

Streets Capital Improvements Program for New Growth and Development Fee Study

Prepared for:



May 24, 2006

Prepared by:

TischlerBise
Fiscal, Economic & Planning Consultants

Table of Contents

EXECUTIVE SUMMARY	4
DEVELOPMENT FEE REQUIREMENTS	4
<i>U.S. Constitutional Requirements</i>	4
<i>State Requirements</i>	5
Figure 1: Schedule of Streets Development Fees by Impact Fee Areas	7
STREETS CAPITAL IMPROVEMENTS PLAN	8
METHODOLOGY	8
Figure 2: Pinal County Impact Fee Areas.....	9
ARTERIAL STREETS.....	10
Figure 3: Summary 10 Year Arterial Streets Capital Improvements Program	10
IFA 1	11
Figure 4: Planned Arterial Streets IFA 1.....	12
Trip Generation Rates	12
Adjustment for Journey-To-Work Commuting	12
Adjustment for Pass-By Trips	13
Figure 5: Shopping Center/Retail Trip Rates and Adjustment Factors.....	13
Average Trip Length Adjustment by Land Use.....	13
Vehicle Miles of Travel on Planned Arterial Streets Allocated to Entire IFA 1.....	14
Figure 6: IFA 1 Arterial Street Capacity Analysis – Municipalities and Unincorporated County.....	14
<i>Cost per VMT for Planned Arterial Streets Allocated to Entire IFA 1</i>	15
Figure 7: Planned Arterial Street Improvements Allocated to Entire IFA 1 – Marginal Approach	15
Vehicle Miles of Travel on Planned Arterial Streets Allocated to Unincorporated IFA 1.....	15
Figure 8: IFA 1 Arterial Street Capacity Analysis – Unincorporated County.....	16
<i>Cost per VMT for Planned Arterial Streets Allocated to Unincorporated IFA 1</i>	16
Figure 9: Planned Arterial Street Improvements Allocated to Unincorporated IFA 1 – Marginal Approach.....	16
IFA 2	17
Figure 10: Planned Arterial Streets IFA 2.....	17
Vehicle Miles of Travel on Planned Arterial Streets Allocated to Entire IFA 2.....	17
Figure 11: IFA 2 Arterial Street Capacity Analysis – Municipalities and Unincorporated County.....	18
<i>Cost per VMT for Planned Arterial Streets Allocated to Entire IFA 2</i>	18
Figure 12: Planned Arterial Street Improvements Allocated to Entire IFA 2 – Marginal Approach	18
Vehicle Miles of Travel on Planned Arterial Streets Allocated to Unincorporated IFA 2.....	19
Figure 13: IFA 2 Arterial Street Capacity Analysis –Unincorporated County.....	19
<i>Cost per VMT for Planned Arterial Streets Allocated to Unincorporated IFA 2</i>	20
Figure 14: Planned Arterial Street Improvements Allocated to Unincorporated IFA 2 – Average Approach.....	20
IFA 3	20
Figure 15: Planned Arterial Streets IFA 3.....	20
Vehicle Miles of Travel on Planned Arterial Streets Allocated to Entire IFA 3.....	20
Figure 16: IFA 3 Arterial Street Capacity Analysis – Municipalities and Unincorporated County.....	21
<i>Cost per VMT for Planned Arterial Streets Allocated to Entire IFA 3</i>	21
Figure 17: Planned Arterial Street Improvements Allocated to Entire IFA 3 – Marginal Approach	22
IFA 4	22
Figure 18: Planned Arterial Streets IFA 4.....	22
Vehicle Miles of Travel on Planned Arterial Streets Allocated to Entire IFA 4.....	22
Figure 19: IFA 4 Arterial Street Capacity Analysis – Municipalities and Unincorporated County.....	23
<i>Cost per VMT for Planned Arterial Streets Allocated to Entire IFA 4</i>	23
Figure 20: Planned Arterial Street Improvements Allocated to Entire IFA 4 – Average Approach	23
IFA 5, 6, 7	24
Figure 21: Planned Arterial Streets IFA 5, 6, 7.....	24
Vehicle Miles of Travel on Planned Arterial Streets Allocated to Entire IFA 5, 6, 7	24
Figure 22: IFA 5, 6, 7 Arterial Street Capacity Analysis – Municipalities and Unincorporated County	25
<i>Cost per VMT for Planned Arterial Streets Allocated to Entire IFA 5, 6, 7</i>	25
Figure 23: Planned Arterial Street Improvements Allocated to Entire IFA 5, 6, 7 – Marginal Approach.....	25
Vehicle Miles of Travel on Planned Arterial Streets Allocated to Unincorporated IFA 5, 6, 7.....	26
Figure 24: IFA 5, 6, 7 Arterial Street Capacity Analysis –Unincorporated County	26

STREETS CIP FOR NEW GROWTH AND DEVELOPMENT FEES – PINAL COUNTY, ARIZONA

<i>Cost per VMT for Planned Arterial Streets Allocated to Unincorporated IFA 5, 6, 7</i>	27
Figure 25: Planned Arterial Street Improvements Allocated to Unincorporated IFA 5, 6, 7 – Average Approach.....	27
STREET SUPPORT FACILITIES.....	27
<i>Planned LOS Analysis</i>	27
Figure 26: Current LOS Analysis for Street Support Facilities.....	28
<i>Planned Cost Analysis</i>	28
Figure 27: Street Support Facilities Cost Standards.....	29
<i>CIP for Street Support Facilities</i>	29
Figure 28: 5 Year CIP for Street Support Facilities by IFA.....	30
STREET SUPPORT VEHICLES & EQUIPMENT.....	31
<i>Planned LOS Analysis</i>	31
Figure 29: Current LOS Analysis for Street Support Vehicles & Equipment.....	32
<i>Planned Cost Analysis</i>	33
Figure 30: Street Support Vehicles & Equipment Cost Standards.....	34
<i>CIP for Street Support Facilities</i>	35
Figure 31: 5 Year CIP for Street Support Vehicles & Equipment by IFA.....	36
CIP AND DEVELOPMENT FEE STUDY.....	37
STREETS DEVELOPMENT FEES.....	38
IFA 1 STREETS DEVELOPMENT FEES.....	38
Figure 32: Streets Development Fee Demand and Cost Summary – IFA 1.....	39
Figure 33: Streets Development Fee Schedule – IFA 1.....	40
IFA 2 STREETS DEVELOPMENT FEES.....	40
Figure 34: Streets Development Fee Demand and Cost Summary – IFA 2.....	41
Figure 35: Streets Development Fee Schedule – IFA 2.....	42
IFA 3 STREETS DEVELOPMENT FEES.....	42
Figure 36: Streets Development Fee Demand and Cost Summary – IFA 3.....	43
Figure 37: Streets Development Fee Schedule – IFA 3.....	44
IFA 4 STREETS DEVELOPMENT FEES.....	44
Figure 38: Streets Development Fee Demand and Cost Summary – IFA 4.....	45
Figure 39: Streets Development Fee Schedule – IFA 4.....	46
IFA 5, 6, 7 STREETS DEVELOPMENT FEES.....	46
Figure 40: Streets Development Fee Demand and Cost Summary – IFA 5, 6, 7.....	47
Figure 41: Streets Development Fee Schedule – IFA 5, 6, 7.....	48
STREETS CIP AND DEVELOPMENT FEE CASH FLOW ANALYSIS.....	49
IFA 1.....	50
IFA 2.....	51
IFA 3.....	51
IFA 4.....	52
IFA 5, 6, 7.....	52
IMPLEMENTATION AND ADMINISTRATION.....	53

Executive Summary

Pinal County has contracted with TischlerBise to calculate a capital improvements program (CIP) and resulting development fees for streets.

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 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 concerns are echoed in the state enabling legislation for counties to assess development fees. Development fees for counties in Arizona are authorized by Arizona Revised Statutes (A.R.S.) 11-102. Specifically:

A. If a county has adopted a capital improvements plan, the county may assess development fees within the covered planning area in order to offset the capital costs for water, sewer, streets, parks and public safety facilities determined by the plan to be necessary for public services provided by the county to a development in the planning area.

B. Development fees assessed 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 shall be placed in a separate fund and accounted for separately and may only be used for the purposes authorized by this section. Interest earned on monies in the separate fund shall be credited to the fund.*
- 3. The county shall prescribe the schedule for paying the development fees. The county shall provide a credit toward the payment of the fee for the required dedication of public sites and improvements provided by the developer for which that fee is assessed. The developer of residential dwelling units shall be required to pay the fees when construction permits for the dwelling units are issued.*
- 4. The amount of any development fees must bear a reasonable relationship to the burden of capital costs imposed on the county to provide additional necessary public services to the*

development. In determining the extent of the burden imposed by the development, the county shall consider, among other things, the contribution made or to be made in the future in cash by taxes, fees or assessments by the property owner toward the capital costs of the necessary public service covered by the development fee.

5. Development 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 county 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. Before assessing or increasing a development fee, the county shall:

1. Give at least one hundred twenty days' advance notice of intention to assess a new or increased development fee.

2. Release to the public a written report including all documentation that supports the assessment of a new or increased development fee.

3. Conduct a public hearing on the proposed new or increased development fee at any time after the expiration of the one hundred twenty day notice of intention to assess a new or increased development fee and at least fourteen days before the scheduled date of adoption of the new or increased fee.

D. A development fee assessed pursuant to this section is not effective for at least ninety days after its formal adoption by the board of supervisors.

E. This section does not affect any development fee adopted before the effective date of this section.

In accordance with state law, this report includes a CIP for streets that are the result of new growth (Note: this CIP does not include projects related to routine maintenance and replacement of existing capital facilities and assets, nor does it include projects which solely address existing capacity deficiencies). The CIP shows that the capital facilities for which the Streets Development Fee are prepared are a consequence of new development, the fees are proportionate and reasonably related to the capital facility service demands of new development and that development fees will substantially benefit new development. The County can use this information to update its CIP as needed in order to ensure the requirements of state law are met.

Figure 1 provides a schedule of the Streets Development Fees for unincorporated Pinal County. In order to better meet the requirements of rational nexus and state law, TischlerBise recommends the County collect and expend these funds based on the impact fee areas (IFA's) in Figure 1 (this is discussed in more detail below). Development fees for residential development will be assessed per housing unit and nonresidential development fees will be assessed per square foot of floor area or per hotel room. The County may adopt fees that are less than the amounts shown. However, a reduction in development fee revenue will necessitate an increase in other revenues, or a decrease in planned capital expenditures.

Figure 1: Schedule of Streets Development Fees by Impact Fee Areas

<i>Development Fees</i>		<i>IFA 1</i>	<i>IFA 2</i>	<i>IFA 3</i>	<i>IFA 4</i>	<i>IFA 5, 6, 7</i>
<i>Residential (per housing unit)</i>						
210	Single Family	\$7,850	\$7,918	\$6,917	\$5,967	\$7,173
240	All Other Types of Housing	\$4,093	\$4,128	\$3,607	\$3,111	\$3,740
<i>Nonresidential Per Square Foot of Floor Area/Hotel Room</i>						
820	Commercial / Shopping Center 25,000 SF or less	\$26.26	\$26.48	\$23.26	\$20.21	\$24.08
820	Commercial / Shopping Center 25,001-50,000 SF	\$22.81	\$23.00	\$20.21	\$17.56	\$20.92
820	Commercial/Shopping Center 50,001-100,000 SF	\$19.05	\$19.21	\$16.87	\$14.66	\$17.47
820	Commercial/Shopping Center 100,001-200,000 SF	\$16.30	\$16.44	\$14.44	\$12.55	\$14.95
820	Commercial/Shopping Center over 200,000 SF	\$13.86	\$13.97	\$12.27	\$10.66	\$12.71
710	Office 10,000 SF or less	\$10.53	\$10.62	\$9.32	\$8.08	\$9.65
710	Office 10,001-25,000 SF	\$8.53	\$8.60	\$7.54	\$6.55	\$7.81
710	Office 25,001-50,000 SF	\$7.27	\$7.33	\$6.43	\$5.58	\$6.66
710	Office 50,001-100,000 SF	\$6.20	\$6.25	\$5.48	\$4.76	\$5.68
710	Office 100,000 SF	\$5.28	\$5.33	\$4.67	\$4.05	\$4.84
770	Business Park	\$5.93	\$5.98	\$5.25	\$4.55	\$5.43
110	Light Industrial	\$3.24	\$3.26	\$2.86	\$2.48	\$2.97
150	Warehousing	\$2.30	\$2.32	\$2.04	\$1.77	\$2.11
140	Manufacturing	\$1.77	\$1.79	\$1.57	\$1.36	\$1.62
310	Hotel (per room)	\$2,618	\$2,640	\$2,316	\$2,010	\$2,399

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).

Streets Capital Improvements Plan

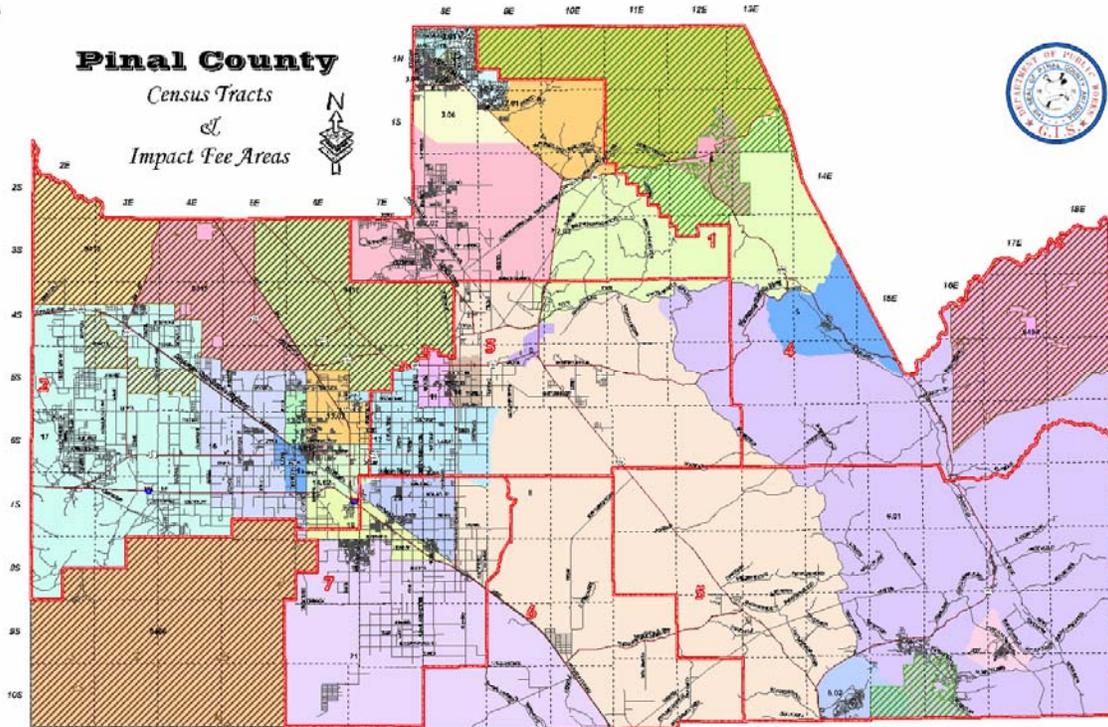
METHODOLOGY

Development fees for streets are one of the infrastructure categories allowed under Arizona law (see “State Requirements” above). The Streets Development Fee study for Pinal County includes the following capital costs related to streets:

- Arterial streets
- Support facilities for streets
- Support equipment and vehicles for streets

State law also requires the County to have an adopted capital improvements plan (CIP) in order to assess development fees within the covered planning area to offset the capital costs listed in the CIP to be necessary for public services provided by the County to development in the planning area. TischlerBise has prepared a CIP for each of the capital costs listed above for the unincorporated portion of the County’s Impact Fee Areas (IFA).

To better plan, coordinate, and finance the planned infrastructure demanded by new development, the County has established seven impact fee areas shown in Figure 2 below.

Figure 2: Pinal County Impact Fee Areas

To better meet the benefit requirements of the rational nexus test and state law, TischlerBise recommends the County collect and expend the Streets Development Fees according to these seven impact fee areas with the exception of IFA's 5, 6, and 7. Based on discussions with County staff, TischlerBise recommends combining IFA's 5, 6, and 7 for the Streets Development Fee. This is the result of a high degree of interconnectivity of the County's arterial street network among these three IFA's in this part of the County. Thus, the Streets Development Fee for these three IFA's are the same.

These zones are used to document where in the County the development fee revenues are coming from and where capital projects for new growth will be provided. The collection and expenditures zone map in Figure 2 is provided to give the reader a general indication of the IFA boundaries. Larger, detailed maps will be maintained by the County.

ARTERIAL STREETS

The *Pinal County Small Area Transportation Study* (hereafter referred to as “SATS”) outlines the arterial streets the County plans to construct in the future. This plan envisions the County constructing 672.3 lane miles of arterial streets throughout the County over the next 10 years (see Figure 3 below). Note this plan does not include any state road projects.

