



BOARD OF SUPERVISORS AGENDA ITEM REPORT

Requested Board Meeting Date: January 14, 2020

Title: Public Hearing: Impact Fee Land Use Assumptions Report and Infrastructure Improvements Plan

Introduction/Background:

The County Roadway Development Impact Fee Ordinance must be updated due to changes in state statutes. The first requirement is a public hearing for the Land Use Assumptions Report (LUAR) and the Infrastructure Improvements Plan (IIP). The Board may approve the reports no sooner than 30 days after the hearing. If approved, a public hearing will be scheduled for the Fee Study, as required by statute.

Discussion:

Transportation staff, with assistance from a consultant, has prepared the required draft LUAR and IIP. The reports recommends reducing the existing benefit areas from 10 to 7 total areas, in part to ensure that enough collections could fund needed roadway improvements in those areas within 10 years. The IIP includes 28 roadway projects spread throughout the 7 benefit areas. The majority are roadway widenings or new roadway construction to serve new growth; 4% are intersection improvements, 2% are turn lanes and 2% are traffic signal improvements. Transportation has engaged in public outreach, including with key public stakeholders, since June 2019.

Conclusion:

The public hearing for the LUAR and IIP is a requirement of the state statute. The LUAR includes a total of 7 benefit areas and the IIP includes 28 roadway projects.

Recommendation:

Public Hearing, no action.

Fiscal Impact:

NA

Board of Supervisor District:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☒ All

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Department Director Signature/Date:

Anam. Alvarez

1/7/2020

Deputy County Administrator Signature/Date:

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1/7/2020

County Administrator Signature/Date:

C. Dulceberry

1/7/2020


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MEMORANDUM

Date: December 27, 2019

To: The Honorable Chairman and Members
Pima County Board of Supervisors

From: C.H. Huckelberry
County Administrator 

Re: **Roadway Development Impact Fee Program Update: Draft Land Use Assumptions Report and Draft Infrastructure Improvements Plan**

As I communicated to you in a July 22, 2019 memorandum, the Arizona Legislature has adopted new requirements for the County to update its impact fee ordinance. This new process first requires that a Land Use Assumptions Report (LUAR) and an Infrastructure Improvements Plan (IIP) be prepared and adopted by the Board of Supervisors at least thirty days following a Public Hearing. Following approval of these documents, the statute then requires publication of a Fee Study to determine fee amounts and another Public Hearing on the fees. At least thirty days following the Public Hearing for proposed fees, the Board of Supervisors may then amend the Impact Fee Ordinance and approve the new fees.

Department of Transportation (DOT) staff with assistance from Psomas, Inc., has prepared the required draft LUAR and IIP for the Board of Supervisors consideration. These draft documents were made available for public review on August 12, 2019. Based on the comments received, staff made changes to several of the projects in the IIP as well as to the proposed fee amounts. The draft LUAR and revised draft IIP are scheduled for a Public Hearing at the Board of Supervisors January 14, 2020 Meeting. Draft documents are currently available on the County website and final drafts will be provided as part of the Board agenda package.

Land Use Assumptions Report

The LUAR documents the amount and location of population and employment growth that is expected to occur over the next 10 years. This is a new requirement of the statute which forms the basis for a cost-constrained impact fee program more closely tied to anticipated development. The unincorporated Pima County population is projected to grow at 0.6 percent per year over the next 10 years, or by about 23,000. This projection is based on several sources including the US Census, AZ Department of Economic Security and Pima Association of Governments. The largest areas of projected growth are in the southeast and west benefit areas. Employment is projected to grow by 0.9 percent per year, or by about 8,245 new jobs according to the University of Arizona Economic and Business Research

Center. Residential housing permits are projected at 1,000 per year, or 10,000 total over the 10-year period. These projections are based on historical permit data and economic forecasts. State statute requires that the LUAR be updated at least every five years to reflect current growth trends.

Similar to the existing impact fee program, the LUAR allocates residential and employment growth across service or benefit areas. Several existing benefit areas were combined and/or modified to reduce the total number of areas from 10 to 7, in part, to ensure that enough collections could fund needed roadway improvements in those areas within 10 years. Far western portions of the Silverbell-Tortolita and Altar Valley areas were eliminated due to inclusion within national lands or where little to no growth is projected to support a program. The proposed new service areas better align future development with necessary roadway projects.

Infrastructure Improvements Plan

Similar to the existing impact fee projects plan, the IIP determines necessary improvements to service new growth. It is based on growth assumptions and forecasts in the LUAR. Under the new statute, new impact fees cannot be used to mitigate existing roadway deficiencies and so the selected projects reflect where new development will require new roadway capacity over the next 10 years. State statute requires that the IIP be updated at least every five years to reflect current growth trends and infrastructure needs.

The IIP report includes 28 roadway projects spread throughout seven benefit areas. Similar to that of the existing impact fee program, most of the projects involve roadway widening or new roadway construction. Several of these projects are included in the RTA plan. A small portion of the projects are intersection improvements (4 percent), turn lanes (2 percent) and traffic signal technology improvements (2 percent). While smaller in scope, these minor projects are an important and cost efficient means of providing the necessary additional capacity to serve new growth. The total cost of the IIP projects is \$201 million, of which \$93 million or 46 percent is to be funded with impact fees based on the proportion allocated to projected development. The remaining 54 percent of project costs will be funded through RTA funds, County funds and other sources.

Public Comments

Beginning in June 2019, DOT has actively sought public input on the LUAR and IIP from stakeholder groups including the Southern Arizona Homebuilders Association and Metropolitan Pima Alliance. Several minor comments were received regarding the LUAR which did not require any changes. More substantial comments were received regarding the IIP. These related to the methodology used to calculate the residential fee, the type, scope, and cost of roadway projects allowed by statute, and the methodology used to calculate the proportionate share of project costs allocated to new development. Staff addressed these

The Honorable Chairman and Members, Pima County Board of Supervisors
**Re: Roadway Development Impact Fee Program Update: Draft Land Use Assumptions Report
and Draft Infrastructure Improvements Plan**
December 27, 2019
Page 3

comments through several stakeholder meetings over the past four months and revised draft documents, including deleting several projects from the IIP and lowering the proposed fee by a proportional amount.

Next Steps

The draft LUAR and revised draft IIP are scheduled for public hearing at the Board of Supervisors January 14, 2020 Meeting. Following the Public Hearing, staff will finalize the LUAR and IIP for Board of Supervisors approval no sooner than the February 18, 2020 Meeting.

Following approval of the LUAR and IIP, staff will produce a draft Fee Study for a Board of Supervisors Public Hearing that may occur no sooner than 30 days after LUAR and IIP approval, followed by adoption of fees at least 30 days thereafter. Based on these timeframes, adoption of the new fee and ordinance could occur in May 2020, with an effective date of January 1, 2021 to allow for developer planning.

CHH/lab

c: Carmine DeBonis, Jr., Deputy County Administrator for Public Works
Yves Khawam, PhD, Assistant County Administrator for Public Works
Ana Olivares, Director, Transportation Department

Impact Fee Public Outreach Stakeholder Summary

June 25, 2019 PCDOT presentation to Metropolitan Pima Alliance (MPA) on impact fee program update

July 22, 2019 County Administrator sends memo to BOS re: update and potential fee increase

July 23, 2019 KOLD interview with A. Olivares on update and potential fee increase

Aug 12, 2019 PCDOT provides preliminary draft Land Use Assumptions Report (LUAR) and Infrastructure Improvements Plan (IIP) to SAHBA, MPA, Tucson Metro Chamber, Sun Corridor Inc., AZ Multihousing Association, and Diamond Ventures. Invitation to September 4 meeting in Public Works Basement. Draft LUAR and IIP posted on-line.

Sep 4, 2019 Staff presents slide show of the update process, land use assumptions, and a draft project list to stakeholders.

Sept 10, 2019 PCDOT meets with Diamond Ventures re: update and draft reports

Sept 19, 2019 SAHBA submits written comments re: LUAR and IIP

Sept 27, 2019 PCDOT responds in writing to SAHBAs comments. Responses shared with MPA

Oct 1, 2019 SAHBA and MPA host "Lunch and learn" meeting and discussion with PCDOT staff

Oct 9, 2019 PCDOT meets with MPA and other stakeholders

Oct 23, 2019 MPA submits comments to PCDOT

Nov 1, 2019 PCDOT responds in writing to MPA comments

Nov 7, 2019 County Admin meets with SAHBA

Nov 12, 2019 County Admin meets with SAHBA

Nov 14, 2019 Public Notice for Public Hearing on LUAR and IIP for January 14, 2020

Nov 22, 2019 SAHBA submits written comments to PCDOT

Dec 3, 2019 PCDOT responds in writing to SAHBA comments

Dec 5, 2019 County Admin and PCDOT staff meeting with SAHBA representatives

Dec 10, 2019 County Administration meets with MPA

Dec 11, 2019 PCDOT responds in writing to MPA comments

Dec 19, 2019 PCDOT staff presentation to SAHBA representatives

Pima County, Arizona
Impact Fee Update

Land Use Assumptions

Public Report
Draft

Prepared by

P S O M A S

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Prepared for



201 North Stone Avenue
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October 1, 2019

Pima County Board of Supervisors

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Ramon Valadez – District 2

Sharon Bronson – District 3

Steve Christy – District 4

Richard Elias (Chair) – District 5

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TABLE OF CONTENTS

1. INTRODUCTION	4
1.1. Allocation of Growth within Service Areas	4
2. EXISTING SOCIOECONOMIC CONDITIONS	7
2.1. Population and Housing	7
2.2. Employment	8
3. LAND USE ASSUMPTIONS	9
3.1. Residential Growth Assumptions	9
3.1.1. PAG Transportation Improvement Program (TIP)	9
3.1.2. Permits	10
3.1.3. 10-Year Land Use Assumptions: Residential	10
3.2. Employment Growth Assumptions	12
3.2.1. PAG Transportation Improvement Program (TIP)	12
3.2.2. PAG Regional Mobility and Accessibility Plan (RMAP)	13
3.2.3. 10-Year Land Use Assumptions: Employment	14
4. SUMMARY	15

