAL EXPENDITURES** | **$20,477,987** | **$20,477,987** | **$18,813,987** | **$18,813,987** | **$18,231,487** | **$15,231,487** | **$112,046,921** |

| | | | | | | |
|---|---|---|---|---|---|---|
| Annual Surplus/(Deficit) | ($12,773,297) | ($12,773,297) | ($11,109,297) | ($11,109,297) | ($10,526,797) | ($7,526,797) |
| Cumulative Surplus/(Deficit) | ($12,773,297) | ($25,546,594) | ($36,655,891) | ($47,765,188) | ($58,291,985) | ($65,818,782) |