Figure 3: Summary 10 Year Arterial Streets Capital Improvements Program

IFA	Street	Classification	Additional Lane Miles	County Cost	Cost to Other Entities	Total Cost
1	Elliot Rd	Principal Arterial	6.0	\$3,750,000	\$3,750,000	\$7,500,000
1	Germann Rd	Principal Arterial	4.0	\$7,500,000	\$0	\$7,500,000
1	Pima Rd	Principal Arterial	4.0	\$7,500,000	\$0	\$7,500,000
1	Ocotillo Rd	Principal Arterial	2.0	\$7,500,000	\$0	\$7,500,000
1	Combs	Principal Arterial	4.0	\$7,500,000	\$0	\$7,500,000
1	Hunt Hwy	Minor Arterial	4.0	\$10,000,000	\$0	\$10,000,000
1	Ironwood / Ganzel Phase I	Minor Arterial	35.0	\$107,331,648	\$14,700,000	\$122,031,648
1	Combs	Minor Arterial	26.6	\$33,465,000	\$0	\$33,465,000
1	Hunt Hwy	Minor Arterial	4.0	\$10,000,000	\$0	\$10,000,000
1	Ironwood / Ganzel Phase II	Principal Arterial	35.0	\$76,045,620	\$0	\$76,045,620
1	Meridian Parkway	Principal Arterial	26.0	\$50,000,000	\$0	\$50,000,000
1	Arizona Farms	Minor Arterial	5.6	\$12,474,000	\$0	\$12,474,000
1	Arizona Farms	Minor Arterial	4.2	\$7,967,195	\$0	\$7,967,195
2	Maricopa CG Hwy	Minor Arterial	20.0	\$43,312,500	\$0	\$43,312,500
2	Val Vista	Minor Arterial	22.0	\$43,606,013	\$0	\$43,606,013
2	McCartney Rd	Minor Arterial	4.0	\$9,166,667	\$0	\$9,166,667
2	Thorton Rd	Minor Arterial	5.0	\$50,775,000	\$0	\$50,775,000
2	Ralston	Minor Arterial	33.4	\$63,785,000	\$0	\$63,785,000
2	Hunt Hwy	Minor Arterial	4.0	\$10,000,000	\$0	\$10,000,000
2	Miller	Minor Arterial	22.6	\$24,365,000	\$0	\$24,365,000
2	Korsten Rd	Principal Arterial	60.0	\$75,000,000	\$0	\$75,000,000
2	Anderson Rd	Principal Arterial	48.0	\$60,000,000	\$0	\$60,000,000
2	Montgomery	Principal Arterial	16.0	\$20,000,000	\$0	\$20,000,000
2	Arica	Principal Arterial	52.0	\$65,000,000	\$0	\$65,000,000
2	Sunland Gin	Minor Arterial	5.2	\$4,719,071	\$0	\$4,719,071
3	AZ Farms Rd	Minor Arterial	8.0	\$5,000,000	\$0	\$5,000,000
3	Hunt Hwy	Minor Arterial	4.0	\$6,000,000	\$0	\$6,000,000
3	Val Vista	Minor Arterial	8.6	\$17,045,987	\$0	\$17,045,987
3	McCartney Rd	Minor Arterial	14.0	\$32,083,333	\$0	\$32,083,333
3	Florence Kelvin Hwy	Minor Arterial	20.0	\$27,767,606	\$0	\$27,767,606
3	Arizona Farms	Minor Arterial	5.4	\$12,028,500	\$0	\$12,028,500
3	Arizona Farms	Minor Arterial	4.0	\$7,587,805	\$0	\$7,587,805
3	Attaway	Minor Arterial	6.2	\$20,755,000	\$0	\$20,755,000
3	Hunt Hwy	Minor Arterial	28.0	\$32,875,966	\$0	\$32,875,966
3	Selma Hwy	Minor Arterial	25.8	\$28,336,353	\$0	\$28,336,353
4	Florence-Kelvin Hwy	Minor Arterial	18.9	\$23,941,001	\$0	\$23,941,001
5, 6, 7	Park Link Dr	Minor Arterial	18.0	\$28,183,333	\$0	\$28,183,333
5, 6, 7	Selma Hwy	Minor Arterial	27.4	\$30,093,647	\$0	\$30,093,647
5, 6, 7	Sunland Gin	Minor Arterial	31.4	\$28,495,929	\$0	\$28,495,929
TOTAL			672.3	\$1,110,957,174	\$18,450,000	\$1,129,407,174

Source: *Pinal County Small Area Transportation Study*.

This plan is the result of demand from both existing residential and nonresidential development as well as new residential and nonresidential development in Pinal County both in the incorporated municipalities and unincorporated County. The portion of the planned arterial streets which are the result of existing development cannot be funded through development fees. Also, the portion of

the planned arterial streets which are the result of existing and new development in the incorporated municipalities will not be funded through the County development fees.

The demand for arterial streets is the result of residential and nonresidential development. The demand is a function of both the number of vehicle trips and the distance traveled on the County's arterial street network. Multiplying the number of vehicle trips by the average trip length (in miles) yields vehicle miles of travel (VMT). Trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* are used to measure and differentiate the demand between residential and nonresidential land uses. The VMT methodology is a better measure of the demand for additional street infrastructure in that it includes adjustment factors for commuting patterns, pass-by trips and average trip length variation by type of land use.

Two approaches are considered when reviewing the CIP for arterial streets. The *marginal cost approach* is used for projects which are the result of new growth only. These costs are allocated to the net increase in VMT's provided by the planned arterial projects. The *average cost approach* is used for planned capacity improvements that result from both existing and future development. Under this approach, costs are allocated to both new and existing development and ensure that new growth pays only its share of the costs.

The Streets Development Fee also accounts for and differentiates the demand for arterial streets from the IFA as a whole (incorporated and unincorporated County) versus the demand from the unincorporated IFA. This ensures that the demand from new growth in the unincorporated County is proportionate.

Using these criteria, the planned arterial projects are therefore classified into one of four categories for each IFA:

Average Cost Approach – Allocated to Entire IFA

Average Cost Approach – Allocated to Unincorporated IFA

Marginal Cost Approach – Allocated to Entire IFA

Marginal Cost Approach – Allocated to Unincorporated IFA

IFA 1

Figure 4 lists the planned arterial streets for IFA 1 over the next 10 years. These projects total 160.4 lane miles with a planned cost to the County of \$341,033,463. Note these figures **do not** include the planned State road projects for IFA 1 listed at the bottom of Figure 4.

Figure 4: Planned Arterial Streets IFA 1

MARGINAL COST APPROACH - ALLOCATED TO ENTIRE IFA

Roadway	From	To	Classification	Time Frame	New Lane Miles	Planned Cost to County	Planned Cost To Other Entities	TOTAL
Elliot Rd	Meridian Rd	Ironwood Rd	Principal Arterial	0-5 Years	6.0	\$3,750,000	\$3,750,000	\$7,500,000
Hunt Hwy	Ganzel Rd	AZ Farms Rd	Minor Arterial	0-5 Years	4.0	\$10,000,000	\$0	\$10,000,000
Ironwood / Ganzel Phase I	Hunt Hwy	US 60	Minor Arterial	0-5 Years	35.0	\$107,331,648	\$14,700,000	\$122,031,648
Combs	SR 79	Ironwood / Ganzel	Minor Arterial	5-10 Years	26.6	\$33,465,000	\$0	\$33,465,000
Hunt Hwy	SR 79	Ellsworth	Minor Arterial	5-10 Years	4.0	\$10,000,000	\$0	\$10,000,000
TOTAL					75.6	\$164,546,648	\$18,450,000	\$182,996,648

MARGINAL COST APPROACH - ALLOCATED TO UNINCORPORATED IFA

Roadway	From	To	Classification	Time Frame	New Lane Miles	Planned Cost to County	Planned Cost To Other Entities	TOTAL
Germann Rd	Meridian Rd	Ironwood Rd	Principal Arterial	0-5 Years	4.0	\$7,500,000	\$0	\$7,500,000
Pima Rd	Meridian Rd	Ironwood Rd	Principal Arterial	0-5 Years	4.0	\$7,500,000	\$0	\$7,500,000
Ocotillo Rd	Meridian Rd	Ironwood Rd	Principal Arterial	0-5 Years	2.0	\$7,500,000	\$0	\$7,500,000
Combs	Meridian Rd	Ironwood Rd	Principal Arterial	0-5 Years	4.0	\$7,500,000	\$0	\$7,500,000
Ironwood / Ganzel Phase II	Hunt Hwy	US 60	Principal Arterial	5-10 Years	35.0	\$76,045,620	\$0	\$76,045,620
Meridian Parkway	Pima Rd	US 60	Principal Arterial	5-10 Years	26.0	\$50,000,000	\$0	\$50,000,000
Arizona Farms	SR 79	Felix	Minor Arterial	5-10 Years	5.6	\$12,474,000	\$0	\$12,474,000
Arizona Farms	Felix	Hunt Hwy	Minor Arterial	5-10 Years	4.2	\$7,967,195	\$0	\$7,967,195
TOTAL					84.8	\$176,486,815	\$0	\$176,486,815

STATE ROAD PROJECTS (NOT INCLUDED IN DEVELOPMENT FEE CALCULATIONS)

Roadway	From	To	Classification	Time Frame	New Lane Miles	Total Estimated Cost to County	Total Estimated Entities	TOTAL
SR 79	Jct. US 60/SR79	Jct. Sr 77/SR79	Major Arterial	5-10 Years	28.0			\$6,480,000,000

Trip Generation Rates

Trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual*. The Streets 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 Pinal County 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 P26 in Summary File 3 indicates that 40% of Pinal County's workers travel outside the County for work. In combination, these factors ($0.31 \times 0.50 \times 0.40 = 0.06$) 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 5 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 small-size shopping center of 50,000 square feet of floor area, the *Trip Generation Manual* indicates that on average 39% of the vehicles that enter are passing by on their way to some other primary destination. The remaining 61% of attraction trips have the shopping center as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 61% multiplied by 50%, or approximately 31% of the trip ends.

Figure 5: 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 $((-7.6812 * \ln(\text{KSF})) + 69.293)$.

** 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 $(0.50 * (1 - \text{passby pct}))$.

Average Trip Length Adjustment by Land Use

The demand for arterial 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 Streets 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.

These adjustment factors are used for each IFA.

Vehicle Miles of Travel on Planned Arterial Streets Allocated to Entire IFA 1

VMT is the product of the number of vehicle trips multiplied by the average trip length. Intermediate steps in deriving the average trip length include identification of the need for additional lane miles and defining lane capacity. These factors are discussed below.

Planned Lane Miles of Arterial Streets Being Demanded by Entire IFA 1

As shown in Figure 4 above, there are 75.6 lane miles of planned arterial streets that are the result of development in the entire IFA 1.

Vehicle Trips from Development in Entire IFA 1

Figure 6 below documents projected vehicle trips and VMT on the 75.6 lane miles of planned arterial streets associated with development in incorporated and unincorporated IFA 1 over the next ten years. The demographic data shown in the boxes at the top of the table are from the *Demographic Estimates and Development Projections* report.

Lane Capacity

The arterial improvements component is based on an average lane capacity standard for arterials of 8,700 vehicles per lane.

Average Trip Length

Knowing the increase in vehicle trips, lane miles needed to accommodate future travel, and lane capacity, it is possible to derive the average trip length on the planned arterial streets by the projected new residential and nonresidential growth in incorporated and unincorporated IFA 1 over the next ten years. 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 6, the average trip length on the planned arterial streets by future residential and nonresidential development in the entire IFA 1 is 1.69 miles.

Figure 6: IFA 1 Arterial Street Capacity Analysis – Municipalities and Unincorporated County

INPUT VARIABLES	First Projection Year	2007	Year->						
			Base 2006	2 2008	4 2010	6 2012	8 2014	10 2016	
			Pinal County, Arizona						
			DEMAND DATA						
Single Family Detached Weekday VTE per Unit		9.57	SINGLE FAMILY DETACHED	41,221	48,882	56,441	63,999	71,557	79,115
All Other Housing Weekday VTE per Unit		4.99	ALL OTHER TYPES OF HOUSING	19,329	19,942	20,512	21,081	21,651	22,220
Retail Weekday VTE/KSF		86.56	COMMERCIAL KSF	2,051	3,355	4,660	5,964	7,268	8,573
Office/Institutional Weekday VTE/KSF		18.35	OFFICE/INSTITUTIONAL KSF	2,672	2,921	3,170	3,419	3,668	3,917
Industrial Flex Weekday VTE/KSF		6.97	INDUSTRIAL/FLEX KSF	719	911	1,102	1,294	1,485	1,677
Residential Trip Adj Factor		56%	SINGLE FAMILY DETACHED TRIPS	221,703	262,906	303,557	344,207	384,857	425,508
Commercial Trip Adj Factor		31%	ALL OTHER TYPES OF HOUSING TRIPS	54,205	55,925	57,523	59,120	60,717	62,314
Other Nonresidential Trip Adj Factor		50%	COMMERCIAL TRIPS	55,036	90,036	125,036	160,036	195,036	230,037
County Road Trips		100%	OFFICE/INSTITUTIONAL TRIPS	24,516	26,800	29,083	31,367	33,651	35,935
Average Miles/Trip IFA		1.69	INDUSTRIAL/FLEX TRIPS	2,506	3,174	3,841	4,509	5,177	5,845
Residential Trip Length		122%	TOTAL IFA ARTERIAL TRIPS	357,965	438,841	519,040	599,240	679,439	759,639
Commercial Trip Length		68%	IFA ARTERIAL VMT	667,940	800,718	932,098	1,063,478	1,194,858	1,326,238
Other Nonresidential Trip Length		75%	IFA ARTERIAL LN MI	76.8	92.0	107.1	122.2	137.3	152.4
Ave. Arterial Capacity Per Lane		8,700	ANNUAL IFA ARTERIAL LN MI NEEDED		7.5	7.5	7.5	7.5	7.5
			CUMULATIVE ARTERIAL LN MI NEEDED		15.2	30.3	45.4	60.5	75.6

Cost per VMT for Planned Arterial Streets Allocated to Entire IFA 1

The planned cost to the County of \$164,546,648 for planned arterial streets is allocated to the net increase of 658,298 VMT's over the next ten years (1,326,238 VMT's in 2016 – 667,940 VMT's in 2006 = 658,298). This results in a capacity cost of \$249.96 (\$164,546,648 / 658,298 VMT = \$249.96/VMT) to accommodate additional vehicle miles of travel from new development on the planned 75.6 lane miles of planned arterial streets.

Figure 7: Planned Arterial Street Improvements Allocated to Entire IFA 1 – Marginal Approach

MARGINAL COST APPROACH - ALLOCATED TO ENTIRE IFA

Roadway	From	To	Net New Lanes	New Lane Miles	Planned Cost to County	Planned Cost To Other Entities	TOTAL
Elliot Rd	Meridian Rd	Ironwood Rd	6	6.0	\$3,750,000	\$3,750,000	\$7,500,000
Hunt Hwy	Ganzel Rd	AZ Farms Rd	2	4.0	\$10,000,000	\$0	\$10,000,000
Ironwood / Ganzel Phase I	Hunt Hwy	US 60	2	35.0	\$107,331,648	\$14,700,000	\$122,031,648
Combs	SR 79	Ironwood / Ganzel	2	26.6	\$33,465,000	\$0	\$33,465,000
Hunt Hwy	SR 79	Ellsworth	2	4.0	\$10,000,000	\$0	\$10,000,000
				75.6	\$164,546,648	\$18,450,000	\$182,996,648
						Total Cost to County	\$164,546,648
						Net Increase in VMT's In IFA 1 2006-2016 (Incorporated and Unincorporated)	658,298
						Cost per VMT	\$249.96

Vehicle Miles of Travel on Planned Arterial Streets Allocated to Unincorporated IFA 1

VMT is the product of the number of vehicle trips multiplied by the average trip length. Intermediate steps in deriving the average trip length include identification of the need for additional lane miles and defining lane capacity. These factors are discussed below.

Planned Lane Miles of Arterial Streets Being Demanded by Unincorporated IFA 1

As shown in Figure 4 above, there are 70.8 lane miles of planned arterial streets that are the result of new development in unincorporated IFA 1.

Vehicle Trips from Development in Unincorporated IFA 1

Figure 8 below documents projected vehicle trips and VMT on the 84.8 lane miles of planned arterial streets associated with development in unincorporated IFA 1 over the next ten years. The demographic data shown in the boxes at the top of the table are from the *Demographic Estimates and Development Projections* report.

Lane Capacity

The arterial improvements component is based on an average lane capacity standard for arterials of 8,700 vehicles per lane.

Average Trip Length

Knowing the increase in vehicle trips, lane miles needed to accommodate future travel, and lane capacity, it is possible to derive the average trip length on the planned arterial streets by the

projected new residential and nonresidential growth in unincorporated IFA 1 over the next ten years. 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 arterial streets by future residential and nonresidential development in unincorporated IFA 1 is 2.99 miles.