APPENDIX

List of Preparers

January 2015 – May 2018 Permits

2017-2022 TIP Population Growth

2017-2022 TIP Employment Growth

LIST OF EXHIBITS

Exhibit 1. Streets Service Areas	6
Exhibit 2. Population and Housing Units Census Data	7
Exhibit 3. 2013-2018 Population Growth Estimates for Pima County Jurisdictions	8
Exhibit 4. 2017 Employment Data	8
Exhibit 5. TIP (2017-2022) Estimated Household Growth	10
Exhibit 6. 2015-2018 Residential Permits in Unincorporated Pima County	10
Exhibit 7. 2009-2018 Residential Permits per Year in Unincorporated Pima County	11
Exhibit 8. Population and Housing Land Use Assumptions: 10-Year Growth	12
Exhibit 9. TIP (2017-2022) Estimated Employment Growth	13
Exhibit 10. Existing Jobs in Unincorporated Pima County (March 2018)	13
Exhibit 11. Employment Land Use Assumptions: 10-Year Growth	14
Exhibit 12. Residential and Employment Land Use Assumptions: 10-Year Growth	15

1. INTRODUCTION

The Roadway Development Impact Fee in unincorporated Pima County is assessed for new developments to offset some of the infrastructure costs associated with growth. The County currently charges fees for one public category: roadways. To continue assessing and collecting fees, the County must update its program to comply with the new state statute ARS §11-1102. The update of the Roadway Development Impact Fee program includes preparation of new development impact fee studies, project lists, fee schedules, and county ordinance.

The statute ARS §11-1102 limits the types of “necessary public services” which impact fees can fund. Before assessing the development fees, a County must release to the public a written report of the land use assumptions and an infrastructure improvements plan (IIP) for each fee category. As defined in ARS §11-1102 (V)(6), “‘Land use assumptions’ means projections of changes in land uses, densities, intensities and population for a specified service area over a period of at least ten years and pursuant to the general plan of the county.”

This report is a required document that identifies the land use assumptions to be applied in the IIP for roads, and the subsequent calculation of development impact fee rates. These land use assumptions are used to estimate the amount of new development within the service areas from which development impact fees will be assessed. The land use assumptions generally reflect the regional plans, such as the Transportation Improvement Program (TIP) and the Regional Mobility and Accessibility Plan (RMAP), and the region’s suballocation of population forecast to the County.

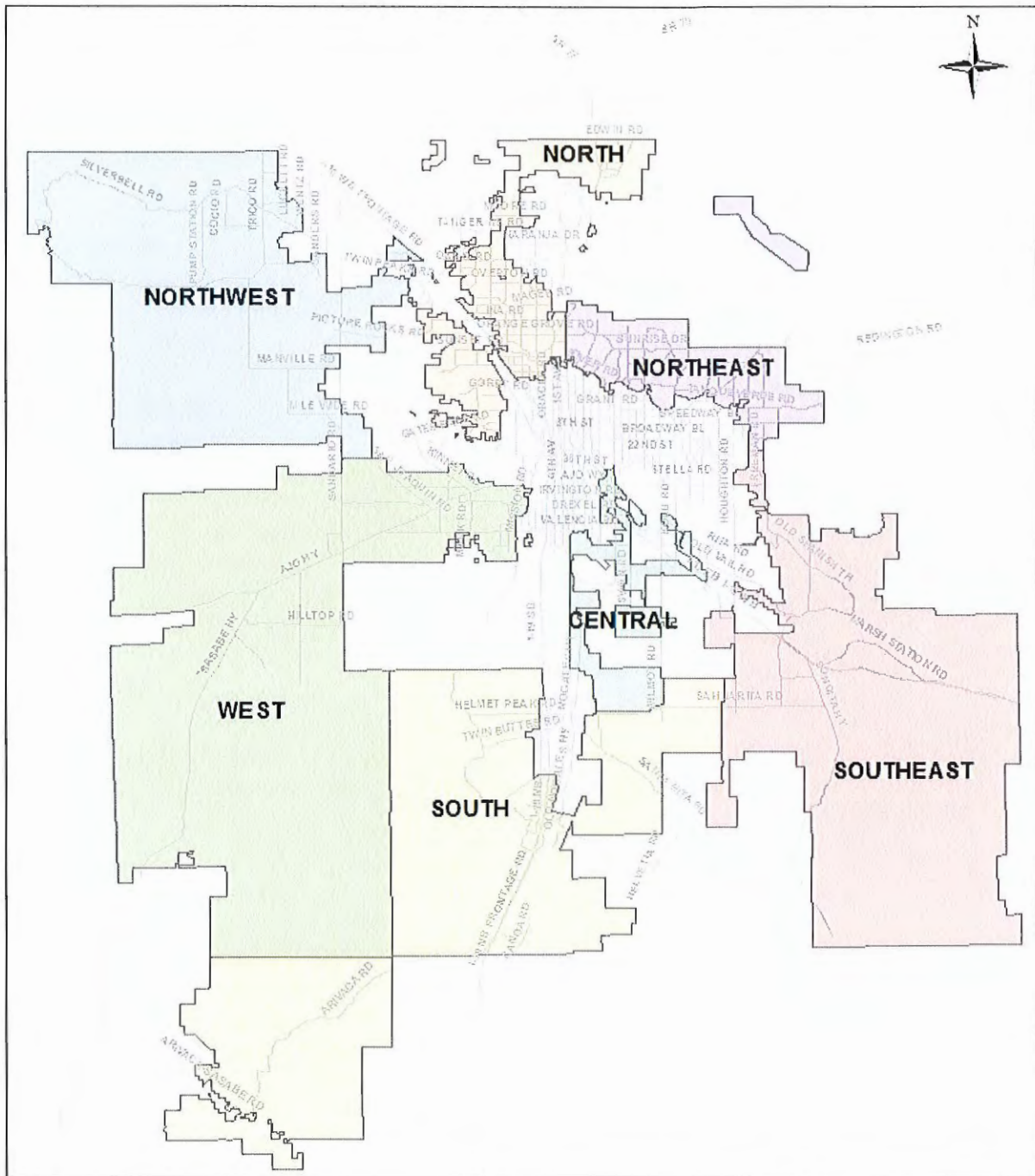
1.1. ALLOCATION OF GROWTH WITHIN SERVICE AREAS

As defined in ARS §11-1102 (V)(9), “‘Service area’ means any specified area within the boundaries of a county in which development will be served by necessary public services or facility expansions and within which a substantial nexus exists between the necessary public services or facility expansions and the development being served as prescribed in the infrastructure improvements plan.”

Under the current impact fee program, there are ten service areas in unincorporated Pima County: Altar Valley, Avra Valley, Catalina Foothills, Cañada del Oro, San Xavier, Santa Cruz, Silverbell-Tortolita, Southeast, Southwest, and Tucson Mountains.

The County reviewed the existing service areas and modified the boundaries to better align development patterns and projects and to ensure a substantial nexus as required by the statute. By statute, “development fees should result in a beneficial use to the development” paying the fee. The new program generally excludes federal lands, tribal lands, and other conservation areas that are not expected to be developed. As a guideline, major roadways and topographic features such as railroads and Central Arizona Project (CAP) canals were considered when delineating service areas. A map of the seven proposed service areas in unincorporated Pima County is shown in Exhibit 1.

Exhibit 1. Streets Service Areas



2. EXISTING SOCIOECONOMIC CONDITIONS

2.1. POPULATION AND HOUSING

Although Pima County is the second most populous county in Arizona, its population has been growing slower than the state population in the recent years. Based on the US Census Bureau population estimates, population in the County experienced 4.2% growth from 2013-2018 (0.82% per year), compared to 8.1% for the state overall (1.57% per year). General population and housing data from the 2013-2017 American Community Survey (ACS)¹ from the US Census Bureau are shown in Exhibit 2.

Exhibit 2. Population and Housing Units Census Data

	Pima County	Arizona
Population , 2018 estimate (US Census Estimate)	1,027,502	7,171,646
Population, 2013 estimate (US Census Estimate)	997,437	6,634,999
Population, annual percent change	+0.82%	+1.57%
Housing units , 2017 estimate (ACS)	453,948	2,941,894
Homeownership rate, 2017 (ACS)	61.9%	63.1%
Housing units in multi-unit structures, percent, 2017 (ACS)	21.8%	20.3%
Median value of owner-occupied housing units, 2017 (ACS)	\$166,300	\$193,200
Households, 2017 (ACS)	398,530	2,482,311
Persons per household, 2017 (ACS)	2.53	2.74

The Arizona Department of Economic Security has official population projections for the state, counties, incorporated places, and selected census designated areas. Exhibit 3 shows estimated population growth for each jurisdiction in Pima County from 2013 to 2018².

¹ 2013-2017 American Community Survey. US Census Bureau. <www.census.gov>

² 2016-2050 Projections. <https://population.az.gov/sites/default/files/documents/files/pop-prj-04019inc-16-50.xlsx>

Exhibit 3. 2013-2018 Population Growth Estimates for Pima County Jurisdictions

Jurisdiction	Annual Growth
Marana	3.7%
Oro Valley	1.8%
Sahuarita	2.3%
South Tucson	0.4%
Tucson	0.7%
Unincorporated Pima County	0.6%

2.2. EMPLOYMENT

The 2013-2017 American Community survey estimates that 4.9% of the population 16 years and over in labor force is unemployed in Pima County, compared to 4.2% in the state. The 2017 employment data in Exhibit 4 is provided by the US Census Bureau.