Figure 8: IFA 1 Arterial Street Capacity Analysis – Unincorporated County

First Projection Year	2007	Pinal County, Arizona	2006	2008	2010	2012	2014	2016
DEMAND DATA								
Single Family Detached Weekday VTE per Unit	9.57	SINGLE FAMILY DETACHED	33,686	40,736	47,786	54,836	61,886	68,936
All Other Housing Weekday VTE per Unit	4.99	ALL OTHER TYPES OF HOUSING	2,361	2,855	3,349	3,843	4,337	4,831
Retail Weekday VTE/KSF	86.56	COMMERCIAL KSF	999	999	999	999	999	999
Office/Institutional Weekday VTE/KSF	18.35	OFFICE/INSTITUTIONAL KSF	1,943	2,128	2,312	2,497	2,682	2,867
Industrial Flex Weekday VTE/KSF	6.97	INDUSTRIAL/FLEX KSF	527	587	647	707	767	827
Residential Trip Adj Factor	56%	SINGLE FAMILY DETACHED TRIPS	181,177	219,095	257,012	294,929	332,846	370,763
Commercial Trip Adj Factor	31%	ALL OTHER TYPES OF HOUSING TRIPS	6,620	8,005	9,391	10,776	12,161	13,547
Other Nonresidential Trip Adj Factor	50%	COMMERCIAL TRIPS	26,807	26,807	26,807	26,807	26,807	26,807
County Road Trips	100%	OFFICE/INSTITUTIONAL TRIPS	17,827	19,522	21,217	22,912	24,607	26,302
Average Miles/Trip IFA	2.99	INDUSTRIAL/FLEX TRIPS	1,837	2,046	2,255	2,464	2,673	2,882
Residential Trip Length	122%	TOTAL IFA ARTERIAL TRIPS	234,268	275,474	316,681	357,888	399,094	440,301
Commercial Trip Length	68%	IFA ARTERIAL VMT	783,646	931,284	1,078,922	1,226,559	1,374,197	1,521,835
Other Nonresidential Trip Length	75%	IFA ARTERIAL LN MI	90.1	107.0	124.0	141.0	158.0	174.9
Ave. Arterial Capacity Per Lane	8,700	ANNUAL IFA ARTERIAL LN MI NEEDED		8.4	8.5	8.5	8.5	8.5
		CUMULATIVE ARTERIAL LN MI NEEDED		16.9	33.9	50.9	67.9	84.8

Cost per VMT for Planned Arterial Streets Allocated to Unincorporated IFA 1

The planned cost to the County of \$176,486,815 for planned arterial streets is allocated to the net increase of 738,190 VMT's over the next ten years (1,521,835 VMT's in 2016 – 738,646 VMT's in 2006 = 738,190). This results in a capacity cost of \$239.08 (\$176,486,815 /738,190 VMT = \$239.08/VMT) to accommodate additional vehicle miles of travel from new development in unincorporated Pinal County on the planned 84.6 lane miles of planned arterial streets.

Figure 9: Planned Arterial Street Improvements Allocated to Unincorporated IFA 1 – Marginal Approach

MARGINAL COST APPROACH - ALLOCATED TO UNINCORPORATED IFA							
Roadway	From	To	Net New Lanes	New Lane Miles	Planned Cost to County	Planned Cost To Other Entities	TOTAL
Germann Rd	Meridian Rd	Ironwood Rd	6	4.0	\$7,500,000	\$0	\$7,500,000
Pima Rd	Meridian Rd	Ironwood Rd	6	4.0	\$7,500,000	\$0	\$7,500,000
Ocotillo Rd	Meridian Rd	Ironwood Rd	4	2.0	\$7,500,000	\$0	\$7,500,000
Combs	Meridian Rd	Ironwood Rd	4	4.0	\$7,500,000	\$0	\$7,500,000
Ironwood / Ganzel Phase II	Hunt Hwy	US 60	2	35.0	\$76,045,620	\$0	\$76,045,620
Meridian Parkway	Pima Rd	US 60	4	26.0	\$50,000,000	\$0	\$50,000,000
Arizona Farms	SR 79	Felix	2	5.6	\$12,474,000	\$0	\$12,474,000
Arizona Farms	Felix	Hunt Hwy	2	4.2	\$7,967,195	\$0	\$7,967,195
			84.8		\$176,486,815	\$0	\$176,486,815
					Total Cost to County		\$176,486,815
					Net Increase in VMT's In IFA 1 2006-2016 (Unincorporated)		738,190
					Cost per VMT		\$239.08

IFA 2

Figure 10 lists the planned arterial streets for IFA 2 over the next 10 years. These projects total 284.7 lane miles with a planned cost to the County of \$469,729,251. Note these figures **do not** include the planned State road projects for IFA 2 listed at the bottom of Figure 10.

Figure 10: Planned Arterial Streets IFA 2

MARGINAL COST APPROACH - ALLOCATED TO ENTIRE IFA

Roadway	From	To	Classification	Time Frame	New Lane Miles	Planned Cost to County	Planned Cost To Other Entities	TOTAL
Val Vista	Maricopa CG Hwy	Signal Peak Rd	Minor Arterial	0-5 Years	22.0	\$43,606,013	\$0	\$43,606,013
McCartney Rd	I-10	Skousen Rd	Minor Arterial	0-5 Years	4.0	\$9,166,667	\$0	\$9,166,667
Thorton Rd	I-8	Peters Rd	Minor Arterial	0-5 Years	5.0	\$50,775,000	\$0	\$50,775,000
Ralston	SR 84	SR 238	Minor Arterial	5-10 Years	33.4	\$63,785,000	\$0	\$63,785,000
Hunt Hwy	SR 79	Ellsworth	Minor Arterial	5-10 Years	4.0	\$10,000,000	\$0	\$10,000,000
Miller	Ralston	Anderson	Minor Arterial	5-10 Years	22.6	\$24,365,000	\$0	\$24,365,000
Korsten Rd	Burris Rd	SR 347	Principal Arterial	5-10 Years	60.0	\$75,000,000	\$0	\$75,000,000
Anderson Rd	Maricopa CG Hwy	I-8	Principal Arterial	5-10 Years	48.0	\$60,000,000	\$0	\$60,000,000
Montgomery	I-8	Val Vista Rd	Principal Arterial	5-10 Years	16.0	\$20,000,000	\$0	\$20,000,000
Arica	Stanfield Rd	Trekell Rd	Principal Arterial	5-10 Years	52.0	\$65,000,000	\$0	\$65,000,000
					267.0	\$421,697,680	\$0	\$421,697,680

AVERAGE COST APPROACH - ALLOCATED TO UNINCORPORATED IFA

Roadway	From	To	Classification	Time Frame	New Lane Miles	Planned Cost to County	Planned Cost To Other Entities	TOTAL
Maricopa CG Hwy	SR 347	Burris Rd	Minor Arterial	0-5 Years	12.5	\$43,312,500	\$0	\$43,312,500
Sunland Gin	Baumgartner	Selma Hwy	Minor Arterial	5-10 Years	5.2	\$4,719,071	\$0	\$4,719,071
					17.7	\$48,031,571	\$0	\$48,031,571

STATE ROAD PROJECTS (NOT INCLUDED IN DEVELOPMENT FEE CALCULATIONS)

Roadway	From	To	Classification	Time Frame	New Lane Miles	Total Estimated Cost to County	Total Estimated Entities	TOTAL
SR 287	Jct. SR79/SR 287	Jct New N/S Corridor	Principal Arterial	5-10 Years	24.0			\$624,000,000

Vehicle Miles of Travel on Planned Arterial Streets Allocated to Entire IFA 2

VMT is the product of the number of vehicle trips multiplied by the average trip length. Intermediate steps in deriving the average trip length include identification of the need for additional lane miles and defining lane capacity. These factors are discussed below.

Planned Lane Miles of Arterial Streets Being Demanded by Entire IFA 2

As shown in Figure 10 above, there are 267 lane miles of planned arterial streets that are the result of new development in the entire IFA 2.

Vehicle Trips from Development in Entire IFA 2

Figure 11 below documents projected vehicle trips and VMT on the 267 lane miles of planned arterial streets associated with development in incorporated and unincorporated IFA 2 over the next ten years. The demographic data shown in the boxes at the top of the table are from the *Demographic Estimates and Development Projections* report.

Lane Capacity

The arterial improvements component is based on an average lane capacity standard for arterials of 8,700 vehicles per lane.

Average Trip Length

Knowing the increase in vehicle trips, lane miles needed to accommodate future travel, and lane capacity, it is possible to derive the average trip length on the planned arterial streets by the projected new residential and nonresidential growth in incorporated and unincorporated IFA 2 over the next ten years. 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 11, the average trip length on the planned arterial streets by future residential and nonresidential development in the entire IFA 2 is 2.92 miles.

Figure 11: IFA 2 Arterial Street Capacity Analysis – Municipalities and Unincorporated County

INPUT VARIABLES	First Projection Year	2007	Pinal County, Arizona	Year->					
				Base 2006	2 2008	4 2010	6 2012	8 2014	10 2016
DEMAND DATA									
Single Family Detached Weekday VTE per Unit	9.57		SINGLE FAMILY DETACHED	25,542	41,660	57,778	73,896	90,013	106,131
All Other Housing Weekday VTE per Unit	4.99		ALL OTHER TYPES OF HOUSING	8,772	9,832	10,892	11,952	13,013	14,073
Retail Weekday VTE/KSF	86.56		COMMERCIAL KSF	2,850	5,213	7,613	9,994	12,365	14,742
Office/Institutional Weekday VTE/KSF	18.35		OFFICE/INSTITUTIONAL KSF	2,410	3,042	3,699	4,343	4,981	5,622
Industrial Flex Weekday VTE/KSF	6.97		INDUSTRIAL/FLEX KSF	1,531	2,221	2,945	3,651	4,348	5,050
Residential Trip Adj Factor	56%		SINGLE FAMILY DETACHED TRIPS	137,376	224,062	310,749	397,435	484,122	570,808
Commercial Trip Adj Factor	31%		ALL OTHER TYPES OF HOUSING TRIPS	24,599	27,572	30,546	33,519	36,493	39,466
Other Nonresidential Trip Adj Factor	50%		COMMERCIAL TRIPS	76,476	139,884	204,284	268,175	331,797	395,581
County Road Trips	100%		OFFICE/INSTITUTIONAL TRIPS	22,112	27,910	33,937	39,845	45,698	51,578
Average Miles/Trip IFA	2.92		INDUSTRIAL/FLEX TRIPS	5,336	7,739	10,264	12,723	15,154	17,599
Residential Trip Length	122%		TOTAL IFA ARTERIAL TRIPS	265,898	427,167	589,780	751,697	913,264	1,075,033
Commercial Trip Length	68%		IFA ARTERIAL VMT	789,249	1,252,675	1,718,843	2,183,591	2,647,626	3,112,070
Other Nonresidential Trip Length	75%		IFA ARTERIAL LN MI	90.7	144.0	197.6	251.0	304.3	357.7
Ave. Arterial Capacity Per Lane	8,700		ANNUAL IFA ARTERIAL LN MI NEEDED		26.3	26.7	26.8	26.7	26.7
			CUMULATIVE ARTERIAL LN MI NEEDED		53.3	106.9	160.3	213.6	267.0

Cost per VMT for Planned Arterial Streets Allocated to Entire IFA 2

The planned cost to the County of \$421,697,680 for planned arterial streets is allocated to the net increase of 2,322,822 VMT's over the next ten years (3,112,070 VMT's in 2016 – 789,249 VMT's in 2006 = 2,322,822). This results in a capacity cost of \$181.55 (\$421,697,680 / 2,322,822 VMT = \$181.55/VMT) to accommodate additional vehicle miles of travel from new development in the entire IFA 2 on the planned 267 lane miles of planned arterial streets.

Figure 12: Planned Arterial Street Improvements Allocated to Entire IFA 2 – Marginal Approach

MARGINAL COST APPROACH - ALLOCATED TO ENTIRE IFA						
Roadway	From	To	New Lane Miles	Planned Cost to County	Planned Cost To Other Entities	TOTAL
Val Vista	Maricopa CG Hwy	Signal Peak Rd	22.0	\$43,606,013	\$0	\$43,606,013
McCartney Rd	I-10	Skousen Rd	4.0	\$9,166,667	\$0	\$9,166,667
Thorton Rd	I-8	Peters Rd	5.0	\$50,775,000	\$0	\$50,775,000
Ralston	SR 84	SR 238	33.4	\$63,785,000	\$0	\$63,785,000
Hunt Hwy	SR 79	Ellsworth	4.0	\$10,000,000	\$0	\$10,000,000
Miller	Ralston	Anderson	22.6	\$24,365,000	\$0	\$24,365,000
Korsten Rd	Burris Rd	SR 347	60.0	\$75,000,000	\$0	\$75,000,000
Anderson Rd	Maricopa CG Hwy	I-8	48.0	\$60,000,000	\$0	\$60,000,000
Montgomery	I-8	Val Vista Rd	16.0	\$20,000,000	\$0	\$20,000,000
Arica	Stanfield Rd	Trekell Rd	52.0	\$65,000,000	\$0	\$65,000,000
			267.0	\$421,697,680	\$0	\$421,697,680
				Total Cost to County		\$421,697,680
				Net Increase in VMT's In IFA 2 (Incorporated and Unincorporated)		2,322,822
				Cost per VMT		\$181.55

Vehicle Miles of Travel on Planned Arterial Streets Allocated to Unincorporated IFA 2

VMT is the product of the number of vehicle trips multiplied by the average trip length. Intermediate steps in deriving the average trip length include identification of the need for additional lane miles and defining lane capacity. These factors are discussed below.

Planned Lane Miles of Arterial Streets Being Demanded by Unincorporated IFA 2

As shown in Figure 10 above, there are 17.7 lane miles of planned arterial streets that are the result of new development in unincorporated IFA 2.

Vehicle Trips from Development in Unincorporated IFA 1

Figure 13 below documents projected vehicle trips and VMT on the 17.7 lane miles of planned arterial streets associated with development in unincorporated IFA 2 over the next ten years. The demographic data shown in the boxes at the top of the table are from the *Demographic Estimates and Development Projections* report.

Lane Capacity

The arterial improvements component is based on an average lane capacity standard for arterials of 8,700 vehicles per lane.

Average Trip Length

Knowing the increase in vehicle trips, lane miles needed to accommodate future travel, and lane capacity, it is possible to derive the average trip length on the planned arterial streets by the projected new residential and nonresidential growth in unincorporated IFA 2 over the next ten years. 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 13, the average trip length on the planned arterial streets by future residential and nonresidential development in unincorporated IFA 2 is 10.4 miles.

Figure 13: IFA 2 Arterial Street Capacity Analysis –Unincorporated County

INPUT VARIABLES		Year->	Base	2	4	6	8	10
First Projection Year	2007	Pinal County, Arizona	2006	2008	2010	2012	2014	2016
DEMAND DATA								
Single Family Detached Weekday VTE per Unit	9.57	SINGLE FAMILY DETACHED	6,749	7,091	7,433	7,775	8,116	8,458
All Other Housing Weekday VTE per Unit	4.99	ALL OTHER TYPES OF HOUSING	3,167	3,327	3,487	3,647	3,808	3,968
Retail Weekday VTE/KSF	86.56	COMMERCIAL KSF	236	236	236	236	236	236
Office/Institutional Weekday VTE/KSF	18.35	OFFICE/INSTITUTIONAL KSF	459	479	499	519	539	559
Industrial Flex Weekday VTE/KSF	6.97	INDUSTRIAL/FLEX KSF	125	135	144	154	163	173
Residential Trip Adj Factor	56%	SINGLE FAMILY DETACHED TRIPS	36,301	38,138	39,976	41,814	43,652	45,489
Commercial Trip Adj Factor	31%	ALL OTHER TYPES OF HOUSING TRIPS	8,880	9,330	9,779	10,229	10,679	11,128
Other Nonresidential Trip Adj Factor	50%	COMMERCIAL TRIPS	6,333	6,333	6,333	6,333	6,333	6,333
County Road Trips	100%	OFFICE/INSTITUTIONAL TRIPS	4,211	4,394	4,577	4,760	4,943	5,125
Average Miles/Trip IFA	10.40	INDUSTRIAL/FLEX TRIPS	436	469	502	536	569	603
Residential Trip Length	122%	TOTAL IFA ARTERIAL TRIPS	56,161	58,664	61,168	63,671	66,175	68,678
Commercial Trip Length	68%	IFA ARTERIAL VMT	654,288	684,995	715,703	746,410	777,118	807,825
Other Nonresidential Trip Length	75%	IFA ARTERIAL LN MI	75.2	78.7	82.3	85.8	89.3	92.9
Ave. Arterial Capacity Per Lane	8,700	ANNUAL IFA ARTERIAL LN MI NEEDED		1.7	1.8	1.8	1.7	1.8
		CUMULATIVE ARTERIAL LN MI NEEDED		3.5	7.1	10.6	14.1	17.7

Cost per VMT for Planned Arterial Streets Allocated to Unincorporated IFA 2

The planned cost to the County of \$48,031,571 for planned arterial streets is allocated to the total number of VMT's in 2016 (807,825). This results in a capacity cost of \$59.46 (\$48,031,571 / 807,825 VMT = \$59.46/VMT) to accommodate additional vehicle miles of travel from existing and new development on the planned 17.7 lane miles of planned arterial streets.

Figure 14: Planned Arterial Street Improvements Allocated to Unincorporated IFA 2 – Average Approach

AVERAGE COST APPROACH - ALLOCATED TO UNINCORPORATED IFA

Roadway	From	To	New Lane Miles	Planned Cost to County	Planned Cost To Other Entities	TOTAL
Maricopa CG Hwy	SR 347	Burriss Rd	12.5	\$43,312,500	\$0	\$43,312,500
Sunland Gin	Baumgartner	Selma Hwy	5.2	\$4,719,071	\$0	\$4,719,071
			17.7	\$48,031,571	\$0	\$48,031,571
Total Cost to County						\$48,031,571
Total VMT's In IFA 2 in 2016 (Unincorporated)						807,825
Cost per VMT						\$59.46

IFA 3

Figure 15 lists the planned arterial streets for IFA 3 over the next 10 years. These projects total 124 lane miles with a planned cost to the County of \$189,480,550. Note these figures **do not** include the planned State road projects for IFA 3 listed at the bottom of Figure 15.

Figure 15: Planned Arterial Streets IFA 3

MARGINAL COST APPROACH - ALLOCATED TO ENTIRE IFA

Roadway	From	To	Classification	Time Frame	New Lane Miles	Planned Cost to County	Planned Cost To Other Entities	TOTAL
AZ Farms Rd	Hunt Hwy	Felix Rd	Minor Arterial	0-5 Years	8.0	\$5,000,000	\$0	\$5,000,000
Hunt Hwy	Ganzel Rd	AZ Farms Rd	Minor Arterial	0-5 Years	4.0	\$6,000,000	\$0	\$6,000,000
Val Vista	Maricopa CG Hwy	Signal Peak Rd	Minor Arterial	0-5 Years	8.6	\$17,045,987	\$0	\$17,045,987
McCartney Rd	I-10	Skousen Rd	Minor Arterial	0-5 Years	14.0	\$32,083,333	\$0	\$32,083,333
Florence Kelvin Hwy	End of Pavement	SR 177	Minor Arterial	0-5 Years	20.0	\$27,767,606	\$0	\$27,767,606
Arizona Farms	SR 79	Felix	Minor Arterial	5-10 Years	5.4	\$12,028,500	\$0	\$12,028,500
Arizona Farms	Felix	Hunt Hwy	Minor Arterial	5-10 Years	4.0	\$7,587,805	\$0	\$7,587,805
Attaway	SR 287	Hunt Hwy	Minor Arterial	5-10 Years	6.2	\$20,755,000	\$0	\$20,755,000
Hunt Hwy	SR 79	Ellsworth	Minor Arterial	5-10 Years	28.0	\$32,875,966	\$0	\$32,875,966
Selma Hwy	Sunland Gin	SR 79	Minor Arterial	5-10 Years	25.8	\$28,336,353	\$0	\$28,336,353
					124.0	\$189,480,550	\$0	\$189,480,550

STATE ROAD PROJECTS (NOT INCLUDED IN DEVELOPMENT FEE CALCULATIONS)

Roadway	From	To	Classification	Time Frame	New Lane Miles	Total Estimated Cost to County	Total Estimated Cost to Other Entities	TOTAL
SR 79	Jct. US 60/SR79	Jct. Sr 77/SR79	Major Arterial	5-10 Years	40.0			\$1,080,000,000
SR 287	Jct. SR79/SR 287	Jct New N/S Corridor	Principal Arterial	5-10 Years	24.0			\$624,000,000

Vehicle Miles of Travel on Planned Arterial Streets Allocated to Entire IFA 3

VMT is the product of the number of vehicle trips multiplied by the average trip length. Intermediate steps in deriving the average trip length include identification of the need for additional lane miles and defining lane capacity. These factors are discussed below.

Planned Lane Miles of Arterial Streets Being Demanded by Entire IFA 3

As shown in Figure 15 above, there are 124 lane miles of planned arterial streets demanded by new development in the entire IFA 3.

Vehicle Trips from Development in Entire IFA 3

Figure 16 documents projected vehicle trips and VMT on the 124 lane miles of planned arterial streets associated with development in incorporated and unincorporated IFA 3 over the next ten years. The demographic data shown in the boxes at the top of the table are from the *Demographic Estimates and Development Projections* report.

Lane Capacity

The arterial improvements component is based on an average lane capacity standard for arterials of 8,700 vehicles per lane.

Average Trip Length

Knowing the increase in vehicle trips, lane miles needed to accommodate future travel, and lane capacity, it is possible to derive the average trip length on the planned arterial streets by the projected new residential and nonresidential growth in incorporated and unincorporated IFA 3 over the next ten years. 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 16, the average trip length on the planned arterial streets by future residential and nonresidential development in the entire IFA 3 is 5.67 miles.

Figure 16: IFA 3 Arterial Street Capacity Analysis – Municipalities and Unincorporated County

INPUT VARIABLES		Year->	Base	2	4	6	8	10
First Projection Year	2007	Pinal County, Arizona	2006	2008	2010	2012	2014	2016
DEMAND DATA								
Single Family Detached Weekday VTE per Unit	9.57	SINGLE FAMILY DETACHED	6,336	10,364	14,427	18,548	22,746	26,988
All Other Housing Weekday VTE per Unit	4.99	ALL OTHER TYPES OF HOUSING	4,964	5,334	5,704	6,074	6,444	6,814
Retail Weekday VTE/KSF	86.56	COMMERCIAL KSF	764	1,152	1,548	1,955	2,373	2,804
Office/Institutional Weekday VTE/KSF	18.35	OFFICE/INSTITUTIONAL KSF	659	938	1,222	1,512	1,808	2,111
Industrial Flex Weekday VTE/KSF	6.97	INDUSTRIAL/FLEX KSF	237	334	430	527	624	721
Residential Trip Adj Factor	56%	SINGLE FAMILY DETACHED TRIPS	34,076	55,742	77,594	99,757	122,333	145,148
Commercial Trip Adj Factor	31%	ALL OTHER TYPES OF HOUSING TRIPS	13,922	14,959	15,997	17,034	18,072	19,110
Other Nonresidential Trip Adj Factor	50%	COMMERCIAL TRIPS	20,501	30,902	41,541	52,451	63,672	75,249
County Road Trips	100%	OFFICE/INSTITUTIONAL TRIPS	6,046	8,608	11,214	13,870	16,585	19,366
Average Miles/Trip IFA	5.67	INDUSTRIAL/FLEX TRIPS	826	1,163	1,500	1,837	2,174	2,513
Residential Trip Length	122%	TOTAL IFA ARTERIAL TRIPS	75,371	111,374	147,845	184,949	222,837	261,385
Commercial Trip Length	68%	IFA ARTERIAL VMT	440,286	649,764	861,631	1,076,913	1,296,508	1,519,405
Other Nonresidential Trip Length	75%	IFA ARTERIAL LN MI	50.6	74.7	99.0	123.8	149.0	174.6
Ave. Arterial Capacity Per Lane	8,700	ANNUAL IFA ARTERIAL LN MI NEEDED		12.1	12.2	12.5	12.6	12.8
		CUMULATIVE ARTERIAL LN MI NEEDED		24.1	48.4	73.2	98.4	124.0

Cost per VMT for Planned Arterial Streets Allocated to Entire IFA 3

The planned cost to the County of \$189,480,550 for planned arterial streets is allocated to the net increase of 1,079,119 VMT's over the next ten years (1,519,405 VMT's in 2016 – 440,286 VMT's in 2006 = 1,079,119). This results in a capacity cost of \$175.59 (\$189,480,550 / 1,079,119 VMT = \$175.59/VMT) to accommodate additional vehicle miles of travel from new development in the entire IFA 3 on the planned 124 lane miles of planned arterial streets.

Figure 17: Planned Arterial Street Improvements Allocated to Entire IFA 3 – Marginal Approach

MARGINAL COST APPROACH - ALLOCATED TO ENTIRE IFA

Roadway	From	To	New Lane Miles	Planned Cost to County	Planned Cost To Other Entities	TOTAL
AZ Farms Rd	Hunt Hwy	Felix Rd	8.0	\$5,000,000	\$0	\$5,000,000
Hunt Hwy	Ganzel Rd	AZ Farms Rd	4.0	\$6,000,000	\$0	\$6,000,000
Val Vista	Maricopa CG Hwy	Signal Peak Rd	8.6	\$17,045,987	\$0	\$17,045,987
McCartney Rd	I-10	Skousen Rd	14.0	\$32,083,333	\$0	\$32,083,333
Florence Kelvin Hwy	End of Pavement	SR 177	20.0	\$27,767,606	\$0	\$27,767,606
Arizona Farms	SR 79	Felix	5.4	\$12,028,500	\$0	\$12,028,500
Arizona Farms	Felix	Hunt Hwy	4.0	\$7,587,805	\$0	\$7,587,805
Attaway	SR 287	Hunt Hwy	6.2	\$20,755,000	\$0	\$20,755,000
Hunt Hwy	SR 79	Ellsworth	28.0	\$32,875,966	\$0	\$32,875,966
Selma Hwy	Sunland Gin	SR 79	25.8	\$28,336,353	\$0	\$28,336,353
			124.0	\$189,480,550	\$0	\$189,480,550

Total Cost to County \$189,480,550
 Net Increase in VMT's In IFA 3 (Incorporated and Unincorporated) 1,079,119
 Cost per VMT \$175.59

IFA 4

Figure 18 lists the planned arterial streets for IFA 4 over the next 10 years. These projects total 18.9 lane miles with a planned cost to the County of \$23,941,001.

Figure 18: Planned Arterial Streets IFA 4

AVERAGE COST APPROACH - ALLOCATED TO ENTIRE IFA

Roadway	From	To	Classification	Time Frame	New Lane Miles	Planned Cost to County	Planned Cost To Other Entities	TOTAL
Florence-Kelvin Hwy	SR 79	SR 177	Minor Arterial	5-10 Years	18.9	\$23,941,001	\$0	\$23,941,001
					18.9	\$23,941,001	\$0	\$23,941,001

Vehicle Miles of Travel on Planned Arterial Streets Allocated to Entire IFA 4

VMT is the product of the number of vehicle trips multiplied by the average trip length. Intermediate steps in deriving the average trip length include identification of the need for additional lane miles and defining lane capacity. These factors are discussed below.

Planned Lane Miles of Arterial Streets Being Demanded by Entire IFA 4

As shown in Figure 18 above, there are 18.9 lane miles of planned arterial streets that are demanded by new development in the entire IFA 4.

Vehicle Trips from Development in Entire IFA 4

Figure 19 below documents projected vehicle trips and VMT on the 18.9 lane miles of planned arterial streets associated with development in incorporated and unincorporated IFA 4 over the next ten years. The demographic data shown in the boxes at the top of the table are from the *Demographic Estimates and Development Projections* report.

Lane Capacity

The arterial improvements component is based on an average lane capacity standard for arterials of 8,700 vehicles per lane.

Average Trip Length

Knowing the increase in vehicle trips, lane miles needed to accommodate future travel, and lane capacity, it is possible to derive the average trip length on the planned arterial streets by the existing and projected new residential and nonresidential growth in incorporated and unincorporated IFA 4 over the next ten years. 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 19, the average trip length on the planned arterial streets by current and future residential and nonresidential development in the entire IFA 4 is 82.5 miles. This figure reflects the large size of IFA 4 and its predominantly rural characteristics.

Figure 19: IFA 4 Arterial Street Capacity Analysis – Municipalities and Unincorporated County

INPUT VARIABLES	First Projection Year	2007	Pinal County, Arizona	Year->						
				Base 2006	2 2008	4 2010	6 2012	8 2014	10 2016	
DEMAND DATA										
Single Family Detached Weekday VTE per Unit	9.57		SINGLE FAMILY DETACHED	2,178	2,216	2,255	2,294	2,332	2,371	
All Other Housing Weekday VTE per Unit	4.99		ALL OTHER TYPES OF HOUSING	1,617	1,635	1,652	1,669	1,687	1,704	
Retail Weekday VTE/KSF	86.56		COMMERCIAL KSF	225	229	232	236	240	244	
Office/Institutional Weekday VTE/KSF	18.35		OFFICE/INSTITUTIONAL KSF	312	314	316	318	320	321	
Industrial Flex Weekday VTE/KSF	6.97		INDUSTRIAL/FLEX KSF	34	35	36	37	38	39	
Residential Trip Adj Factor	56%		SINGLE FAMILY DETACHED TRIPS	11,712	11,920	12,128	12,335	12,543	12,751	
Commercial Trip Adj Factor	31%		ALL OTHER TYPES OF HOUSING TRIPS	4,536	4,584	4,633	4,682	4,731	4,779	
Other Nonresidential Trip Adj Factor	50%		COMMERCIAL TRIPS	6,038	6,137	6,239	6,341	6,446	6,551	
County Road Trips	100%		OFFICE/INSTITUTIONAL TRIPS	2,863	2,880	2,897	2,914	2,932	2,949	
Average Miles/Trip IFA	82.50		INDUSTRIAL/FLEX TRIPS	118	122	125	128	132	135	
Residential Trip Length	122%		TOTAL IFA ARTERIAL TRIPS	25,266	25,643	26,021	26,401	26,783	27,166	
Commercial Trip Length	68%		IFA ARTERIAL VMT	2,158,492	2,191,167	2,223,936	2,256,799	2,289,758	2,322,815	
Other Nonresidential Trip Length	75%		IFA ARTERIAL LN MI	248.1	251.9	255.6	259.4	263.2	267.0	
Ave. Arterial Capacity Per Lane	8,700		ANNUAL IFA ARTERIAL LN MI NEEDED		1.9	1.9	1.9	1.9	1.9	
			CUMULATIVE ARTERIAL LN MI NEEDED		3.8	7.5	11.3	15.1	18.9	

Cost per VMT for Planned Arterial Streets Allocated to Entire IFA 4

The planned cost to the County of \$23,941,001 for planned arterial streets is allocated to the total number of VMT's in 2016 (2,322,815). This results in a capacity cost of \$10.31 (\$23,941,001 / 2,322,815 VMT = \$10.31/VMT) to accommodate additional vehicle miles of travel from existing and new development in the entire IFA 4 on the planned 18.9 lane miles of planned arterial streets.

Figure 20: Planned Arterial Street Improvements Allocated to Entire IFA 4 – Average Approach

AVERAGE COST APPROACH - ALLOCATED TO ENTIRE IFA							
Roadway	From	To	Classification	New Lane Miles	Planned Cost to County	Planned Cost To Other Entities	TOTAL
Florence-Kelvin Hwy	SR 79	SR 177	Minor Arterial	18.9	\$23,941,001	\$0	\$23,941,001
				18.9	\$23,941,001	\$0	\$23,941,001
Total Cost to County							\$23,941,001
Total VMT's In IFA 4 in 2016 (Incorporated and Unincorporated)							2,322,815
Cost per VMT							\$10.31

IFA 5, 6, 7

Based on discussions with County staff, TischlerBise recommends the combining of IFA's 5, 6, and 7 for the Streets Development Fee. This is the result of a high degree of interconnectivity of the County's arterial street network among these three IFA's in this part of the County.

Figure 21 lists the planned arterial streets for IFA 5, 6, 7 over the next 10 years. These projects total 76.8 lane miles with a planned cost to the County of \$86,772,909. Note these figures **do not** include the planned State road projects for IFA 5, 6, 7 listed at the bottom of Figure 21.

Figure 21: Planned Arterial Streets IFA 5, 6, 7

MARGINAL COST APPROACH - ALLOCATED TO ENTIRE IFA

Roadway	From	To	Classification	Time Frame	New Lane Miles	Planned Cost to County	Planned Cost To Other Entities	TOTAL
Park Link Dr	SR 79	I-10	Minor Arterial	5-10 Years	18.0	\$28,183,333	\$0	\$28,183,333
Selma Hwy	Sunland Gin	SR 79	Minor Arterial	5-10 Years	27.4	\$30,093,647	\$0	\$30,093,647
					45.4	\$58,276,980	\$0	\$58,276,980

AVERAGE COST APPROACH - ALLOCATED TO UNINCORPORATED IFA

Roadway	From	To	Classification	Time Frame	New Lane Miles	Planned Cost to County	Planned Cost To Other Entities	TOTAL
Sunland Gin	Baumgartner	Selma Hwy	Minor Arterial	5-10 Years	31.4	\$28,495,929	\$0	\$28,495,929
					31.4	\$28,495,929	\$0	\$28,495,929

STATE ROAD PROJECTS (NOT INCLUDED IN DEVELOPMENT FEE CALCULATIONS)

Roadway	From	To	Classification	Time Frame	New Lane Miles	Planned Cost to County	Planned Cost To Other Entities	TOTAL
SR 79	Jct. US 60/SR79	Jct. Sr 77/SR79	Major Arterial	5-10 Years	88.0			\$2,376,000,000

Vehicle Miles of Travel on Planned Arterial Streets Allocated to Entire IFA 5, 6, 7

VMT is the product of the number of vehicle trips multiplied by the average trip length. Intermediate steps in deriving the average trip length include identification of the need for additional lane miles and defining lane capacity. These factors are discussed below.

Planned Lane Miles of Arterial Streets Being Demanded by Entire IFA 5, 6, 7

As shown in Figure 21 above, there are 45.4 lane miles of planned arterial streets demanded by new development in the entire IFA 5, 6, 7.

Vehicle Trips from Development in Entire IFA 5, 6, 7

Figure 22 below documents projected vehicle trips and VMT on the 45.4 lane miles of planned arterial streets associated with development in incorporated and unincorporated IFA 5, 6, 7 over the next ten years. The demographic data shown in the boxes at the top of the table are from the *Demographic Estimates and Development Projections* report.

Lane Capacity

The arterial improvements component is based on an average lane capacity standard for arterials of 8,700 vehicles per lane.

Average Trip Length

Knowing the increase in vehicle trips, lane miles needed to accommodate future travel, and lane capacity, it is possible to derive the average trip length on the planned arterial streets by the projected new residential and nonresidential growth in incorporated and unincorporated IFA 5, 6, 7 over the next ten years. 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 22, the average trip length on the planned arterial streets by future residential and nonresidential development in the entire IFA 5, 6, 7 is 5.74 miles.