Exhibit 4. 2017 Employment Data

Employment Status, 2017 (ACS)	Pima County		Arizona	
	<u>Estimate</u>	<u>Percent</u>	<u>Estimate</u>	<u>Percent</u>
Population 16 years and over	814,161	-	5,371,341	-
In labor force	478,706	58.8%	3,197,116	59.5%
Civilian labor force	473,482	58.2%	3,179,802	59.2%
Employed	433,478	53.2%	2,953,891	55.0%
Unemployed	40,004	4.9%	225,911	4.2%
Armed Forces	5,224	0.6%	17,314	0.3%
Not in labor force	335,455	41.2%	2,174,225	40.5%
Civilian labor force	473,482	-	3,179,802	-
% Civilian Labor Force Unemployed	-	8.4%	-	7.1%

3. LAND USE ASSUMPTIONS

The land use assumptions for a 10-year horizon are based on the estimated growth in population and employment in unincorporated Pima County. Growth for both residential and non-residential (commercial) areas was estimated for each service area to determine the percentage of overall County growth which is eligible for inclusion in the IIP. The 10-year planning period will be from 2019 to 2029. The following sections discuss the information and methodology used to develop the land use assumptions. The PAG (Pima Association of Governments) *Transportation Improvement Program (TIP)* and *Regional Mobility and Accessibility Plan (RMAP)*, historic permit information, and other sources were used to inform the development of the growth assumptions.

3.1. RESIDENTIAL GROWTH ASSUMPTIONS

3.1.1. PAG Transportation Improvement Program (TIP)

Trends from the Pima Association of Governments (PAG) were evaluated to assist the development of land use assumptions for unincorporated Pima County. PAG maintains a model of existing conditions as well as a model representing the regional transportation network incorporating the planned 5-year *Transportation Improvement Program*³ (TIP) projects. This document uses the 2017 to 2022 TIP.

PAG provided population estimates for each Transportation Analysis Zone (TAZ) in the region. An average household size of 2.46 people per household was assumed to convert population into number of households. Exhibit 5 shows the 2017-2022 TIP estimated 5-year household growth for each of the proposed service areas.

³ *Transportation Improvement Program (TIP)*. Pima Association of Governments.
<<https://www.pagnet.org/Programs/TransportationPlanning/PlansandPrograms/TransportationImprovementProgram/tabid/172/Default.aspx>>

Exhibit 5. TIP (2017-2022) Estimated Household Growth

Service Area	New HH*	% New HH
Central	2,267	20%
North	1,776	16%
Northeast	485	4%
Northwest	524	5%
South	579	5%
Southeast	2,514	23%
West	2,943	27%
TOTAL	11,086	100%

*TIP Households includes TAZs that are partially in the County even if most households are in City or other municipality

3.1.2. Permits

The historic number of permits from January 2015 to May 2018 was used to guide the estimation of housing growth in the region. Exhibit 6 shows the residential permits in each of the proposed service areas.

Exhibit 6. 2015-2018 Residential Permits in Unincorporated Pima County

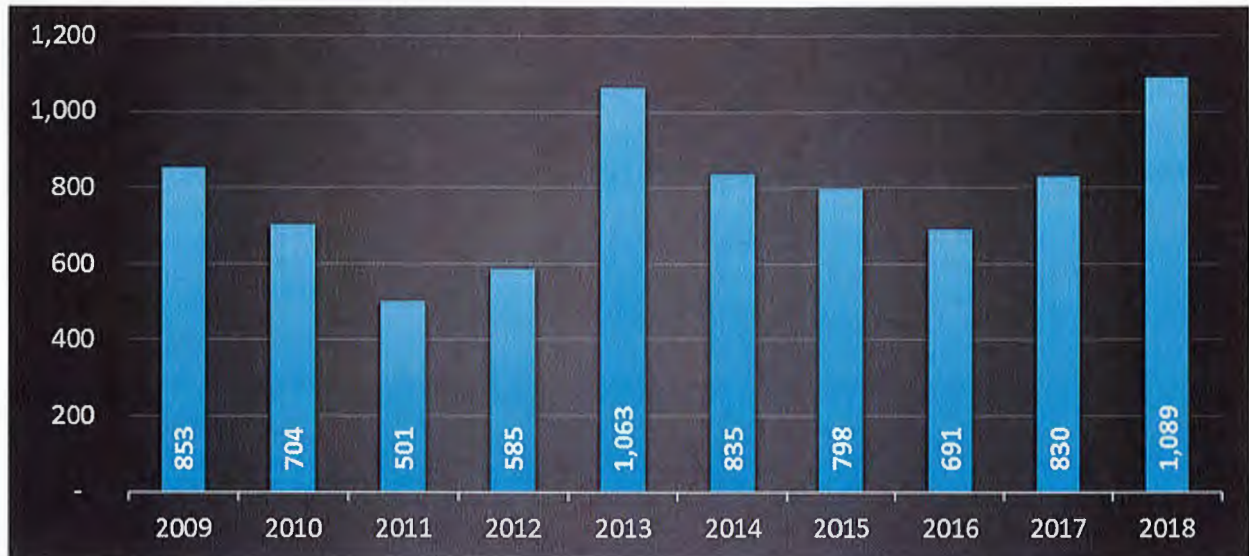
Service Area	Permits	% Permits
Central	10	0.4%
North	407	15%
Northeast	407	15%
Northwest	64	2%
South	210	8%
Southeast	862	32%
West	714	27%
TOTAL	2,674	100%

3.1.3. 10-Year Land Use Assumptions: Residential

There were 2,674 total residential permits issued in unincorporated Pima County from January 2015 to May 2018, which means approximately 783 permits were issued each year. However, as shown in exhibit 7, the number of permits has been slowly increasing to a little over 1,000 permits in 2018 (annualized based in January-May data).

Therefore, it is assumed that the long term trend is for permits to stabilize at approximately 1,000 permits per year, which means that it is estimated that approximately 10,000 new permits will be issued in a 10-year period in the County.

Exhibit 7. 2009-2018 Residential Permits per Year in Unincorporated Pima County



*2018 permits based on annualized January to May data

The proportion of new permits in each service area was estimated based on historic permits, the estimated growth from the 2017-2022 TIP, and knowledge of planned and expected developments. The proposed residential growth for each service area is shown in Exhibit 8, along with the historic permit and PAG TIP data for reference.

Exhibit 8. Population and Housing Land Use Assumptions: 10-Year Growth

	HISTORIC PERMITS 01/15-05/18		PAG TIP 2017-22*		PROPOSED 10-YR GROWTH	
Service Area	Permits	% Permits	New HH	% New HH	Permits	% Permits
Central	10	0.4%	2,267	20%	900	9%
North	407	15%	1,776	16%	1,700	17%
Northeast	407	15%	485	4%	900	9%
Northwest	64	2%	524	5%	400	4%
South	210	8%	579	5%	600	6%
Southeast	862	32%	2,514	23%	2,900	29%
West	714	27%	2,943	27%	2,600	26%
TOTAL	2,674	100%	11,086	100%	10,000	100%

*TIP Households includes TAZs that are partially in the County even if most households are in City or other municipality

3.2. EMPLOYMENT GROWTH ASSUMPTIONS

3.2.1. PAG Transportation Improvement Program (TIP)

Employment projections are also important to estimate the amount of new infrastructure needed to serve planned new development at each service area. The PAG TIP data includes five-year (2017-2022) estimates of the number of employees for each Transportation Analysis Zone (TAZ) in the region. Exhibit 9 shows the TIP estimated employment growth for the proposed service areas.

Exhibit 9. TIP (2017-2022) Estimated Employment Growth

Service Area	New Jobs*	% New Jobs
Central	3,534	26%
North	4,294	32%
Northeast	1,245	9%
Northwest	512	4%
South	715	5%
Southeast	853	6%
West	2,465	18%
TOTAL	13,618	100%

*TIP Employment includes TAZs that are partially in the County even if most households are in City or other municipality

3.2.2. PAG Regional Mobility and Accessibility Plan (RMAP)

The Pima Association of Governments (PAG) updates its long-range *Regional Mobility and Accessibility Plan*⁴ (RMAP) every four years. The current RMAP was formally adopted by PAG's Regional Council on May 26, 2016 and identifies projects, goals, and performance measures for the transportation system of the Tucson metropolitan area over the next 30 years (2045). The RMAP includes information on existing (2018) number of jobs in unincorporated Pima County by sector, as shown in Exhibit 10.

Exhibit 10. Existing Jobs in Unincorporated Pima County (March 2018)

Sector	Industrial	Retail	Office	Total
Existing	19,771	9,774	53,328	82,873
% Existing Jobs	24%	12%	64%	100%

The RMAP data was evaluated to help guide the projected distribution of employment in the various sectors (industrial, retail, office).

⁴ *Regional Mobility and Accessibility Plan* (RMAP). Pima Association of Governments.
<<https://www.pagregion.com/documents/map/map2045/2045RMAP.pdf>>

3.2.3. 10-Year Land Use Assumptions: Employment

Based on the 2017 third quarter forecast by the University of Arizona Economic and Business Research Center⁵ (EBRC), a 0.95% annual growth in jobs was estimated in unincorporated Pima County. The proposed employment growth is also consistent with the most recent EBRC forecast (May 2019) for the County as a whole of 0.9% per year from 2017-2022. Currently there are 82,873 existing jobs in unincorporated Pima County; therefore approximately 8,245 new jobs are expected in a 10-year period.

Three non-residential employment sectors are considered in this report: retail, office and industrial. Based on the 2017-2022 TIP employment growth, the existing distribution of jobs by sector, and discussions with the County concerning planned and expected development, the projected number of jobs for the region is shown in Exhibit 11.

Exhibit 11. Employment Land Use Assumptions: 10-Year Growth

	PAG TIP 2017-22*		PROPOSED 10-YR GROWTH		% Jobs by Land Use			Jobs by Land Use		
	New Jobs	% Jobs	Jobs	% Jobs	Ind	Retail	Office	Ind	Retail	Office
Central	3,534	26%	1,731	21%	63%	3%	34%	1,091	52	589
North	4,294	32%	1,731	21%	25%	15%	60%	433	260	1,039
Northeast	1,245	9%	907	11%	5%	13%	82%	45	118	744
Northwest	512	4%	247	3%	60%	3%	37%	148	7	92
South	715	5%	412	5%	30%	10%	60%	124	41	247
Southeast	853	6%	1,484	18%	30%	25%	45%	445	371	668
West	2,465	18%	1,731	21%	15%	14%	71%	260	242	1,229
TOTAL	13,618	100%	8,245	100%				2,546	1,092	4,607

*TIP Employment includes TAZs that are partially in the County even if most households are in City or other municipality

⁵University of Arizona Economic and Business Research Center <<https://ebr.eller.arizona.edu/>>

4. SUMMARY

This report provides 10-year growth projections for unincorporated Pima County for the purposes of the roadway impact fee study update. The estimated population and employment growth data for 2029 conditions is provided in Exhibit 12.

Exhibit 12. Residential and Employment Land Use Assumptions: 10-Year Growth

Service Area	Permits	Jobs by Land Use		
		Ind	Retail	Office
Central	900	1,091	52	589
North	1,700	433	260	1,039
Northeast	900	45	118	744
Northwest	400	148	7	92
South	600	124	41	247
Southeast	2,900	445	371	668
West	2,600	260	242	1,229
TOTAL	10,000	2,546	1,092	4,607

These assumed land assumptions will be used in the infrastructure improvements plan (IIP) to estimate the amount of new facilities needed to serve the projected new development. ARS §9-463.05 (D)(3) requires the land use assumptions to be updated at least every five years.

APPENDIX

- **List of Preparers**
- **January 2015 – May 2018 Permits**
- **2017-2022 TIP Population Growth Map by TAZ**
- **2017-2022 TIP Employment Growth by TAZ**

List of Preparers

Staff Participants

Ana Olivares, P.E., Transportation Director

Kathryn Skinner, P.E., Transportation Deputy Director

Yves Khawam, PhD, Assistant County Administrator for Public Works

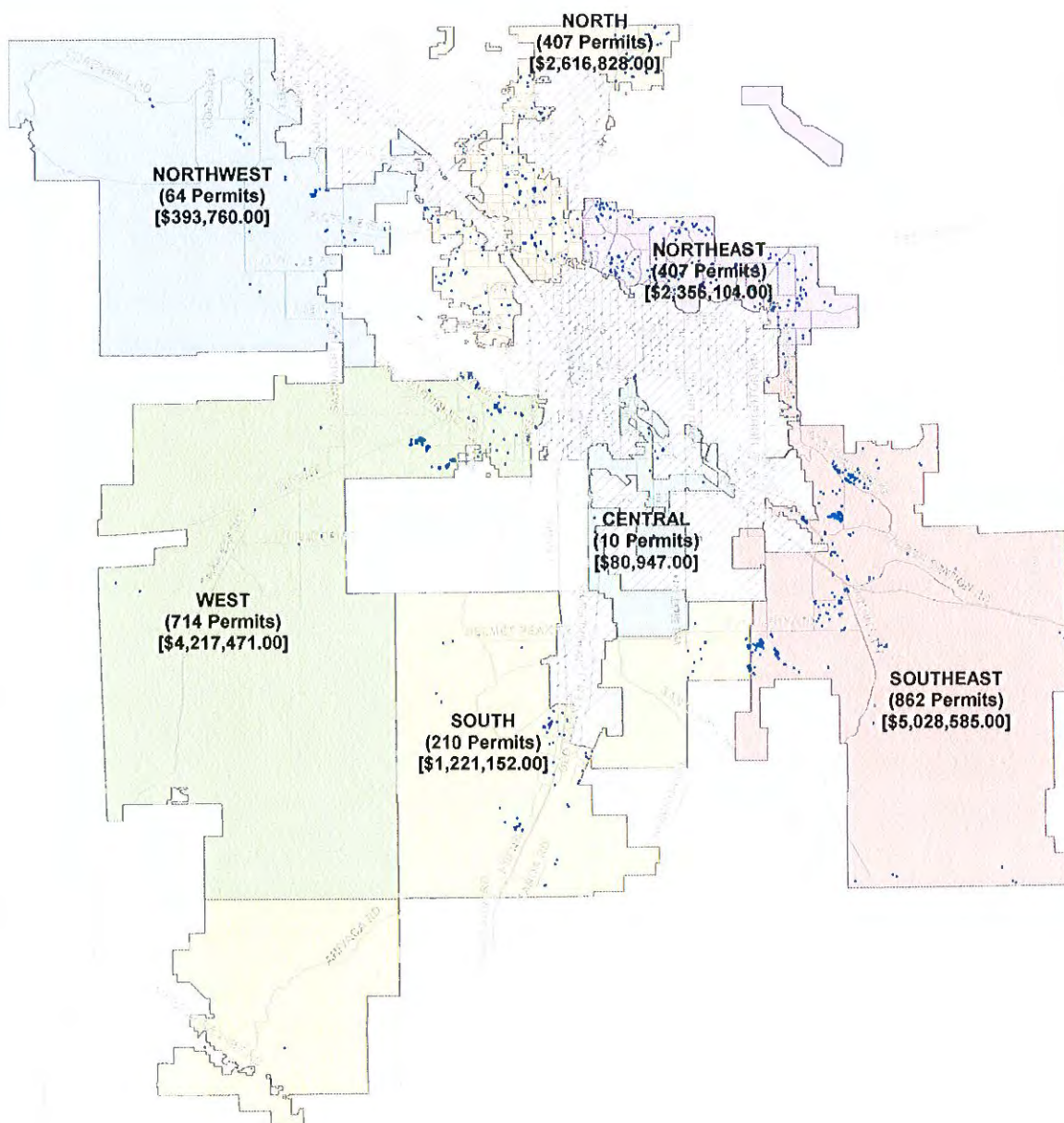
Jonathan Crowe, Principal Planner

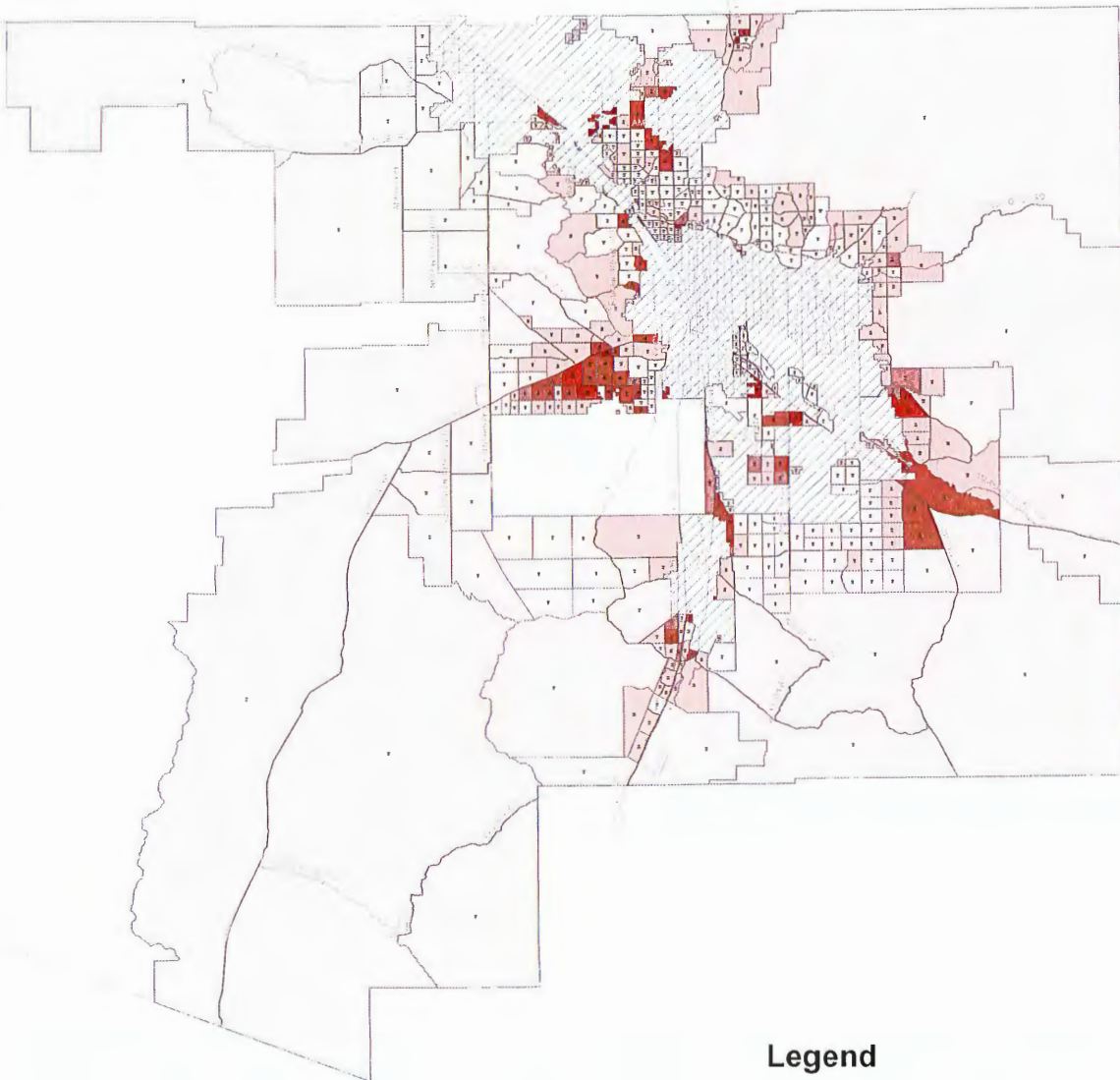
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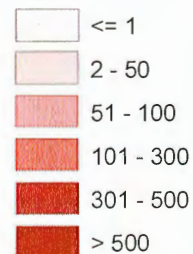