Figure 22: IFA 5, 6, 7 Arterial Street Capacity Analysis – Municipalities and Unincorporated County

INPUT VARIABLES	First Projection Year	2007	Pinal County, Arizona	Year->					
				Base 2006	2 2008	4 2010	6 2012	8 2014	10 2016
DEMAND DATA									
Single Family Detached Weekday VTE per Unit		9.57	SINGLE FAMILY DETACHED	13,022	14,674	16,326	17,978	19,630	21,282
All Other Housing Weekday VTE per Unit		4.99	ALL OTHER TYPES OF HOUSING	3,658	4,072	4,486	4,900	5,314	5,728
Retail Weekday VTE/KSF		86.56	COMMERCIAL KSF	680	731	782	834	885	937
Office/Institutional Weekday VTE/KSF		18.35	OFFICE/INSTITUTIONAL KSF	1,129	1,178	1,227	1,276	1,325	1,374
Industrial Flex Weekday VTE/KSF		6.97	INDUSTRIAL/FLEX KSF	317	402	491	584	686	806
Residential Trip Adj Factor		56%	SINGLE FAMILY DETACHED TRIPS	70,035	78,920	87,805	96,690	105,575	114,460
Commercial Trip Adj Factor		31%	ALL OTHER TYPES OF HOUSING TRIPS	10,258	11,419	12,580	13,741	14,902	16,063
Other Nonresidential Trip Adj Factor		50%	COMMERCIAL TRIPS	18,247	19,616	20,990	22,370	23,757	25,150
County Road Trips		100%	OFFICE/INSTITUTIONAL TRIPS	10,359	10,809	11,260	11,710	12,161	12,611
Average Miles/Trip IFA		5.74	INDUSTRIAL/FLEX TRIPS	1,105	1,403	1,710	2,035	2,392	2,809
Residential Trip Length		122%	TOTAL IFA ARTERIAL TRIPS	110,003	122,166	134,344	146,546	158,786	171,092
Commercial Trip Length		68%	IFA ARTERIAL VMT	682,606	761,492	840,441	919,490	998,701	1,078,194
Other Nonresidential Trip Length		75%	IFA ARTERIAL LN MI	78.5	87.5	96.6	105.7	114.8	123.9
Ave. Arterial Capacity Per Lane		8,700	ANNUAL IFA ARTERIAL LN MI NEEDED		4.5	4.5	4.6	4.6	4.5
			CUMULATIVE ARTERIAL LN MI NEEDED		9.0	18.1	27.2	36.3	45.4

Cost per VMT for Planned Arterial Streets Allocated to Entire IFA 5, 6, 7

The planned cost to the County of \$58,276,980 for planned arterial streets is allocated to the net increase of 395,588 VMT's over the next ten years (1,078,194 VMT's in 2016 – 682,606 VMT's in 2006 = 395,588). This results in a capacity cost of \$147.32 (\$58,276,980/395,588 VMT = \$147.32/VMT) to accommodate additional vehicle miles of travel from new development in the entire IFA 5, 6, 7 on the planned 45.4 lane miles of planned arterial streets.

Figure 23: Planned Arterial Street Improvements Allocated to Entire IFA 5, 6, 7 – Marginal Approach

MARGINAL COST APPROACH - ALLOCATED TO ENTIRE IFA

Roadway	From	To	Classification	New Lane Miles	Planned Cost to County	Planned Cost To Other Entities	TOTAL
Park Link Dr	SR 79	I-10	Minor Arterial	18.0	\$28,183,333	\$0	\$28,183,333
Selma Hwy	Sunland Gin	SR 79	Minor Arterial	27.4	\$30,093,647	\$0	\$30,093,647
				45.4	\$58,276,980	\$0	\$58,276,980

Total Cost to County	\$58,276,980
Net Increase in VMT's In IFA 5,6,7 (Incorporated and Unincorporated)	395,588
Cost per VMT	\$147.32

Vehicle Miles of Travel on Planned Arterial Streets Allocated to Unincorporated IFA 5, 6, 7

VMT is the product of the number of vehicle trips multiplied by the average trip length. Intermediate steps in deriving the average trip length include identification of the need for additional lane miles and defining lane capacity. These factors are discussed below.

Planned Lane Miles of Arterial Streets Being Demanded by Unincorporated IFA 5, 6, 7

As shown in Figure 21 above, there are 31.4 lane miles of planned arterial streets demanded by new development in the unincorporated IFA 5, 6, 7.

Vehicle Trips from Development in Unincorporated IFA 5, 6, 7

Figure 24 below documents projected vehicle trips and VMT on the 31.4 lane miles of planned arterial streets associated with development in unincorporated IFA 5, 6, 7 over the next ten years. The demographic data shown in the boxes at the top of the table are from the *Demographic Estimates and Development Projections* report.

Lane Capacity

The arterial improvements component is based on an average lane capacity standard for arterials of 8,700 vehicles per lane.

Average Trip Length

Knowing the increase in vehicle trips, lane miles needed to accommodate future travel, and lane capacity, it is possible to derive the average trip length on the planned arterial streets by the current and projected new residential and nonresidential growth in unincorporated IFA 5, 6, 7 over the next ten years. 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 24, the average trip length on the planned arterial streets by future residential and nonresidential development in unincorporated IFA 2 is 4.43 miles.

Figure 24: IFA 5, 6, 7 Arterial Street Capacity Analysis –Unincorporated County

INPUT VARIABLES	First Projection Year	2007	Pinal County, Arizona	Year->					
				Base 2006	2 2008	4 2010	6 2012	8 2014	10 2016
DEMAND DATA									
Single Family Detached Weekday VTE per Unit		9.57	SINGLE FAMILY DETACHED	10,818	12,362	13,906	15,450	16,994	18,538
All Other Housing Weekday VTE per Unit		4.99	ALL OTHER TYPES OF HOUSING	2,020	2,356	2,692	3,028	3,364	3,700
Retail Weekday VTE/KSF		86.56	COMMERCIAL KSF	328	360	392	425	457	489
Office/Institutional Weekday VTE/KSF		18.35	OFFICE/INSTITUTIONAL KSF	639	680	721	762	802	843
Industrial Flex Weekday VTE/KSF		6.97	INDUSTRIAL/FLEX KSF	173	245	317	389	461	534
Residential Trip Adj Factor		56%	SINGLE FAMILY DETACHED TRIPS	58,181	66,485	74,789	83,093	91,397	99,701
Commercial Trip Adj Factor		31%	ALL OTHER TYPES OF HOUSING TRIPS	5,664	6,606	7,549	8,491	9,433	10,376
Other Nonresidential Trip Adj Factor		50%	COMMERCIAL TRIPS	8,801	9,665	10,529	11,392	12,256	13,119
County Road Trips		100%	OFFICE/INSTITUTIONAL TRIPS	5,863	6,238	6,613	6,988	7,363	7,737
Average Miles/Trip IFA		4.43	INDUSTRIAL/FLEX TRIPS	603	854	1,106	1,357	1,608	1,860
Residential Trip Length		122%	TOTAL IFA ARTERIAL TRIPS	79,112	89,849	100,585	111,321	122,057	132,794
Commercial Trip Length		68%	IFA ARTERIAL VMT	392,610	447,203	501,797	556,391	610,985	665,578
Other Nonresidential Trip Length		75%	IFA ARTERIAL LN MI	45.1	51.4	57.7	64.0	70.2	76.5
Ave. Arterial Capacity Per Lane		8,700	ANNUAL IFA ARTERIAL LN MI NEEDED		3.1	3.2	3.2	3.1	3.1
			CUMULATIVE ARTERIAL LN MI NEEDED		6.3	12.6	18.9	25.1	31.4

Cost per VMT for Planned Arterial Streets Allocated to Unincorporated IFA 5, 6, 7

The planned cost to the County of \$28,495,929 for planned arterial streets is allocated to the total number of VMT's in 2016 (665,578). This results in a capacity cost of \$42.81 ($\$28,495,929 / 665,578 \text{ VMT} = \$42.81/\text{VMT}$) to accommodate additional vehicle miles of travel from existing and new development in the unincorporated IFA 5, 6, 7 on the planned 31.4 lane miles of planned arterial streets.

Figure 25: Planned Arterial Street Improvements Allocated to Unincorporated IFA 5, 6, 7 – Average Approach

AVERAGE COST APPROACH - ALLOCATED TO UNINCORPORATED IFA

Roadway	From	To	Classification	New Lane Miles	Planned Cost to County	Planned Cost To Other Entities	TOTAL
Sunland Gin	Baumgartner	Selma Hwy	Minor Arterial	31.4	\$28,495,929	\$0	\$28,495,929
				31.4	\$28,495,929	\$0	\$28,495,929
						Total Cost to County	\$28,495,929
						Total VMT's In IFA 5,6,7 in 2016 (Unincorporated)	665,578
						Cost per VMT	\$42.81

STREET SUPPORT FACILITIES

The County plans to maintain the LOS for street support facilities it is currently providing to existing residential and nonresidential development in unincorporated Pinal County. The County is responsible for supporting only those portions of its streets in the unincorporated County while the municipalities maintain the County streets within their boundaries. New residential and nonresidential development in unincorporated Pinal County will create demand for additional street support facilities in order for the current LOS to be maintained. If additional facilities are not provided to new development, the LOS will decline as the same number of facilities will be serving a larger development base.

Vehicle trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* are used to measure and differentiate the demand for additional street support facilities between land uses.

Planned LOS Analysis

As mentioned above, the County plans to maintain the current LOS in the unincorporated County for street support facilities. The first step of formulating the CIP for these facilities is an analysis of the current LOS for being provided to existing development.

Figure 26 lists the current 57,782 square feet of support facilities. The current support facilities LOS for existing development in Pinal County is calculated as follows: $(57,782 \text{ square feet} / 364,266 \text{ vehicle trips from existing development in unincorporated Pinal County} = .16 \text{ square feet per trip}$.

Figure 26: Current LOS Analysis for Street Support Facilities

<i>Facility</i>	<i>Square Feet*</i>
Sign Shop	2,328
Bridge Crew/Pavement Preservation	2,904
Apache Junction	3,345
Casa Grande	6,716
Oracle	2,662
Arizona City	6,036
Construction	1,349
Florence	887
Survey	160
Building F in Florence	11,936
Fleet Services	19,460
TOTAL	57,782
<i>2006 Demand Units in Unincorporated Pinal County**</i>	
Average Weekday Vehicle Trips	364,266
<i>Current Level-of-Service</i>	
Square Feet per Vehicle Trip	0.16

* Pinal County Department of Public Works.

** Taken from Figures 16, Demographic Estimates and Development Projections.

Planned Cost Analysis

The Pinal County Department of Public Works estimates the current support facilities to have a total value of \$2,443,000, an average of \$42.28 per square foot ($\$2,443,000/57,782$ square feet = \$42.28). This results in a cost factor of \$6.71 per vehicle trip in order to maintain the current LOS. This is calculated by multiplying the current LOS of .16 square feet per trip by \$42.28 per square foot ($.16 \times \$42.28 = \6.71).

Figure 27: Street Support Facilities Cost Standards

<i>Facility</i>	<i>Square Feet*</i>	<i>Total Cost*</i>
Sign Shop	2,328	\$45,000
Bridge Crew/Pavement Preservation	2,904	\$60,000
Apache Junction	3,345	\$140,000
Casa Grande	6,716	\$450,000
Oracle	2,662	\$150,000
Arizona City	6,036	\$260,000
Construction	1,349	\$50,000
Florence	887	\$100,000
Survey	160	\$8,000
Building F in Florence	11,936	\$1,000,000
Fleet Services	19,460	\$180,000
TOTAL	57,782	\$2,443,000

* Pinal County Department of Public Works.

Average Cost per Square Foot	\$42.28
<i>Current Level-of-Service</i>	
Square Feet per Vehicle Trip	0.16
<i>Cost Factor</i>	
Average Cost Per Square Foot	\$42.28
<i>Cost</i>	
Per Vehicle Trip	\$6.71

CIP for Street Support Facilities

Using residential and nonresidential development projections for unincorporated Pinal County by IFA from the *Demographic Estimates and Development Projections* report in conjunction with the current LOS analysis data from Figure 26 and the cost standards from Figure 27, TischlerBise developed the following CIP for street support facilities for new growth for each IFA over the next five years. The number of square feet and capital expenditures is projected for each IFA. Using development in IFA 1 in the first year as an example, the number of square feet demanded by new growth in order to maintain the current LOS and the cost is calculated as follows:

$$22,792 \text{ vehicle trips from new development} \times .16 \text{ square foot/trip} = 3,615 \text{ square feet}$$

$$3,615 \text{ square feet} \times \$42.48/\text{square foot} = \$152,860$$

STREETS CIP FOR NEW GROWTH AND DEVELOPMENT FEES – PINAL COUNTY, ARIZONA

This calculation is repeated for the other IFA’s using the corresponding demand figures, LOS data, and cost standards.

Figure 28: 5 Year CIP for Street Support Facilities by IFA

IFA 1						
Projected Average Weekday Trips Unincorporated IFA 1	2007	2008	2009	2010	2011	2012
	236,342	259,134	281,927	304,719	327,512	350,304
Net Change During Year Unincorporated IFA 1	22,792	22,792	22,792	22,792	22,792	
Street Support Facilities Square Feet per Trip	0.16	0.16	0.16	0.16	0.16	
						<i>5 Year Total</i>
TOTAL STREET SUPPORT FACILITIES SQUARE FOOTAGE DEMANDED BY UNINCORPORATED IFA 1	3,615	3,615	3,615	3,615	3,615	18,077
Average Cost per Square Foot	\$42.28	\$42.28	\$42.28	\$42.28	\$42.28	
						<i>5 Year Total</i>
TOTAL STREETSUPPORT FACILITIES SQUARE FOOTAGE CAPITAL COSTS UNINCORPORATED IFA 1	\$152,860	\$152,860	\$152,860	\$152,860	\$152,860	\$764,304
IFA 2						
Projected Average Weekday Trips Unincorporated IFA 2	2007	2008	2009	2010	2011	2012
	52,302	53,427	54,553	55,679	56,804	57,930
Net Change During Year Unincorporated IFA 2	1,126	1,126	1,126	1,126	1,126	
Street Support Facilities Square Feet per Trip	0.16	0.16	0.16	0.16	0.16	
						<i>5 Year Total</i>
TOTAL STREET SUPPORT FACILITIES SQUARE FOOTAGE DEMANDED BY UNINCORPORATED IFA 2	179	179	179	179	179	893
Average Cost per Square Foot	\$42.28	\$42.28	\$42.28	\$42.28	\$42.28	
						<i>5 Year Total</i>
TOTAL STREETSUPPORT FACILITIES SQUARE FOOTAGE CAPITAL COSTS UNINCORPORATED IFA 2	\$7,549	\$7,549	\$7,549	\$7,549	\$7,549	\$37,744
IFA 3						
Projected Average Weekday Trips Unincorporated IFA 3	2007	2008	2009	2010	2011	2012
	23,794	24,941	26,088	27,236	28,383	29,530
Net Change During Year Unincorporated IFA 3	1,147	1,147	1,147	1,147	1,147	
Street Support Facilities Square Feet per Trip	0.16	0.16	0.16	0.16	0.16	
						<i>5 Year Total</i>
TOTAL STREET SUPPORT FACILITIES SQUARE FOOTAGE DEMANDED BY UNINCORPORATED IFA 3	182	182	182	182	182	910
Average Cost per Square Foot	\$42.28	\$42.28	\$42.28	\$42.28	\$42.28	
						<i>5 Year Total</i>
TOTAL STREETSUPPORT FACILITIES SQUARE FOOTAGE CAPITAL COSTS UNINCORPORATED IFA 3	\$7,694	\$7,694	\$7,694	\$7,694	\$7,694	\$38,468
IFA 4						
Projected Average Weekday Trips Unincorporated IFA 4	2007	2008	2009	2010	2011	2012
	4,859	4,893	4,927	4,962	4,996	5,030
Net Change During Year Unincorporated IFA 4	34	34	34	34	34	
Street Support Facilities Square Feet per Trip	0.16	0.16	0.16	0.16	0.16	
						<i>5 Year Total</i>
TOTAL STREET SUPPORT FACILITIES SQUARE FOOTAGE DEMANDED BY UNINCORPORATED IFA 4	5.43	5.43	5.43	5.43	5.43	27.17
Average Cost per Square Foot	\$42.28	\$42.28	\$42.28	\$42.28	\$42.28	
						<i>5 Year Total</i>
TOTAL STREETSUPPORT FACILITIES SQUARE FOOTAGE CAPITAL COSTS UNINCORPORATED IFA 4	\$230	\$230	\$230	\$230	\$230	\$1,149
IFA 5, 6, 7						
Projected Average Weekday Trips Unincorporated IFA 5,6,7	2007	2008	2009	2010	2011	2012
	76,927	81,785	86,643	91,501	96,359	101,218
Net Change During Year Unincorporated IFA 5,6,7	4,858	4,858	4,858	4,858	4,858	
Street Support Facilities Square Feet per Trip	0.16	0.16	0.16	0.16	0.16	
						<i>5 Year Total</i>
TOTAL STREET SUPPORT FACILITIES SQUARE FOOTAGE DEMANDED BY UNINCORPORATED IFA 5,6,7	771	771	771	771	771	3,853
Average Cost per Square Foot	\$42.28	\$42.28	\$42.28	\$42.28	\$42.28	
						<i>5 Year Total</i>
TOTAL STREETSUPPORT FACILITIES SQUARE FOOTAGE CAPITAL COSTS UNINCORPORATED IFA 5,6,7	\$32,582	\$32,582	\$32,582	\$32,582	\$32,582	\$162,908

STREET SUPPORT VEHICLES & EQUIPMENT

The County plans to maintain the LOS for street support vehicles and equipment it is currently providing to existing residential and nonresidential development in unincorporated Pinal County. The County is responsible for supporting only those portions of its streets in the unincorporated County while the municipalities maintain the County streets within their boundaries. New residential and nonresidential development in unincorporated Pinal County will create demand for additional street support vehicles and equipment in order for the current LOS to be maintained. If additional vehicles and equipment are not provided to new development, the LOS will decline as the same number of vehicles and equipment will be serving a larger development base.

Vehicle trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* are used to measure and differentiate the demand for additional street support vehicles and equipment between land uses.

Planned LOS Analysis

As mentioned above, the County plans to maintain the current LOS for the unincorporated County for street support vehicles and equipment. The first step of formulating the CIP for these assets is an analysis of the current LOS for being provided to existing development.

Figure 29 lists the current fleet of 301 support vehicles and pieces of equipment. The current support vehicles and equipment LOS for existing development in Pinal County is calculated as follows: $(301 \text{ units} / 364,266 \text{ vehicle trips from existing development in Pinal County}) = .0008 \text{ vehicles/pieces of equipment per trip}$.

Figure 29: Current LOS Analysis for Street Support Vehicles & Equipment

<i>Equipment</i>	<i>Number of Units*</i>
Light Set	3
Trailer (various types)	29
Steam Cleaner	2
Towmaster	2
Compressor	3
Welder	3
Forklift	5
Sedan	2
Carlson Charger Tank	1
Pickup Truck (various types)	77
Van	5
SUV (various types)	21
Flatbed Truck	5
Patch Truck	2
Sign Truck	4
Service Body Truck (various types)	8
Loader (various types)	15
Sweepmaster	4
Roller	1
Tractor	3
Patcher	2
Dump Truck	7
Sealer	2
Backhoe	3
Compactor	2
Chip Spreader	3
Water Trailer	10
Water Truck	13
Tractor Truck	27
Roll Off Container	1
Sweeper	2
Grader	30
John Deere Water Pull	1
Scraper	1
Cat with Pull	1
Bulldozer	1
TOTAL	301

*2006 Demand Units in Unincorporated Pinal County***

Average Weekday Vehicle Trips 364,266

Current Level-of-Service

Equipment per Vehicle Trip 0.0008

* Pinal County Department of Public Works.

** Taken from Figures 16, *Demographic Estimates and Development Projections*.

Planned Cost Analysis

The Pinal County Department of Public Works estimates the current fleet of support vehicles and equipment to have a total value of \$25,204,400, an average of \$83,736 per unit ($\$25,204,400/301$ vehicles/pieces of equipment = \$83,736). This results in a cost factor of \$69.19 per vehicle trip in order to maintain the current LOS. This is calculated by multiplying the current LOS of .0008 vehicles/pieces of equipment by \$83,736 per unit ($.0008 \times \$83,736 = \69.19).

Figure 30: Street Support Vehicles & Equipment Cost Standards

<i>Equipment</i>	<i>Number of Units*</i>	<i>Total Cost*</i>
Light Set	3	\$3,000
Trailer (various types)	29	\$712,000
Steam Cleaner	2	\$4,400
Towmaster	2	\$18,000
Compressor	3	\$45,000
Welder	3	\$45,000
Forklift	5	\$100,000
Sedan	2	\$44,000
Carlson Charger Tank	1	\$25,000
Pickup Truck (various types)	77	\$2,056,000
Van	5	\$130,000
SUV (various types)	21	\$627,000
Flatbed Truck	5	\$175,000
Patch Truck	2	\$70,000
Sign Truck	4	\$140,000
Service Body Truck (various types)	8	\$385,000
Loader (various types)	15	\$3,090,000
Sweepmaster	4	\$265,000
Roller	1	\$50,000
Tractor	3	\$150,000
Patcher	2	\$104,000
Dump Truck	7	\$675,000
Sealer	2	\$110,000
Backhoe	3	\$285,000
Compactor	2	\$200,000
Chip Spreader	3	\$450,000
Water Trailer	10	\$1,300,000
Water Truck	13	\$1,775,000
Tractor Truck	27	\$3,470,000
Roll Off Container	1	\$131,000
Sweeper	2	\$330,000
Grader	30	\$6,750,000
John Deere Water Pull	1	\$225,000
Scraper	1	\$340,000
Cat with Pull	1	\$375,000
Bulldozer	1	\$550,000
TOTAL	301	\$25,204,400

* Pinal County Department of Public Works.

Average Cost per Piece of Equipment	\$83,736
<i>Current Level-of-Service</i>	
Equipment per Vehicle Trip	0.0008
<i>Cost Factor</i>	
Average Cost Per Piece of Equipment	\$83,736
<i>Cost</i>	
Per Vehicle Trip	\$69.19

CIP for Street Support Facilities

Using residential and nonresidential development projections for unincorporated Pinal County by IFA from the *Demographic Estimates and Development Projections* report in conjunction with the current LOS analysis data from Figure 29 and the cost standards from Figure 30, TischlerBise developed the following CIP for street support vehicles and equipment for new growth for each IFA over the next five years. The number of vehicles and pieces of equipment and capital expenditures is projected for each IFA. Using development in IFA 1 in the first year as an example, the number of vehicles/pieces of equipment demanded by new growth in order to maintain the current LOS and the cost is calculated as follows:

$$22,792 \text{ vehicle trips from new development} \times .0008 \text{ units/trip} = 19 \text{ vehicles/pieces of equipment}$$

$$19 \text{ units} \times \$83.736/\text{vehicle/piece of equipment} = \$1,577,058$$

This calculation is repeated for the other IFA's using the corresponding demand figures, LOS data, and cost standards.

STREETS CIP FOR NEW GROWTH AND DEVELOPMENT FEES – PINAL COUNTY, ARIZONA

Figure 31: 5 Year CIP for Street Support Vehicles & Equipment by IFA

IFA 1	2007	2008	2009	2010	2011	2012	
Projected Average Weekday Trips Unincorporated IFA 1	236,342	259,134	281,927	304,719	327,512	350,304	
Net Change During Year Unincorporated IFA 1	22,792	22,792	22,792	22,792	22,792		
Street Equipment per Trip	0.0008	0.0008	0.0008	0.0008	0.0008		
TOTAL STREET EQUIPMENT DEMANDED BY UNINCORPORATED IFA 1	19	19	19	19	19		5 Year Total 94
Average Cost per Piece of Equipment	\$83,736	\$83,736	\$83,736	\$83,736	\$83,736		
TOTAL STREET EQUIPMENT CAPITAL COSTS UNINCORPORATED IFA 1	\$1,577,058	\$1,577,058	\$1,577,058	\$1,577,058	\$1,577,058		5 Year Total \$7,885,290
IFA 2	2007	2008	2009	2010	2011	2012	
Projected Average Weekday Trips Unincorporated IFA 2	52,302	53,427	54,553	55,679	56,804	57,930	
Net Change During Year Unincorporated IFA 2	1,126	1,126	1,126	1,126	1,126		
Street Equipment per Trip	0.0008	0.0008	0.0008	0.0008	0.0008		
TOTAL STREET EQUIPMENT DEMANDED BY UNINCORPORATED IFA 2	0.9	0.9	0.9	0.9	0.9		5 Year Total 5
Average Cost per Piece of Equipment	\$83,736	\$83,736	\$83,736	\$83,736	\$83,736		
TOTAL STREET EQUIPMENT CAPITAL COSTS UNINCORPORATED IFA 2	\$77,881	\$77,881	\$77,881	\$77,881	\$77,881		5 Year Total \$389,404
IFA 3	2007	2008	2009	2010	2011	2012	
Projected Average Weekday Trips Unincorporated IFA 3	23,794	24,941	26,088	27,236	28,383	29,530	
Net Change During Year Unincorporated IFA 3	1,147	1,147	1,147	1,147	1,147		
Street Equipment per Trip	0.0008	0.0008	0.0008	0.0008	0.0008		
TOTAL STREET EQUIPMENT DEMANDED BY UNINCORPORATED IFA 3	0.9	0.9	0.9	0.9	0.9		5 Year Total 5
Average Cost per Piece of Equipment	\$83,736	\$83,736	\$83,736	\$83,736	\$83,736		
TOTAL STREET EQUIPMENT CAPITAL COSTS UNINCORPORATED IFA 3	\$79,375	\$79,375	\$79,375	\$79,375	\$79,375		5 Year Total \$396,877
IFA 4	2007	2008	2009	2010	2011	2012	
Projected Average Weekday Trips Unincorporated IFA 4	4,859	4,893	4,927	4,962	4,996	5,030	
Net Change During Year Unincorporated IFA 4	34	34	34	34	34		
Street Equipment per Trip	0.0008	0.0008	0.0008	0.0008	0.0008		
TOTAL STREET EQUIPMENT DEMANDED BY UNINCORPORATED IFA 4	0.03	0.03	0.03	0.03	0.03		5 Year Total 0.14
Average Cost per Piece of Equipment	\$83,736	\$83,736	\$83,736	\$83,736	\$83,736		
TOTAL STREET EQUIPMENT CAPITAL COSTS UNINCORPORATED IFA 4	\$2,370	\$2,370	\$2,370	\$2,370	\$2,370		5 Year Total \$11,852
IFA 5,6,7	2007	2008	2009	2010	2011	2012	
Projected Average Weekday Trips Unincorporated IFA 5,6,7	76,927	81,785	86,643	91,501	96,359	101,218	
Net Change During Year Unincorporated IFA 5,6,7	4,858	4,858	4,858	4,858	4,858		
Street Equipment per Trip	0.0008	0.0008	0.0008	0.0008	0.0008		
TOTAL STREET EQUIPMENT DEMANDED BY UNINCORPORATED IFA 5,6,7	4	4	4	4	4		5 Year Total 20
Average Cost per Piece of Equipment	\$83,736	\$83,736	\$83,736	\$83,736	\$83,736		
TOTAL STREET EQUIPMENT CAPITAL COSTS UNINCORPORATED IFA 5,6,7	\$336,144	\$336,144	\$336,144	\$336,144	\$336,144		5 Year Total \$1,680,718

CIP AND DEVELOPMENT FEE STUDY

The County should update its study every three years to ensure the CIP, assumptions, and cost factors used in the calculations are still valid and accurate and that new growth will receive a substantial benefit from the development fees. TischlerBise has included the cost of preparing the current Streets CIP and Development Fees in the calculations in order to create a source of funding to conduct this regular update. The cost of this study (\$74,300) is allocated to the projected increase in average weekday vehicles trips over the next three years. This results in a development fee study cost per demand unit of \$.22 per trip.

Streets Development Fees

The planned costs per VMT for arterial streets and the planned LOS and costs for street support facilities, vehicles, and equipment are used to calculate the Streets Development Fee. Under state law, developers may be eligible for site-specific credits or reimbursements only if they provide infrastructure that is included in the Streets CIP. Specific policies and procedures related to site-specific credits for system improvements are addressed in the ordinance that establishes the County's fees. Project improvements normally required as part of the development approval process are not eligible for credits against development fees.

IFA 1 STREETS DEVELOPMENT FEES

Capital cost for the average length trip is shown at the bottom of Figure 32. For the planned arterial streets, the cost for the average trip length is calculated by multiplying the average trip length multiplied by the trip length adjustment factor and the capital cost per vehicle mile of travel. For example, the capital cost for planned arterial streets demanded by the entire IFA for residential development is 1.69 miles, times 1.22 times \$249.96, or \$516.58 per trip. This is repeated for commercial and other nonresidential land uses.

Costs for planned support facilities, vehicles, equipment, and the development fee study are added to the costs for planned arterial streets.

Figure 32: Streets Development Fee Demand and Cost Summary – IFA 1

ITE Code	Residential	Commercial/ Shopping Ctrs	Other Nonres
Weekday Vehicle Trip Ends			
<u>Residential (per Housing Unit)</u>			
210 Single Family	9.57		
240 All Other Types of Housing	4.99		
<u>Nonresidential (per Square Foot of Floor Area)</u>			
820 Com / Shop Ctr 25,000 SF or less		0.11032	
820 Com / Shop Ctr 25,001-50,000 SF		0.08656	
820 Com / Shop Ctr 50,001-100,000 SF		0.06791	
820 Com / Shop Ctr 100,001-200,000 SF		0.05328	
820 Com / Shop Ctr over 200,000 SF		0.04180	
710 Office / Inst 10,000 SF or less			0.02266
710 Office / Inst 10,001-25,000 SF			0.01835
710 Office / Inst 25,001-50,000 SF			0.01565
710 Office / Inst 50,001-100,000 SF			0.01334
710 Office / Inst over 100,000 SF			0.01137
770 Business Park			0.01276
110 Light Industrial			0.00697
150 Warehousing			0.00496
140 Manufacturing			0.00382
310 Hotel (per room)			5.63
Trip Adjustment Factors	56%		50%
Com / Shop Ctr 25,000 SF or less		28%	
Com / Shop Ctr 25,001-50,000 SF		31%	
Com / Shop Ctr 50,001-100,000 SF		33%	
Com / Shop Ctr 100,001-200,000 SF		36%	
Com / Shop Ctr over 200,000 SF		39%	
Planned Cost Summary			
Planned Arterials Demanded by Total IFA - Ave. Trip Length (miles)	1.69	1.69	1.69
Average Trip Length Adjustment	122%	68%	75%
Planned Arterials Demanded by Total IFA - Cost Per VMT	\$249.96	\$249.96	\$249.96
Planned Arterials Demanded by Total IFA - Cost for Ave. Length Trip	\$516.58	\$287.93	\$317.57
Planned Arterials Demanded by Unincorp IFA - Ave. Trip Length (miles)	2.99	2.99	2.99
Average Trip Length Adjustment	122%	68%	75%
Planned Arterials Demanded by Unincorp IFA - Cost Per VMT	\$239.08	\$239.08	\$239.08
Planned Arterials Demanded by Unincorp IFA - Cost for Ave. Length Trip	\$872.12	\$486.10	\$536.14
Support Facilities Cost Per Trip	\$6.71	\$6.71	\$6.71
Support Vehicle/Equip Cost Per Trip	\$69.19	\$69.19	\$69.19
Development Fee Study Cost Per Trip	\$0.30	\$0.30	\$0.30
Net Capital Cost Per Trip	\$1,464.90	\$850.23	\$929.91

The input variables listed above are used to derive the development fees shown in Figure 33 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 Street Development Fee for a single-family house is calculated as follows:

$$9.57 \times .56 \times \$1,464.90 = \$7,850 \text{ per single family detached unit}$$

Figure 33: Streets Development Fee Schedule – IFA 1

Development Fees

Residential (per housing unit)

- 210 Single Family
- 240 All Other Types of Housing

Nonresidential Per Square Foot of Floor Area

- 820 Commercial / Shopping Center 25,000 SF or less
- 820 Commercial / Shopping Center 25,001-50,000 SF
- 820 Commercial/Shopping Center 50,001-100,000 SF
- 820 Commercial/Shopping Center 100,001-200,000 SF
- 820 Commercial/Shopping Center over 200,000 SF
- 710 Office 10,000 SF or less
- 710 Office 10,001-25,000 SF
- 710 Office 25,001-50,000 SF
- 710 Office 50,001-100,000 SF
- 710 Office 100,000 SF
- 770 Business Park
- 110 Light Industrial
- 150 Warehousing
- 140 Manufacturing
- 310 Hotel (per room)

Residential	Commercial/ Shopping Ctrs	Other Nonres
\$7,850		
\$4,093		
	\$26.26	
	\$22.81	
	\$19.05	
	\$16.30	
	\$13.86	
		\$10.53
		\$8.53
		\$7.27
		\$6.20
		\$5.28
		\$5.93
		\$3.24
		\$2.30
		\$1.77
		\$2,618

IFA 2 STREETS DEVELOPMENT FEES

Capital cost for the average length trip is shown at the bottom of Figure 34. For the planned arterial streets, the cost for the average trip length is calculated by multiplying the average trip length multiplied by the trip length adjustment factor and the capital cost per vehicle mile of travel. For example, the capital cost for planned arterial streets demanded by the entire IFA for residential development is 2.92 miles, times 1.22 times \$181.55, or \$646.96 per trip. This is repeated for commercial and other nonresidential land uses.

Costs for planned support facilities, vehicles, equipment, and the development fee study are added to the costs for planned arterial streets.