Legend

All TAZs

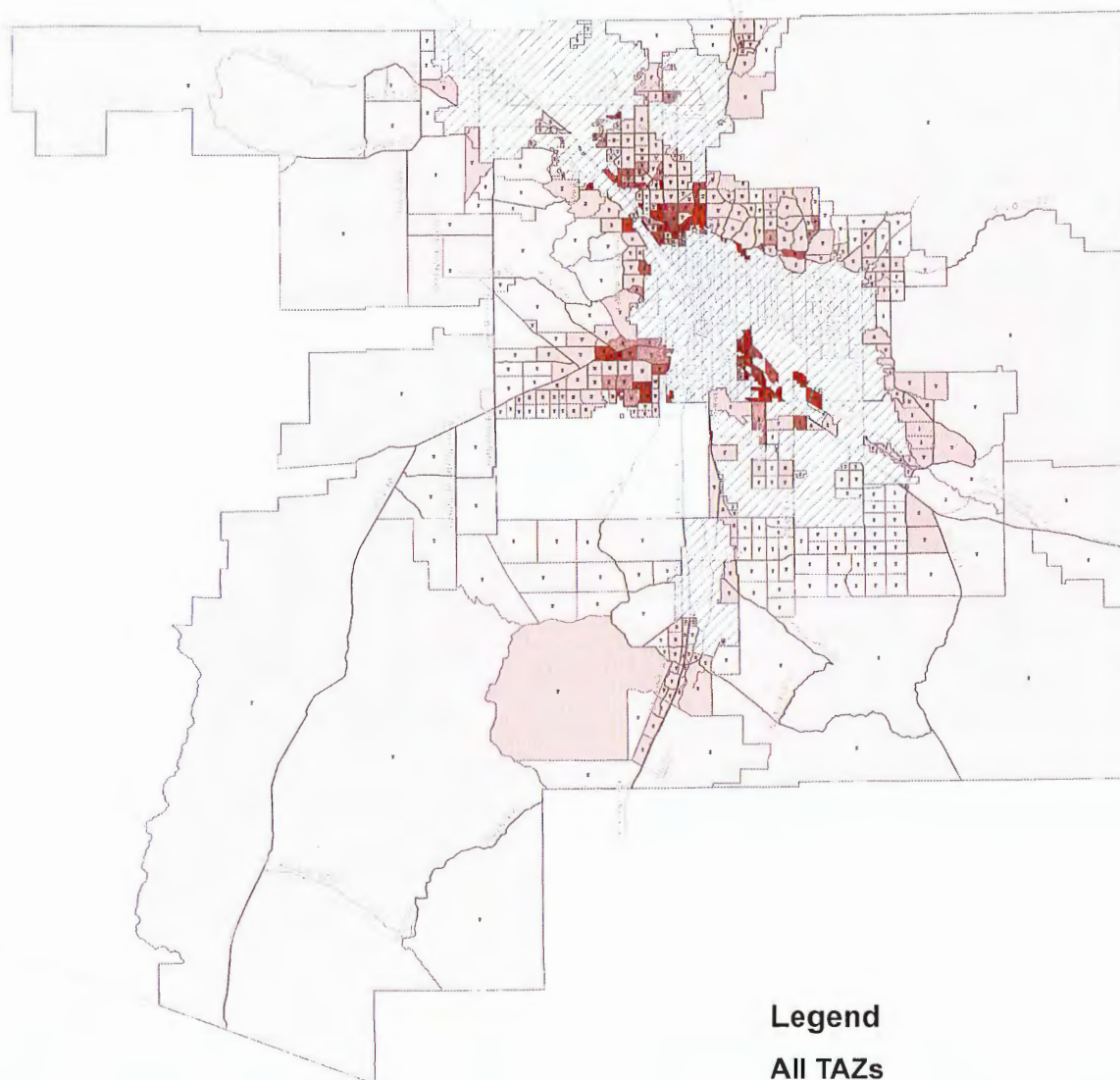
Population: 5-Year Growth/sqmi



*Zoom in for TAZ Information:

XX - TAZ

(XX) - Population growth/sqmi



Legend

All TAZs

Employment: 5-Year Growth/sqmi



*Zoom in for TAZ Information:
XX - TAZ
(XX) - Employment growth/sqmi

Pima County, Arizona
Impact Fee Update

Street Facilities

Infrastructure Improvements Plan

Proposed Updates to
Draft Public Report

Prepared by

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201 North Stone Avenue
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January 7, 2020

Pima County Board of Supervisors

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Ramon Valadez – District 2

Sharon Bronson – District 3

Steve Christy – District 4

Richard Elias (Chair) – District 5

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TABLE OF CONTENTS

1. INTRODUCTION	1
1.1. Allocation of Growth within Service Areas	2
2. NECESSARY PUBLIC SERVICES	4
2.1. Existing Needs	4
2.2. Projected Needs	17
2.3. Maintenance and Operation of Street Facilities	21
3. TRAVEL DEMAND PER DEMAND UNIT	22
3.1. Land Use Categories	22
3.1.1. Single Family Detached.....	22
3.1.2. Attached Residential/Multi-Family.....	22
3.1.3. Senior Housing.....	22
3.1.4. Assisted Living/Congregate Care	23
3.1.5. Mobile Home Park.....	23
3.1.6. Hotel/Motel	23
3.1.7. Retail.....	23
3.1.8. Services	23
3.1.9. High-Traffic Retail/Services	23
3.1.10. Industrial.....	23
3.1.11. Hospital/Clinic	23
3.1.12. Recreational	24
3.1.13. General Office	24
3.1.14. Medical/Dental/Vet Office	24
3.1.15. Public Schools.....	24
3.1.16. Charter/Private Schools.....	24
3.2. ITE Trip Generation Rates	24
3.3. Primary Trips	24
3.4. Average Trip Length	26
3.5. Travel Demand on Pima County Arterial Road Network	26
3.6. Vehicle Miles of Travel Demand	26
3.7. Equivalent Demand per Unit (EDU)	27
4. PROJECTED SERVICE UNITS FOR NEW DEVELOPMENT	28
5. REVENUE CONSIDERATIONS	30

APPENDIX

List of Preparers

Detailed Project Cost Calculations

LIST OF EXHIBITS

Exhibit 1. Streets Service Areas	3
Exhibit 2. Necessary Streets Facilities	6
Exhibit 3. Existing (2019) and Future (2029) Traffic Volumes	14
Exhibit 4. Cost Attributable to Development.....	18
Exhibit 5. Pavement Preservation Costs.....	21
Exhibit 6. Estimate of Streets Facility Demand per Unit of Land Use.....	25
Exhibit 7. Residential and Employment Land Use Assumptions: 10-Year Growth	28
Exhibit 8. Non-Residential Development Attributes	29
Exhibit 9. Anticipated Units by Land Use Type	29
Exhibit 10. RTA Credit Calculations	32

1. INTRODUCTION

The Roadway Development Impact Fee in unincorporated Pima County is assessed for new developments to offset some of the infrastructure costs associated with growth. The County currently charges fees for one public category: roadways. To continue assessing and collecting fees, the County must update its program to comply with the new state statute ARS §11-1102. The update of the Roadway Development Impact Fee program includes preparation of new development impact fee studies, project lists, fee schedules, and county ordinance.

Before assessing the development fees, a County must release to the public a written report of the land use assumptions and an infrastructure improvements plan (IIP) for each fee category. As defined in ARS §11-1102 (V)(5), “‘Infrastructure improvements plan’ means a written plan that identifies each necessary public service or facility expansion that is proposed to be the subject of development fees and otherwise complies with the requirements of this section and may be the county's capital improvements plan”. The statute ARS §11-1102 limits the types of “necessary public services” which impact fees can fund.

This report is a required document that identifies the infrastructure needs for the street facilities in unincorporated Pima County. The analysis only includes arterials and major collectors, since roadways with lower classifications are generally internal to development and are constructed during the development process. This analysis will be used in the subsequent calculation of impact fee rates.

The land use assumptions that are used in this report to evaluate infrastructure needs are documented separately in the Land Use Assumptions report. The Land Use Assumptions report provides a quantification of expected future development within each of the service areas for which impact fees will be assessed.

1.1. ALLOCATION OF GROWTH WITHIN SERVICE AREAS

As defined in ARS §11-1102 (V)(9), “‘Service area’ means any specified area within the boundaries of a county in which development will be served by necessary public services or facility expansions and within which a substantial nexus exists between the necessary public services or facility expansions and the development being served as prescribed in the infrastructure improvements plan”.

The existing impact fee program includes ten service areas in unincorporated Pima County: Altar Valley, Avra Valley, Catalina Foothills, Cañada del Oro, San Xavier, Santa Cruz, Silverbell-Tortolita, Southeast, Southwest, and Tucson Mountains. The County reviewed the existing service areas and modified the boundaries to better align development patterns and projects and to ensure a substantial nexus as required by the statute.