Figure 34: Streets Development Fee Demand and Cost Summary – IFA 2

ITE Code	Residential	Commercial / Shopping Ctrs	Other Nonres
Weekday Vehicle Trip Ends			
<u>Residential (per Housing Unit)</u>			
210 Single Family	9.57		
240 All Other Types of Housing	4.99		
<u>Nonresidential (per Square Foot of Floor Area)</u>			
820 Com / Shop Ctr 25,000 SF or less		0.11032	
820 Com / Shop Ctr 25,001-50,000 SF		0.08656	
820 Com / Shop Ctr 50,001-100,000 SF		0.06791	
820 Com / Shop Ctr 100,001-200,000 SF		0.05328	
820 Com / Shop Ctr over 200,000 SF		0.04180	
710 Office / Inst 10,000 SF or less			0.02266
710 Office / Inst 10,001-25,000 SF			0.01835
710 Office / Inst 25,001-50,000 SF			0.01565
710 Office / Inst 50,001-100,000 SF			0.01334
710 Office / Inst over 100,000 SF			0.01137
770 Business Park			0.01276
110 Light Industrial			0.00697
150 Warehousing			0.00496
140 Manufacturing			0.00382
310 Hotel (per room)			5.63
Trip Adjustment Factors	56%		50%
Com / Shop Ctr 25,000 SF or less		28%	
Com / Shop Ctr 25,001-50,000 SF		31%	
Com / Shop Ctr 50,001-100,000 SF		33%	
Com / Shop Ctr 100,001-200,000 SF		36%	
Com / Shop Ctr over 200,000 SF		39%	
Planned Cost Summary			
Planned Arterials Demanded by Total IFA - Ave. Trip Length (miles)	2.92	2.92	2.92
Average Trip Length Adjustment	122%	68%	75%
Planned Arterials Demanded by Total IFA - Cost Per VMT	\$181.55	\$181.55	\$181.55
Planned Arterials Demanded by Total IFA - Cost for Ave. Length Trip	\$646.96	\$360.60	\$397.72
Planned Arterials Demanded by Unincorp IFA - Ave. Trip Length (miles)	10.40	10.40	10.40
Average Trip Length Adjustment	122%	68%	75%
Planned Arterials Demanded by Unincorp IFA - Cost Per VMT	\$59.46	\$59.46	\$59.46
Planned Arterials Demanded by Unincorp IFA - Cost for Ave. Length Trip	\$754.40	\$420.49	\$463.77
Support Facilities Cost Per Trip	\$6.71	\$6.71	\$6.71
Support Vehicle/Equip Cost Per Trip	\$69.19	\$69.19	\$69.19
Development Fee Study Cost Per Trip	\$0.30	\$0.30	\$0.30
Net Capital Cost Per Trip	\$1,477.56	\$857.28	\$937.69

The input variables listed above are used to derive the development fees shown in Figure 35 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 Street Development Fee for a single-family house is calculated as follows:

$$9.57 \times .56 \times \$1,477.56 = \$7,918 \text{ per single family detached unit}$$

Figure 35: Streets Development Fee Schedule – IFA 2

<i>Development Fees</i>	Residential	Commercial / Shopping Ctrs	Other Nonres
<i>Residential (per housing unit)</i>			
210 Single Family	\$7,918		
240 All Other Types of Housing	\$4,128		
<i>Nonresidential Per Square Foot of Floor Area</i>			
820 Commercial / Shopping Center 25,000 SF or less		\$26.48	
820 Commercial / Shopping Center 25,001-50,000 SF		\$23.00	
820 Commercial/Shopping Center 50,001-100,000 SF		\$19.21	
820 Commercial/Shopping Center 100,001-200,000 SF		\$16.44	
820 Commercial/Shopping Center over 200,000 SF		\$13.97	
710 Office 10,000 SF or less			\$10.62
710 Office 10,001-25,000 SF			\$8.60
710 Office 25,001-50,000 SF			\$7.33
710 Office 50,001-100,000 SF			\$6.25
710 Office 100,000 SF			\$5.33
770 Business Park			\$5.98
110 Light Industrial			\$3.26
150 Warehousing			\$2.32
140 Manufacturing			\$1.79
310 Hotel (per room)			\$2,640

IFA 3 STREETS DEVELOPMENT FEES

Capital cost for the average length trip is shown at the bottom of Figure 36. For the planned arterial streets, the cost for the average trip length is calculated by multiplying the average trip length multiplied by the trip length adjustment factor and the capital cost per vehicle mile of travel. For example, the capital cost for planned arterial streets demanded by the entire IFA for residential development is 5.67 miles, times 1.22 times \$175.59, or \$1,214.61 per trip. This is repeated for commercial and other nonresidential land uses.

Costs for planned support facilities, vehicles, equipment, and the development fee study are added to the costs for planned arterial streets.

Figure 36: Streets Development Fee Demand and Cost Summary – IFA 3

<i>ITE Code</i>	Residential	Commercial / Shopping Ctrs	Other Nonres
<i>Weekday Vehicle Trip Ends</i>			
<i>Residential (per Housing Unit)</i>			
210 Single Family	9.57		
240 All Other Types of Housing	4.99		
<i>Nonresidential (per Square Foot of Floor Area)</i>			
820 Com / Shop Ctr 25,000 SF or less		0.11032	
820 Com / Shop Ctr 25,001-50,000 SF		0.08656	
820 Com / Shop Ctr 50,001-100,000 SF		0.06791	
820 Com / Shop Ctr 100,001-200,000 SF		0.05328	
820 Com / Shop Ctr over 200,000 SF		0.04180	
710 Office / Inst 10,000 SF or less			0.02266
710 Office / Inst 10,001-25,000 SF			0.01835
710 Office / Inst 25,001-50,000 SF			0.01565
710 Office / Inst 50,001-100,000 SF			0.01334
710 Office / Inst over 100,000 SF			0.01137
770 Business Park			0.01276
110 Light Industrial			0.00697
150 Warehousing			0.00496
140 Manufacturing			0.00382
310 Hotel (per room)			5.63
<i>Trip Adjustment Factors</i>	56%		50%
Com / Shop Ctr 25,000 SF or less		28%	
Com / Shop Ctr 25,001-50,000 SF		31%	
Com / Shop Ctr 50,001-100,000 SF		33%	
Com / Shop Ctr 100,001-200,000 SF		36%	
Com / Shop Ctr over 200,000 SF		39%	
<i>Planned Cost Summary</i>			
Planned Arterials Demanded by Total IFA - Ave. Trip Length	5.67	5.67	5.67
Average Trip Length Adjustment	122%	68%	75%
Planned Arterials Demanded by Total IFA - Cost Per VMT	\$175.59	\$175.59	\$175.59
Planned Arterials Demanded by Total IFA - Cost for Ave. I	\$1,214.61	\$677.00	\$746.69
Support Facilities Cost Per Trip	\$6.71	\$6.71	\$6.71
Support Vehicle/Equip Cost Per Trip	\$69.19	\$69.19	\$69.19
Development Fee Study Cost Per Trip	\$0.30	\$0.30	\$0.30
Net Capital Cost Per Trip	\$1,290.81	\$753.20	\$822.89

The input variables listed above are used to derive the development fees shown in Figure 37 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 Street Development Fee for a single-family house is calculated as follows:

$$9.57 \times .56 \times \$1,290.81 = \$6,917 \text{ per single family detached unit}$$

Figure 37: Streets Development Fee Schedule – IFA 3

<i>Development Fees</i>	Residential	Commercial / Shopping Ctrs	Other Nonres
<u>Residential (per housing unit)</u>			
210 Single Family	\$6,917		
240 All Other Types of Housing	\$3,607		
<u>Nonresidential Per Square Foot of Floor Area</u>			
820 Commercial / Shopping Center 25,000 SF or less		\$23.26	
820 Commercial / Shopping Center 25,001-50,000 SF		\$20.21	
820 Commercial/Shopping Center 50,001-100,000 SF		\$16.87	
820 Commercial/Shopping Center 100,001-200,000 SF		\$14.44	
820 Commercial/Shopping Center over 200,000 SF		\$12.27	
710 Office 10,000 SF or less			\$9.32
710 Office 10,001-25,000 SF			\$7.54
710 Office 25,001-50,000 SF			\$6.43
710 Office 50,001-100,000 SF			\$5.48
710 Office 100,000 SF			\$4.67
770 Business Park			\$5.25
110 Light Industrial			\$2.86
150 Warehousing			\$2.04
140 Manufacturing			\$1.57
310 Hotel (per room)			\$2,316

IFA 4 STREETS DEVELOPMENT FEES

Capital cost for the average length trip is shown at the bottom of Figure 38. For the planned arterial streets, the cost for the average trip length is calculated by multiplying the average trip length multiplied by the trip length adjustment factor and the capital cost per vehicle mile of travel. For example, the capital cost for planned arterial streets demanded by the entire IFA for residential development is 82.5 miles, times 1.22 times \$10.31, or \$1,037.39 per trip. This is repeated for commercial and other nonresidential land uses.

Costs for planned support facilities, vehicles, equipment, and the development fee study are added to the costs for planned arterial streets.

Figure 38: Streets Development Fee Demand and Cost Summary – IFA 4

<i>ITE Code</i>	Residential	Commercial / Shopping Ctrs	Other Nonres
<i>Weekday Vehicle Trip Ends</i>			
<i>Residential (per Housing Unit)</i>			
210 Single Family	9.57		
240 All Other Types of Housing	4.99		
<i>Nonresidential (per Square Foot of Floor Area)</i>			
820 Com / Shop Ctr 25,000 SF or less		0.11032	
820 Com / Shop Ctr 25,001-50,000 SF		0.08656	
820 Com / Shop Ctr 50,001-100,000 SF		0.06791	
820 Com / Shop Ctr 100,001-200,000 SF		0.05328	
820 Com / Shop Ctr over 200,000 SF		0.04180	
710 Office / Inst 10,000 SF or less			0.02266
710 Office / Inst 10,001-25,000 SF			0.01835
710 Office / Inst 25,001-50,000 SF			0.01565
710 Office / Inst 50,001-100,000 SF			0.01334
710 Office / Inst over 100,000 SF			0.01137
770 Business Park			0.01276
110 Light Industrial			0.00697
150 Warehousing			0.00496
140 Manufacturing			0.00382
310 Hotel (per room)			5.63
<i>Trip Adjustment Factors</i>	56%		50%
Com / Shop Ctr 25,000 SF or less		28%	
Com / Shop Ctr 25,001-50,000 SF		31%	
Com / Shop Ctr 50,001-100,000 SF		33%	
Com / Shop Ctr 100,001-200,000 SF		36%	
Com / Shop Ctr over 200,000 SF		39%	
<i>Planned Cost Summary</i>			
Planned Arterials Demanded by Total IFA - Ave. Trip Length	82.50	82.50	82.50
Average Trip Length Adjustment	122%	68%	75%
Planned Arterials Demanded by Total IFA - Cost Per VMT	\$10.31	\$10.31	\$10.31
Planned Arterials Demanded by Total IFA - Cost for Ave. I	\$1,037.39	\$578.22	\$637.74
Support Facilities Cost Per Trip	\$6.71	\$6.71	\$6.71
Support Vehicle/Equip Cost Per Trip	\$69.19	\$69.19	\$69.19
Development Fee Study Cost Per Trip	\$0.30	\$0.30	\$0.30
Net Capital Cost Per Trip	\$1,113.59	\$654.41	\$713.94

The input variables listed above are used to derive the development fees shown in Figure 39 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 Street Development Fee for a single-family house is calculated as follows:

$$9.57 \times .56 \times \$1,113.59 = \$5,967 \text{ per single family detached unit}$$

Figure 39: Streets Development Fee Schedule – IFA 4

	Residential	Commercial / Shopping Ctrs	Other Nonres
<i>Development Fees</i>			
<u>Residential (per housing unit)</u>			
210 Single Family	\$5,967		
240 All Other Types of Housing	\$3,111		
<u>Nonresidential Per Square Foot of Floor Area</u>			
820 Commercial / Shopping Center 25,000 SF or less		\$20.21	
820 Commercial / Shopping Center 25,001-50,000 SF		\$17.56	
820 Commercial/Shopping Center 50,001-100,000 SF		\$14.66	
820 Commercial/Shopping Center 100,001-200,000 SF		\$12.55	
820 Commercial/Shopping Center over 200,000 SF		\$10.66	
710 Office 10,000 SF or less			\$8.08
710 Office 10,001-25,000 SF			\$6.55
710 Office 25,001-50,000 SF			\$5.58
710 Office 50,001-100,000 SF			\$4.76
710 Office 100,000 SF			\$4.05
770 Business Park			\$4.55
110 Light Industrial			\$2.48
150 Warehousing			\$1.77
140 Manufacturing			\$1.36
310 Hotel (per room)			\$2,010

IFA 5, 6, 7 STREETS DEVELOPMENT FEES

Capital cost for the average length trip is shown at the bottom of Figure 40. For the planned arterial streets, the cost for the average trip length is calculated by multiplying the average trip length multiplied by the trip length adjustment factor and the capital cost per vehicle mile of travel. For example, the capital cost for planned arterial streets demanded by the entire IFA for residential development is 4.43 miles, times 1.22 times \$147.32, or \$1,031.27 per trip. This is repeated for commercial and other nonresidential land uses.

Costs for planned support facilities, vehicles, equipment, and the development fee study are added to the costs for planned arterial streets.

Figure 40: Streets Development Fee Demand and Cost Summary – IFA 5, 6, 7

ITE Code	Residential	Commercial/ Shopping Ctrs	Other Nonres
Weekday Vehicle Trip Ends			
<u>Residential (per Housing Unit)</u>			
210 Single Family	9.57		
240 All Other Types of Housing	4.99		
<u>Nonresidential (per Square Foot of Floor Area)</u>			
820 Com / Shop Ctr 25,000 SF or less		0.11032	
820 Com / Shop Ctr 25,001-50,000 SF		0.08656	
820 Com / Shop Ctr 50,001-100,000 SF		0.06791	
820 Com / Shop Ctr 100,001-200,000 SF		0.05328	
820 Com / Shop Ctr over 200,000 SF		0.04180	
710 Office / Inst 10,000 SF or less			0.02266
710 Office / Inst 10,001-25,000 SF			0.01835
710 Office / Inst 25,001-50,000 SF			0.01565
710 Office / Inst 50,001-100,000 SF			0.01334
710 Office / Inst over 100,000 SF			0.01137
770 Business Park			0.01276
110 Light Industrial			0.00697
150 Warehousing			0.00496
140 Manufacturing			0.00382
310 Hotel (per room)			5.63
Trip Adjustment Factors	56%		50%
Com / Shop Ctr 25,000 SF or less		28%	
Com / Shop Ctr 25,001-50,000 SF		31%	
Com / Shop Ctr 50,001-100,000 SF		33%	
Com / Shop Ctr 100,001-200,000 SF		36%	
Com / Shop Ctr over 200,000 SF		39%	
Planned Cost Summary			
Planned Arterials Demanded by Total IFA - Ave. Trip Length (miles)	5.74	5.74	5.74
Average Trip Length Adjustment	122%	68%	75%
Planned Arterials Demanded by Total IFA - Cost Per VMT	\$147.32	\$147.32	\$147.32
Planned Arterials Demanded by Total IFA - Cost for Ave. Length Trip	\$1,031.27	\$574.81	\$633.98
Planned Arterials Demanded by Unincorp IFA - Ave. Trip Length (miles)	4.43	4.43	4.43
Average Trip Length Adjustment	122%	68%	75%
Planned Arterials Demanded by Unincorp IFA - Cost Per VMT	\$42.81	\$42.81	\$42.81
Planned Arterials Demanded by Unincorp IFA - Cost for Ave. Length Trip	\$231.13	\$128.83	\$142.09
Support Facilities Cost Per Trip	\$6.71	\$6.71	\$6.71
Support Vehicle/Equip Cost Per Trip	\$69.19	\$69.19	\$69.19
Development Fee Study Cost Per Trip	\$0.30	\$0.30	\$0.30
Net Capital Cost Per Trip	\$1,338.60	\$779.83	\$852.27

The input variables listed above are used to derive the development fees shown in Figure 41 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 Street Development Fee for a single-family house is calculated as follows:

$$9.57 \times .56 \times \$1,338.60 = \$7,173 \text{ per single family detached unit}$$

Figure 41: Streets Development Fee Schedule – IFA 5, 6, 7

Development Fees

Residential (per housing unit)

- 210 Single Family
- 240 All Other Types of Housing

Nonresidential Per Square Foot of Floor Area

- 820 Commercial / Shopping Center 25,000 SF or less
- 820 Commercial / Shopping Center 25,001-50,000 SF
- 820 Commercial/Shopping Center 50,001-100,000 SF
- 820 Commercial/Shopping Center 100,001-200,000 SF
- 820 Commercial/Shopping Center over 200,000 SF
- 710 Office 10,000 SF or less
- 710 Office 10,001-25,000 SF
- 710 Office 25,001-50,000 SF
- 710 Office 50,001-100,000 SF
- 710 Office 100,000 SF
- 770 Business Park
- 110 Light Industrial
- 150 Warehousing
- 140 Manufacturing
- 310 Hotel (per room)

Residential	Commercial/ Shopping Ctrs	Other Nonres
\$7,173		
\$3,740		
	\$24.08	
	\$20.92	
	\$17.47	
	\$14.95	
	\$12.71	
		\$9.65
		\$7.81
		\$6.66
		\$5.68
		\$4.84
		\$5.43
		\$2.97
		\$2.11
		\$1.62
		\$2,399

Streets CIP and Development Fee Cash Flow Analysis

This cash flow analysis is based on the development projections in the *Demographic Estimates and Development Projections* report for unincorporated Pinal County, the Streets CIP, and proposed Streets Development Fees.

For IFA 1, it assumed that only 25% of the projected single family detached units will pay the proposed Streets Development Fee per the analysis done for the report *Housing Development Forecast Pertaining to the Imposition of Transportation Corridor Development Fee Within Pinal County* by the Elliott D. Pollack & Company in February 2006. For IFA' 2-7, it is assumed that 100% of all future residential development will pay 100% of the proposed development fees.