The new program generally excludes federal lands, tribal lands, and other conservation areas that are not expected to be developed. As a guideline, major roadways and topographic features were considered when delineating service areas. A map of the seven proposed service areas in unincorporated Pima County is shown in Exhibit 1.

The map displays the following districts and their approximate locations:

- NORTH**: Located at the top of the city, colored light blue.
- NORTHWEST**: Located in the upper left, colored light green.
- NORTHEAST**: Located in the upper right, colored light purple.
- CENTRAL**: Located in the center, colored light blue.
- WEST**: Located on the left side, colored light green.
- SOUTH**: Located in the lower center, colored light yellow.
- SOUTHEAST**: Located in the lower right, colored light pink.

Major roads shown include: Silverbell Rd, Loop Station Rd, Guadalupe Rd, Terrell Rd, Light Rd, Santa Rd, McPherson Rd, Tanager Rd, Aransas Dr, Overton Rd, Wages Rd, Orange Grove Rd, Sunrise Dr, San Antonio Rd, Broadway Bl, 22nd St, Stella Rd, Houston Rd, Riva Rd, Old Spanish Tr, Marsh Station Rd, San Antonio Rd, Gattuso Riva Rd, Melrose Rd, 19th St, 20th St, 21st St, 22nd St, 23rd St, 24th St, 25th St, 26th St, 27th St, 28th St, 29th St, 30th St, 31st St, 32nd St, 33rd St, 34th St, 35th St, 36th St, 37th St, 38th St, 39th St, 40th St, 41st St, 42nd St, 43rd St, 44th St, 45th St, 46th St, 47th St, 48th St, 49th St, 50th St, 51st St, 52nd St, 53rd St, 54th St, 55th St, 56th St, 57th St, 58th St, 59th St, 60th St, 61st St, 62nd St, 63rd St, 64th St, 65th St, 66th St, 67th St, 68th St, 69th St, 70th St, 71st St, 72nd St, 73rd St, 74th St, 75th St, 76th St, 77th St, 78th St, 79th St, 80th St, 81st St, 82nd St, 83rd St, 84th St, 85th St, 86th St, 87th St, 88th St, 89th St, 90th St, 91st St, 92nd St, 93rd St, 94th St, 95th St, 96th St, 97th St, 98th St, 99th St, 100th St.

2. NECESSARY PUBLIC SERVICES

As defined in ARS §11-1102 (V)(7)(c), necessary public services include any “street facilities located in the service area, including arterial or collector streets or roads that have been designated on an officially adopted plan of the county, traffic signals and rights-of-way and improvements thereon. Improvements to rights-of-way do not include streetcars, railways or other forms of transportation and their corresponding tracks.” Necessary public services must include facilities that “have a life expectancy of three or more years and that are owned and operated by or on behalf of the county”.

This IIP includes funding for additional travel lanes, turn lanes and other intersection improvements, and right-of-way acquisition for future roadway projects.

2.1. EXISTING NEEDS

For each necessary public service for which impact fees will be used, this document shall include the following:

Per ARS §11-1102 (F)(1):

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

Per ARS §11-1102 (F)(2):

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

Pima County and the consultant team identified the roadway projects which will be included in the development fee study as necessary public services. These projects, summarized in Exhibit 2, are necessary mainly due to the expected growth which was documented in the Land Use Assumptions report. The table includes the costs for all projects, and the detailed cost calculations and assumptions for new projects are included in the appendix. The total cost of these projects is \$201,947,891. The projects include the following:

- Central
 - Valencia Road, 0.9 miles east of Kolb Road to 0.8 miles west of Old Vail Road (RTA)
 - This project will widen Valencia Road to a 6-lane divided roadway with shoulders, sidewalks, and drainage improvements.
 - Swan Road/Los Reales Road intersection
 - This project will provide intersection improvements including necessary turn lanes and the construction of either a traffic signal or a roundabout. The exact improvements will not be known until a detailed traffic study can be completed.
 - ITS Improvements
 - The ITS (Intelligent Transportation System) improvements consist of new technology which will be installed at existing signalized intersections. The improvements allow signal timing and coordination to be adjusted in near real-time to decrease delays and improve traffic flow.
 - Country Club Road, I-10 to Valencia Road
 - This project consists of purchasing right-of-way along Country Club Road in preparation for a future widening to 4 lanes. A separate ADOT project is planned to construct a new traffic interchange at I-10 and Country Club Road.
- Southeast
 - Houghton Road, 0.2 mi south of Golf Links Road to Escalante Road (RTA)
 - This is a portion of the larger RTA project which spans 13 miles from Tanque Verde Road to I-10. Improvements in this section include widening to a 6-lane divided roadway with shoulders, drainage improvements, and sidewalks.

Exhibit 2. Necessary Streets Facilities

Service Area	Project No.	Project	Limits		Project Description	# of Lanes	Length /Units	Total Cost
CENTRAL	1	Valencia Road	0.9 mi east of Kolb Road	0.8 mi west of Old Vail Road	Widening	6	0.7	\$12,600,000
	2	Swan Road/Los Reales Road	N/A	N/A	Intersection Improvements	N/A	1.0	\$2,000,000
	3	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	17	\$733,771
	4	Country Club Road	I-10	Valencia Road	ROW Purchase	N/A	N/A	\$5,424,518
	Central Service Area Total							\$20,758,289
SOUTHEAST	5	Houghton Road	0.2 mi south of Golf Links Road	Escalante Road	Widening	6	0.8	\$14,400,000
	6	Valencia Road	Houghton Road	Old Spanish Trail	New Construction	2	2.6	\$16,000,000
	7	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	2	\$86,326
	8	Houghton Road	I-10	Andrada Polytech	Widening	4	2.9	\$34,800,000
	9	Colossal Cave Road - 2 Locations	Mary Ann Cleveland Way	Camino Loma Alta	Turn Lanes/ Intersection Improvements	N/A	2	\$3,068,410
	Southeast Service Area Total							\$68,354,736

Exhibit 2 (cont'd). Necessary Streets Facilities

Service Area	Project No.	Project	Limits		Project Description	# of Lanes	Length /Units	Total Cost
NORTH	10	Silverbell Road	Sunset Road Benjamin Road	Sunset Dunes Abington Road	Widening	3	2.0	\$18,000,000
	11	Orange Grove Road	La Cañada Drive	Oracle Rd	Widening	4	0.9	\$10,800,000
	12	Sunset Road	I-10	River Road	New Construction	3	0.3	\$11,381,500
	13	Linda Vista Road - 3 Locations	Hartman Road	Camino de Oeste	Turn Lanes	N/A	3	\$900,000
	14	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	38	\$1,640,194
	North Service Area Total							\$42,721,694
NORTHEAST	15	1st Avenue	Orange Grove Road	Ina Road	Widening	4	1.0	\$6,556,000
	16	Houghton Road	Speedway Boulevard	Drachman Street	Widening	4	0.3	\$9,000,000
	17	Houghton Road/ Catalina Highway	N/A	N/A	Intersection Improvements	N/A	1	\$2,000,000
	18	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	26	\$1,122,238
	19	Tanque Verde Road/Soldier Trail	N/A	N/A	Intersection Improvements	N/A	1	\$2,000,000
	20	Orange Grove Road	1st Avenue	Camino de Michael	Widening	4	0.45	\$5,400,000
	Northeast Service Area Total							\$26,078,238

Exhibit 2 (cont'd). Necessary Streets Facilities

Service Area	Project No.	Project	Limits		Project Description	# of Lanes	Length /Units	Total Cost
NORTHWEST	21	Sandario Road/Picture Rocks Road	N/A	N/A	Intersection Improvements	N/A	1	\$2,000,000
	22	Twin Peaks Road	Twin Peaks Road	Saguaro Highlands	Widening	4	0.55	\$6,600,000
	North Service Area Total							\$8,600,000
SOUTH	23	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	8	\$345,304
	24	Andrada Road	West Access for Hook M	1 mile west of Houghton	New Construction	2	1.8	\$11,070,000
	South Service Area Total							\$11,415,304
WEST	25	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	10	\$431,630
	26	Valencia Road	Mission Road	1/4 mi W of Cardinal Ave	Widening	6	1.0	\$18,000,000
	27	Camino Verde/Valencia Road	N/A	N/A	Intersection Improvements	N/A	1	\$500,000
	28	Irvington Road	Sunset Boulevard	Ajo Way	New Construction	2	0.8	\$5,088,000
	West Service Area Total							\$24,019,630
TOTALS								\$201,947,891

- Southeast (cont'd)
 - Valencia Road, Houghton Road to Old Spanish Trail
 - This project consists of construction of a new two-lane roadway between Houghton Road and Old Spanish Trail with shoulders, drainage improvements and a new bridge over the Pantano Wash.
 - ITS Improvements
 - The ITS (Intelligent Transportation System) improvements consist of new technology which will be installed at existing signalized intersections. The improvements allow signal timing and coordination to be adjusted in near real-time to decrease delays and improve traffic flow.
 - Houghton Road, I-10 to Andrada Polytech
 - This project includes widening Houghton Road to a 4-lane divided roadway with shoulders and drainage improvements.
 - Colossal Cave Road, 2 locations between Mary Ann Cleveland Way and Camino Loma Alta
 - This will include intersection improvements at two intersections along Colossal Cave Road, likely to be at Mary Ann Cleveland Way, Via Rancho Del Lago, or Camino Loma Alta. Intersection improvements may include construction of turn lanes, traffic signals, or roundabouts. The exact improvements and locations will not be known until a detailed traffic study is completed.
- North
 - Silverbell Road, Sunset Road to Sunset Dunes Place and Benjamin Road to Abington Road (RTA)
 - This is a portion of the larger RTA project from Ina Road to Grant Road. This section will include improving the roadway to a 3-lane section with shoulders, sidewalks and drainage improvements.
 - Orange Grove Road, La Cañada Drive to Oracle Road
 - This project consists of widening Orange Grove Road to a 4-lane roadway with shoulders, sidewalks, and drainage improvements to match the recently improved segment to the west.