To the extent these assumptions change, the cash flow analysis will change correspondingly. The development fees are not intended to be a general revenue raising mechanism. If development occurs at a more rapid rate than is projected, the demand for infrastructure will increase and development fee revenues will increase at a corresponding rate. If development occurs at a slower rate than is projected, the demand for infrastructure will decrease and development fee revenues will decrease at a corresponding rate.

The majority of the annual deficits shown in the tables below are the result of the portion of the planned arterial streets that are the result of demand from new growth in municipalities in Pinal County. The County intends to only collect development fees from new growth in unincorporated portions of the County. The demand for the planned arterial streets from new development in municipalities and from existing development in unincorporated Pinal County will have to be funded from a revenue source other than development fees.

STREETS CIP FOR NEW GROWTH AND DEVELOPMENT FEES – PINAL COUNTY, ARIZONA

IFA 1

UNINCORPORATED IFA 1	2 Year Intervals Shown					
	2007	2009	2011	2013	2015	2017
Projected Single Family Detached Units	37,211	44,261	51,311	58,361	65,411	72,461
Projected All Other Types of Housing Units	2,608	3,102	3,596	4,090	4,584	5,078
Projected Commercial Square Footage	1,161,371	1,486,113	1,810,855	2,135,597	2,460,340	2,785,082
Projected Office/Institutional Square Footage	2,035,365	2,220,096	2,404,827	2,589,557	2,774,288	2,959,019
Projected Industrial/Flex Square Footage	557,011	617,033	677,055	737,077	797,099	857,121
Net Change Single Family Detached Units	3,525	3,525	3,525	3,525	3,525	3,525
Net Change All Other Types of Housing Units	247	247	247	247	247	247
Net Change Commercial Square Footage	162,371	162,371	162,371	162,371	162,371	162,371
Net Change Office/Institutional Square Footage	92,365	92,365	92,365	92,365	92,365	92,365
Net Change Industrial/Flex Square Footage	30,011	30,011	30,011	30,011	30,011	30,011

DEVELOPMENT FEE REVENUE

	Proposed Fee	2007	2009	2011	2013	2015	10 Year Total
Proposed Single Family Detached Unit Fee	\$7,850	\$27,671,185	\$27,671,185	\$27,671,185	\$27,671,185	\$27,671,185	
IFA 1 Reduction Factor*		-75%	-75%	-75%	-25%	-25%	
Single Family Detached Units with Reduction Factor		\$6,917,796	\$6,917,796	\$6,917,796	\$20,753,389	\$20,753,389	
Proposed All Other Types of Housing Units Fee	\$4,093	\$1,011,005	\$1,011,005	\$1,011,005	\$1,011,005	\$1,011,005	
Proposed Commercial Fee	\$22.81	\$3,703,684	\$3,703,684	\$3,703,684	\$3,703,684	\$3,703,684	
Proposed Office/Institutional Fee	\$8.53	\$787,876	\$787,876	\$787,876	\$787,876	\$787,876	
Proposed Industrial/Flex	\$3.24	\$97,236	\$97,236	\$97,236	\$97,236	\$97,236	
TOTAL STREETS DEVELOPMENT FEE REVENUE IFA 1		\$12,517,597	\$12,517,597	\$12,517,597	\$26,353,190	\$26,353,190	\$194,353,934

CAPITAL EXPENDITURES

County Arterial Roads (Annualized)	\$30,216,330	\$30,216,330	\$30,216,330	\$37,990,363	\$37,990,363	
Support Facilities	\$152,860	\$152,860	\$152,860	\$152,860	\$152,860	
Support Equipment	\$1,577,058	\$1,577,058	\$1,577,058	\$1,577,058	\$1,577,058	
Development Fee Study	\$4,610	\$4,430	\$4,430	\$4,430	\$4,430	
TOTAL STREETS CAPITAL EXPENDITURES IFA 1	\$31,950,858	\$31,950,678	\$31,950,678	\$39,724,712	\$39,724,712	\$358,377,128

Annual Surplus/(Deficit)	(\$19,433,261)	(\$19,433,081)	(\$19,433,081)	(\$13,371,522)	(\$13,371,522)
Cumulative Surplus/(Deficit)	(\$19,433,261)	(\$58,299,423)	(\$97,165,585)	(\$123,908,629)	(\$150,651,672)

* Based on estimate of non-revenue generating permits from "Housing Development Forecast Pertaining to the Imposition of Transportation Corridor Development Fee Within Pinal County", Elliott D. Pollack & Company, February 2006.

STREETS CIP FOR NEW GROWTH AND DEVELOPMENT FEES – PINAL COUNTY, ARIZONA

IFA 2

UNINCORPORATED IFA 2	2 Year Intervals Shown					
	2007	2009	2011	2013	2015	2017
Projected Single Family Detached Units	6,920	7,262	7,604	7,945	8,287	8,629
Projected All Other Types of Housing Units	3,247	3,407	3,567	3,728	3,888	4,048
Projected Commercial Square Footage	236,000	236,000	236,000	236,000	236,000	236,000
Projected Office/Institutional Square Footage	468,962	488,886	508,810	528,734	548,658	568,583
Projected Industrial/Flex Square Footage	129,789	139,366	148,944	158,521	168,099	177,676
Net Change Single Family Detached Units	171	171	171	171	171	171
Net Change All Other Types of Housing Units	80	80	80	80	80	80
Net Change Commercial Square Footage	0	0	0	0	0	0
Net Change Office/Institutional Square Footage	9,962	9,962	9,962	9,962	9,962	9,962
Net Change Industrial/Flex Square Footage	4,789	4,789	4,789	4,789	4,789	4,789

DEVELOPMENT FEE REVENUE

	Proposed Fee	2007	2009	2011	2013	2015	2017
Proposed Single Family Detached Unit Fee	\$7,918	\$1,352,757	\$1,352,757	\$1,352,757	\$1,352,757	\$1,352,757	
Proposed All Other Types of Housing Units Fee	\$4,128	\$330,876	\$330,876	\$330,876	\$330,876	\$330,876	
Proposed Commercial Fee	\$23.00	\$0	\$0	\$0	\$0	\$0	
Proposed Office/Institutional Fee	\$8.60	\$85,674	\$85,674	\$85,674	\$85,674	\$85,674	
Proposed Industrial/Flex	\$3.26	\$15,611	\$15,611	\$15,611	\$15,611	\$15,611	10 Year Total
TOTAL TRANSPORTATION DEVELOPMENT FEE REVENUE IFA 2		\$1,784,919	\$1,784,919	\$1,784,919	\$1,784,919	\$1,784,919	\$17,849,186

CAPITAL EXPENDITURES

County Arterial Roads (Annualized)	\$42,129,036	\$42,129,036	\$42,129,036	\$64,573,814	\$64,573,814	
Support Facilities	\$7,549	\$7,549	\$7,549	\$7,549	\$7,549	
Support Equipment	\$77,881	\$77,881	\$77,881	\$77,881	\$77,881	
Development Fee Study	\$2,925	\$2,916	\$2,554	\$2,556	\$2,649	10 Year Total
TOTAL TRANSPORTATION CAPITAL EXPENDITURES IFA 2	\$42,217,391	\$42,217,381	\$42,217,019	\$64,661,799	\$64,661,892	\$534,394,874

Annual Surplus/(Deficit)	(\$40,432,472)	(\$40,432,463)	(\$40,432,101)	(\$62,876,881)	(\$62,876,974)
Cumulative Surplus/(Deficit)	(\$40,432,472)	(\$121,296,676)	(\$202,160,879)	(\$327,914,821)	(\$453,668,761)

IFA 3

UNINCORPORATED IFA 3	2 Year Intervals Shown					
	2007	2009	2011	2013	2015	2017
Projected Single Family Detached Units	3,042	3,364	3,686	4,008	4,330	4,652
Projected All Other Types of Housing Units	1,700	1,880	2,060	2,240	2,420	2,600
Projected Commercial Square Footage	106,312	110,935	115,559	120,182	124,806	129,429
Projected Office/Institutional Square Footage	210,927	226,782	242,636	258,491	274,346	290,200
Projected Industrial/Flex Square Footage	60,010	70,031	80,051	90,071	100,092	110,112
Net Change Single Family Detached Units	161	161	161	161	161	161
Net Change All Other Types of Housing Units	90	90	90	90	90	90
Net Change Commercial Square Footage	2,312	2,312	2,312	2,312	2,312	2,312
Net Change Office/Institutional Square Footage	7,927	7,927	7,927	7,927	7,927	7,927
Net Change Industrial/Flex Square Footage	5,010	5,010	5,010	5,010	5,010	5,010

DEVELOPMENT FEE REVENUE

	Proposed Fee	2007	2009	2011	2013	2015	2017
Proposed Single Family Detached Unit Fee	\$6,917	\$1,113,676	\$1,113,676	\$1,113,676	\$1,113,676	\$1,113,676	
Proposed All Other Types of Housing Units Fee	\$3,607	\$324,610	\$324,610	\$324,610	\$324,610	\$324,610	
Proposed Commercial Fee	\$20.21	\$46,720	\$46,720	\$46,720	\$46,720	\$46,720	
Proposed Office/Institutional Fee	\$7.54	\$59,772	\$59,772	\$59,772	\$59,772	\$59,772	
Proposed Industrial/Flex	\$2.86	\$14,329	\$14,329	\$14,329	\$14,329	\$14,329	10 Year Total
TOTAL TRANSPORTATION DEVELOPMENT FEE REVENUE IFA 3		\$1,559,106	\$1,559,106	\$1,559,106	\$1,559,106	\$1,559,106	\$15,591,064

CAPITAL EXPENDITURES

County Arterial Roads (Annualized)	\$17,579,385	\$17,579,385	\$17,579,385	\$20,316,725	\$20,316,725	
Support Facilities	\$7,694	\$7,694	\$7,694	\$7,694	\$7,694	
Support Equipment	\$79,375	\$79,375	\$79,375	\$79,375	\$79,375	
Development Fee Study	\$4,305	\$4,305	\$4,305	\$4,305	\$4,305	10 Year Total
TOTAL TRANSPORTATION CAPITAL EXPENDITURES IFA 3	\$17,670,759	\$17,670,759	\$17,670,759	\$20,408,099	\$20,408,099	\$190,394,290

Annual Surplus/(Deficit)	(\$16,111,653)	(\$16,111,653)	(\$16,111,653)	(\$18,848,992)	(\$18,848,992)
Cumulative Surplus/(Deficit)	(\$16,111,653)	(\$48,334,958)	(\$80,558,264)	(\$118,256,249)	(\$155,954,234)

STREETS CIP FOR NEW GROWTH AND DEVELOPMENT FEES – PINAL COUNTY, ARIZONA

IFA 4

UNINCORPORATED IFA 4	2 Year Intervals Shown					
	2007	2009	2011	2013	2015	2017
Projected Single Family Detached Units	183	186	188	191	193	196
Projected All Other Types of Housing Units	1,202	1,219	1,237	1,254	1,272	1,289
Projected Commercial Square Footage	21,173	21,518	21,864	22,209	22,555	22,901
Projected Office/Institutional Square Footage	41,123	41,369	41,615	41,861	42,107	42,353
Projected Industrial/Flex Square Footage	11,149	11,447	11,744	12,042	12,340	12,638
Net Change Single Family Detached Units	1	1	1	1	1	1
Net Change All Other Types of Housing Units	9	9	9	9	9	9
Net Change Commercial Square Footage	173	173	173	173	173	173
Net Change Office/Institutional Square Footage	123	123	123	123	123	123
Net Change Industrial/Flex Square Footage	149	149	149	149	149	149
DEVELOPMENT FEE REVENUE						
	<i>Proposed</i>					
	<i>Fee</i>					
Proposed Single Family Detached Unit Fee	\$5,967	\$7,881	\$7,881	\$7,881	\$7,881	\$7,881
Proposed All Other Types of Housing Units Fee	\$3,111	\$27,001	\$27,001	\$27,001	\$27,001	\$27,001
Proposed Commercial Fee	\$17.56	\$3,034	\$3,034	\$3,034	\$3,034	\$3,034
Proposed Office/Institutional Fee	\$6.55	\$806	\$806	\$806	\$806	\$806
Proposed Industrial/Flex	\$2.48	\$369	\$369	\$369	\$369	\$369
TOTAL TRANSPORTATION DEVELOPMENT FEE REVENUE IFA 4		\$39,091	\$39,091	\$39,091	\$39,091	\$39,091
						<i>10 Year Total</i>
						\$390,911
CAPITAL EXPENDITURES						
County Arterial Roads (Annualized)		\$0	\$0	\$0	\$4,788,200	\$4,788,200
State Roads - County Share (Annualized)		\$0	\$0	\$0	\$0	\$0
Support Facilities		\$230	\$230	\$230	\$230	\$230
Support Equipment		\$2,370	\$2,370	\$2,370	\$2,370	\$2,370
Development Fee Study		\$11	\$11	\$11	\$11	\$11
TOTAL TRANSPORTATION CAPITAL EXPENDITURES IFA 4		\$2,611	\$2,611	\$2,611	\$4,790,812	\$4,790,812
						<i>10 Year Total</i>
						\$23,967,114
Annual Surplus/(Deficit)		\$36,480	\$36,480	\$36,480	(\$4,751,720)	(\$4,751,720)
Cumulative Surplus/(Deficit)		\$36,480	\$109,440	\$182,399	(\$9,321,042)	(\$18,824,482)

IFA 5, 6, 7

UNINCORPORATED IFA 5, 6, 7	2 Year Intervals Shown					
	2007	2009	2011	2013	2015	2017
Projected Single Family Detached Units	11,590	13,134	14,678	16,222	17,766	19,310
Projected All Other Types of Housing Units	2,188	2,524	2,860	3,196	3,532	3,868
Projected Commercial Square Footage	344,092	376,276	408,460	440,644	472,828	505,012
Projected Office/Institutional Square Footage	659,432	700,297	741,161	782,026	822,890	863,755
Projected Industrial/Flex Square Footage	209,062	281,185	353,308	425,431	497,555	569,678
Net Change Single Family Detached Units	772	772	772	772	772	772
Net Change All Other Types of Housing Units	168	168	168	168	168	168
Net Change Commercial Square Footage	16,092	16,092	16,092	16,092	16,092	16,092
Net Change Office/Institutional Square Footage	20,432	20,432	20,432	20,432	20,432	20,432
Net Change Industrial/Flex Square Footage	36,062	36,062	36,062	36,062	36,062	36,062
DEVELOPMENT FEE REVENUE						
	<i>Proposed</i>					
	<i>Fee</i>					
Proposed Single Family Detached Unit Fee	\$7,173	\$5,537,504	\$5,537,504	\$5,537,504	\$5,537,504	\$5,537,504
Proposed All Other Types of Housing Units Fee	\$3,740	\$628,347	\$628,347	\$628,347	\$628,347	\$628,347
Proposed Commercial Fee	\$20.92	\$336,645	\$336,645	\$336,645	\$336,645	\$336,645
Proposed Office/Institutional Fee	\$7.81	\$159,576	\$159,576	\$159,576	\$159,576	\$159,576
Proposed Industrial/Flex	\$2.97	\$107,103	\$107,103	\$107,103	\$107,103	\$107,103
TOTAL TRANSPORTATION DEVELOPMENT FEE REVENUE IFA 5, 6, 7		\$6,769,175	\$6,769,175	\$6,769,175	\$6,769,175	\$6,769,175
						<i>10 Year Total</i>
						\$67,691,746
CAPITAL EXPENDITURES						
County Arterial Roads (Annualized)		\$0	\$0	\$0	\$17,354,582	\$17,354,582
Support Facilities		\$32,582	\$32,582	\$32,582	\$32,582	\$32,582
Support Equipment		\$336,144	\$336,144	\$336,144	\$336,144	\$336,144
Development Fee Study		\$0	\$0	\$0	\$0	\$0
TOTAL TRANSPORTATION CAPITAL EXPENDITURES IFA 5, 6, 7		\$368,725	\$368,725	\$368,725	\$17,723,307	\$17,723,307
						<i>10 Year Total</i>
						\$90,460,163
Annual Surplus/(Deficit)		\$6,400,449	\$6,400,449	\$6,400,449	(\$10,954,133)	(\$10,954,133)
Cumulative Surplus/(Deficit)		\$6,400,449	\$19,201,348	\$32,002,246	\$10,093,981	(\$11,814,284)

Implementation and Administration

As specified in A.R.S. 11-102, there are certain accounting requirements that must be met by the County:

Monies received from development fees shall be placed in a separate fund and accounted for separately and may only be used for the purposes authorized by this section. Interest earned on monies in the separate fund shall be credited to the fund.

Additionally, the County will have to maintain a separate fund for each of the seven IFA's in order to account for where development fee revenues are coming from and which dollars are being used to construct capital projects that are the result of new growth. This will ensure that new development receives a substantial benefit from the development fees.

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 Engineering News Record (ENR). This index could be applied against the calculated development fee. If cost estimates change significantly the County should redo the fee calculations.

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

Single Family Detached – units in structure: 1-detached, owner and renter occupied.

All Other Types of Housing – units in structure: units in structure: 2, 3 - 4, 5 – 9, 10 – 19, 20 – 49, 50 or more, mobile homes, other; owner and renter occupied.

Nonresidential development categories are based on land use classifications from the *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.

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 provide 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, Pinal County staff may use the most appropriate rates from the ITE *Trip Generation Manual* or rates from approved local transportation studies or observed data.