- Sunset Road, I-10 to River Road (RTA)
 - This is a portion of the larger RTA project from Silverbell Road to River Road. Phase 1, from Silverbell Road to I-10 has been completed. Phase 2 (this project) will include construction of a new 3-lane roadway from the existing terminus at the I-10 westbound frontage road to River Road. This project includes a bridge over the Rillito River, shoulders, sidewalks and drainage improvements.
- Linda Vista Road, 3 locations between Hartman Road and Camino de Oeste
 - This will include turn lane improvements at three intersections along Linda Vista Road, likely at Hartman Road, Bald Eagle Avenue, and Camino de Oeste. The exact improvements will not be known until detailed traffic studies are completed.
- ITS Improvements
 - The ITS (Intelligent Transportation System) improvements consist of new technology which will be installed at existing signalized intersections. The improvements allow signal timing and coordination to be adjusted in near real-time to decrease delays and improve traffic flow.
- Northeast
 - 1st Avenue, Orange Grove Road to Ina Road (RTA)
 - This project includes widening the roadway to a 4-lane divided roadway with shoulders, sidewalks and drainage improvements.
 - Houghton Road, Speedway Boulevard to Drachman Street (RTA)
 - This is a portion of the larger RTA project which spans 13 miles from Tanque Verde Road to I-10. Improvements in this section include widening to a 4-lane divided roadway with new bridges (over the Tanque Verde and Agua Caliente washes), shoulders, sidewalks and drainage improvements.
 - Houghton Road/Catalina Highway intersection
 - This project will provide intersection improvements including turn lanes and the construction of either a traffic signal or a roundabout. The exact improvements will not be known until a detailed traffic study can be completed.

- ITS Improvements
 - The ITS (Intelligent Transportation System) improvements consist of new technology which will be installed at existing signalized intersections. The improvements allow signal timing and coordination to be adjusted in near real-time to decrease delays and improve traffic flow.
- Tanque Verde Road/Soldier Trail intersection
 - This project will provide intersection improvements including the construction of a traffic signal or a roundabout. The exact improvements will not be known until a detailed traffic study can be completed.
- Orange Grove Road, 1st Avenue to Camino de Michael
 - This project includes widening Orange Grove Road to a 4-lane divided roadway with shoulders and drainage improvements.
- Northwest
 - Sandario Road/Picture Rocks Road intersection
 - This project will provide intersection improvements including turn lanes and construction of either a traffic signal, or a roundabout. The exact improvements will not be known until a detailed traffic study can be completed.
 - Twin Peaks Road, Twin Peaks Road to Saguaro Highlands
 - This project consists of widening the roadway to a 4-lane divided roadway over Rattlesnake Pass. The roadway will also include shoulders, sidewalks, and drainage improvements.
- South
 - ITS Improvements
 - The ITS (Intelligent Transportation System) improvements consist of new technology which will be installed at existing signalized intersections. The improvements allow signal timing and coordination to be adjusted in near real-time to decrease delays and improve traffic flow.
 - Andrada Road, west access of Hook M to 1 mile west of Houghton Road
 - Andrada Road will be an extension to the west from the existing paved roadway; the project will include construction of a 2-lane roadway with shoulders, and drainage improvements.

- West
 - ITS Improvements
 - The ITS (Intelligent Transportation System) improvements consist of new technology which will be installed at existing signalized intersections. The improvements allow signal timing and coordination to be adjusted in near real-time to decrease delays and improve traffic flow.
 - Valencia Road, Mission Road to ¼ mile west of Cardinal Avenue
 - This project consists of widening Valencia Road to a 6-lane divided roadway to match the roadway to the east. The project will also include shoulders, sidewalks, and drainage improvements.
 - Camino Verde/Valencia Road intersection
 - This project will include the construction of new turn lanes which may also require reconstruction of a portion of the traffic signal to accommodate the wider intersection approaches.
 - Irvington Road, Sunset Boulevard to Ajo Way
 - This project consists of constructing a new 2-lane roadway to extend Irvington Road from its current terminus at Sunset Boulevard to Ajo Way. The roadway will include shoulders and drainage improvements.

Based on the 10-year framework required by the statute, the analysis included years 2019 through 2029. The street facilities projects for that period include approximately 57 lane-miles of new and improved roadways, physical intersection improvements at 10 locations, ITS improvements at 101 intersections, and right-of-way purchase for the future Country Club Road corridor widening.

Historical traffic volumes for each roadway project are available in the Pima Association of Governments (PAG) *Transportation Data Management System*¹. Data was also supplemented using Pima County traffic counts available on the County website. Further, PAG maintains a model representing the regional transportation network incorporating the planned 5-year *Transportation Improvement Program*² (TIP) projects. The 2017 to 2022 TIP was reviewed during the preparation of this report. In addition, PAG provides estimated traffic volumes for year 2045 as part of the Regional Mobility and Accessibility Plan (RMAP).

¹ PAG *Transportation Data Management System (TDMS)*. < <https://pag.ms2soft.com/tcds/tsearch.asp?loc=Pag&mod=>>

² PAG *Transportation Improvement Program (TIP)*.

<<https://www.pagnet.org/Programs/TransportationPlanning/PlansandPrograms/TransportationImprovementProgram/tabid/172/Default.aspx>>

The PAG models do not directly include ITE trip generation rates, which are typically used to determine how much traffic a development will generate. Instead, the model develops trip generation based on the characteristics of each Traffic Analysis Zone (TAZ), such as employment and population. Trips are then distributed on the surrounding roadway network based on origins and destinations, trip length, travel time, and available roadway capacity.

Starting with the historical and expected growth in the PAG models and adjusting for anticipated growth based on the Land Use Assumptions report and region expertise, traffic volumes for each roadway project were forecasted for years 2019 and 2029. Each vehicular capacity project was forecasted to have low, medium, or high growth during the study period based on historic growth for similar roadways and future traffic growth potential in the area (vacant land, availability of alternative routes, etc.). Based on historic traffic volume growth in the region, the low growth was assumed to be 0.7% per year, medium growth was assumed to be 2.0% per year, and high growth is 4.0% per year. In addition, a few of the infrastructure projects were assigned a custom growth rate based on knowledge of anticipated large development projects in the area.

To estimate the necessary public services, the daily roadway capacity for each project was calculated following the 2013 Florida Department of Transportation (FDOT)³ standards for LOS D. The FDOT LOS standards are widely applied by planning and transportation departments across the U.S. to estimate planning level capacities for roadways. Exhibit 3 compares traffic volumes and roadway capacities for years 2019 and 2029 for the selected projects.

³ Florida Department of Transportation 2013 Quality/Level of Service Handbook https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/content/planning/systems/programs/sm/los/pdfs/2013_qlos_handbook.pdf?sfvrsn=22690bd2_0

Exhibit 3. Existing (2019) and Future (2029) Traffic Volumes

Service Area	Project No.	Project	Limits		Existing Volume (veh/day)	Existing Capacity (veh/day)	Future Volume (veh/day)	Future Capacity (veh/day)
CENTRAL	1	Valencia Road	0.9 mi east of Kolb Road	0.8 mi west of Old Vail Road	20,334	17,563	30,099	56,606
	2	Swan Road/Los Reales Road	N/A	N/A	N/A	N/A	N/A	N/A
	3	ITS Improvements	N/A	N/A	N/A	N/A	N/A	N/A
	4	Country Club Road	I-10	Valencia Road	N/A	N/A	N/A	0
SOUTHEAST	5	Houghton Road	0.2 mi south of Golf Links Road	Escalante Road	23,498	17,563	34,783	56,606
	6	Valencia Road	Houghton Road	Old Spanish Trail	N/A	N/A	7,200	17,563
	7	ITS Improvements	N/A	N/A	N/A	N/A	N/A	N/A
	8	Houghton Road	I-10	Andrada Polytech	13,758	17,563	20,365	37,611
	9	Colossal Cave Road - 2 Locations	N/A	N/A	N/A	N/A	N/A	N/A

Exhibit 3 (cont'd). Existing (2019) and Future (2029) Traffic Volumes

Service Area	Project No.	Project	Limits		Existing Volume (veh/day)	Existing Capacity (veh/day)	Future Volume (veh/day)	Future Capacity (veh/day)
NORTH	10	Silverbell Road	Sunset Road	Sunset Dunes Place	10,862	12,744	13,240	17,563
			Benjamin Road	Abington Road				
	11	Orange Grove Road	La Cañada Drive	Oracle Rd	18,093	17,563	26,783	37,611
	12	Sunset Road	I-10	River Road	N/A	N/A	10,781	15,479
	13	Linda Vista Road - 3 Locations	Hartman Road	Camino de Oeste	N/A	N/A	N/A	N/A
	14	ITS Improvements	N/A	N/A	N/A	N/A	N/A	N/A
NORTHEAST	15	1st Avenue	Orange Grove Road	Ina Road	15,306	17,563	16,412	37,611
	16	Houghton Road	Speedway Boulevard	Drachman Street	11,939	17,563	14,553	37,611
	17	Houghton Road/Catalina Highway	N/A	N/A	N/A	N/A	N/A	N/A
	18	ITS Improvements	N/A	N/A	N/A	N/A	N/A	N/A
	19	Tanque Verde Road/Soldier Trail	N/A	N/A	N/A	N/A	N/A	N/A
	20	Orange Grove Road	1st Avenue	Camino de Michael	14,352	17,563	21,244	37,611

Exhibit 3 (cont'd). Existing (2019) and Future (2029) Traffic Volumes

Service Area	Project No.	Project	Limits		Existing Volume (veh/day)	Existing Capacity (veh/day)	Future Volume (veh/day)	Future Capacity (veh/day)
NORTHWEST	21	Sandario Road/Picture Rocks Road	N/A	N/A	N/A	N/A	N/A	N/A
	22	Twin Peaks Road	Twin Peaks Road	Saguaro Highlands	6,444	12,744	15,255	37,611
SOUTH	23	ITS Improvements	N/A	N/A	N/A	N/A	N/A	N/A
	24	Andrada Road	West Access for Hook M	1 mile west of Houghton Road	N/A	N/A	7,994	17,563
WEST	25	ITS Improvements	N/A	N/A	N/A	N/A	N/A	N/A
	26	Valencia Road	Mission Road	1/4 mi W of Cardinal Ave	39,613	37,611	58,636	56,606
	27	Camino Verde/Valencia Road	N/A	N/A	N/A	N/A	N/A	N/A
	28	Irvington Road	Sunset Boulevard	Ajo Way	N/A	N/A	14,179	17,563

2.2. PROJECTED NEEDS

In addition to the existing needs, the statute requires that the following must be included in this document for each necessary public service for which impact fees will be used:

Per ARS §11-1102 (F)(3):

- “A description of all or the parts of the necessary public services or facility expansions and their costs necessitated by and attributable to new development in the service area based on the approved land use assumptions, including a forecast of the cost of infrastructure, improvements, real property, financing, engineering and architectural services. The description shall be prepared by qualified professionals who are licensed in this state, as applicable.”

As indicated in Exhibit 2, the anticipated necessary roadway improvements include approximately 57 lane-miles of new and improved roadways, physical intersection improvements at 10 locations, ITS improvements at 101 intersections, and right-of-way purchase for the future Country Club Road corridor widening. The total cost is \$201,947,891. However, only about 46% of the cost of all the necessary improvements are attributable to new development. Based on the ratio of the traffic expected to be generated by development in the next 10 years and the additional capacity which will be added with each project, the estimated total cost attributable to development is \$93,911,982, as shown in Exhibit 4. As seen in the exhibit, new development is only responsible for the portion of the new capacity which it will use.

Experience in other jurisdictions has shown that ITS improvements generally result in a capacity increase of approximately 10%, which matches the projected population growth in the County over the next 10 years (the period of this study); therefore, it is estimated that the new growth will use all of the new signal capacity. Turn lanes also result in a capacity increase of approximately 10% based on FDOT guidelines. For RTA projects, the cost attributable to development is capped at the remaining County contribution for that project; in some cases, this results in development contributing less than they would without the cap. The cost of preparing the initial Impact Fee Study is \$197,908, and the required update to the impact fee documents in 5 years is expected to cost approximately \$95,000. Therefore, the total cost for providing these necessary public services associated with streets is \$94,204,890 during the 10-year period.

Exhibit 4. Cost Attributable to Development

Service Area	Project No.	Project	Limits		Project Description	# of Lanes	Length /Units	Total Cost	% Used by Development	Cost Attributable to Development
CENTRAL	1	Valencia Road	0.9 mi east of Kolb Road	0.8 mi west of Old Vail Road	Widening	6	0.7	\$12,600,000	25%	\$3,151,503
	2	Swan Road/Los Reales Road	N/A	N/A	Intersection Improvements	N/A	1.0	\$2,000,000	100%	\$2,000,000
	3	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	17	\$733,771	100%	\$733,771
	4	Country Club Road	I-10	Valencia Road	ROW Purchase	N/A	N/A	\$5,424,518	100%	\$5,424,518
	Central Service Area Total							\$20,758,289	N/A	\$11,309,791
SOUTHEAST	5	Houghton Road	0.2 mi south of Golf Links Road	Escalante Road	Widening	6	0.8	\$14,400,000	29%	\$4,162,206
	6	Valencia Road	Houghton Road	Old Spanish Trail	New Construction	2	2.6	\$16,000,000	41%	\$6,559,309
	7	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	2	\$86,326	100%	\$86,326
	8	Houghton Road	I-10	Andrada Polytech	Widening	4	2.9	\$34,800,000	33%	\$11,468,518
	9	Colossal Cave Road - 2 Locations	Mary Ann Cleveland Way	Camino Loma Alta	Turn Lanes/ Intersection Improvements	N/A	2	\$3,068,410	100%	\$3,068,410
	Southeast Service Area Total							\$68,354,736	N/A	\$25,344,769

Exhibit 4 (cont'd). Cost Attributable to Development

Service Area	Project No.	Project	Limits		Project Description	# of Lanes	Length /Units	Total Cost	% Used by Development	Cost Attributable to Development
NORTH	10	Silverbell Road	Sunset Road	Sunset Dunes	Widening	3	2.0	\$18,000,000	49%	\$6,400,000
			Benjamin Road	Abington Road						
	11	Orange Grove Road	La Cañada Drive	Oracle Rd	Widening	4	0.9	\$10,800,000	43%	\$4,680,931
	12	Sunset Road	I-10	River Road	New Construction	3	0.3	\$11,381,500	70%	\$3,104,669
	13	Linda Vista Road - 3 Locations	Hartman Road	Camino de Oeste	Turn Lanes	N/A	3	\$900,000	100%	\$900,000
	14	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	38	\$1,640,194	100%	\$1,640,194
North Service Area Total								\$42,721,694	N/A	\$16,725,793
NORTHEAST	15	1st Avenue	Orange Grove Road	Ina Road	Widening	4	1.0	\$6,556,000	6%	\$361,622
	16	Houghton Road	Speedway Boulevard	Drachman Street	Widening	4	0.3	\$9,000,000	13%	\$1,173,691
	17	Houghton Road/ Catalina Highway	N/A	N/A	Intersection Improvements	N/A	1	\$2,000,000	100%	\$2,000,000
	18	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	26	\$1,122,238	100%	\$1,122,238
	19	Tanque Verde Road/Soldier Trail	N/A	N/A	Intersection Improvements	N/A	1	\$2,000,000	100%	\$2,000,000
	20	Orange Grove Road	1st Avenue	Camino de Michael	Widening	4	0.45	\$5,400,000	34%	\$1,856,494
Northeast Service Area Total								\$26,078,238	N/A	\$8,514,045

Exhibit 4 (cont'd). Cost Attributable to Development

Service Area	Project No.	Project	Limits		Project Description	# of Lanes	Length /Units	Total Cost	% Used by Development	Cost Attributable to Development
NORTHWEST	21	Sandario Road/Picture Rocks Road	N/A	N/A	Intersection Improvements	N/A	1	\$2,000,000	100%	\$2,000,000
	22	Twin Peaks Road	Twin Peaks Road	Saguaro Highlands	Widening	4	0.55	\$6,600,000	35%	\$1,594,341
	North Service Area Total							\$8,600,000	N/A	\$3,594,341
SOUTH	23	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	8	\$345,304	100%	\$345,304
	24	Andrada Road	West Access for Hook M	1 mile west of Houghton	New Construction	2	1.8	\$11,070,000	46%	\$5,038,687
	South Service Area Total							\$11,415,304	N/A	\$5,383,991
WEST	25	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	10	\$431,630	100%	\$431,630
	26	Valencia Road	Mission Road	1/4 mi W of Cardinal Ave	Widening	6	1.0	\$18,000,000	100%	\$18,000,000
	27	Camino Verde/Valencia Road	N/A	N/A	Intersection Improvements	N/A	1	\$500,000	100%	\$500,000
	28	Irvington Road	Sunset Boulevard	Ajo Way	New Construction	2	0.8	\$5,088,000	81%	\$4,107,621
	West Service Area Total							\$24,019,630	N/A	\$23,039,251
TOTALS								\$201,947,891	TOTAL ATT. TO DEVELOPMENT	\$93,911,982

2.3. MAINTENANCE AND OPERATION OF STREET FACILITIES

The State statute also requires Counties to identify the maintenance and operation costs of the facilities identified in the IIP:

ARS §11-1102 (F)(5):

- “A description of all the costs necessitated by ongoing maintenance and operations of the necessary public services once construction is completed and a description of the source of revenue to be used to fund the maintenance and operations.”

Pima County’s website includes information on pavement preservation treatments and costs (<http://webcms.pima.gov/cms/One.aspx?pagelid=356628>), and updated cost information was provided by the County where applicable. The appropriate treatments for new facilities are either preventive (to anticipate deterioration) or maintenance (to extend the life of the roadway). Exhibit 5 shows the approximate costs for those treatments.

Exhibit 5. Pavement Preservation Costs

Treatment	Typical Application	Unit Cost (\$/SY)	Treatment Lifespan	Cost per Lane Mile ¹
Preventive	Fog Seal	\$1.50	4 years	\$13,200
Maintenance	Double Chip/Micro-surface	\$8.00	8 years	\$70,400

¹ Based on 15-foot lane width to include shoulder

Given the lifespan of the treatments above, it is anticipated that each new road will receive either two preventive treatments (years 4 and 8), or one maintenance treatment (year 8) within the IIP’s 10-year period. Considering that the IIP includes approximately 100 lane-miles of facilities to be maintained by Pima County, the annual maintenance costs for the facilities in this IIP would range between \$260,000 and \$704,000 per year.

Maintenance and operations of the new street facilities are anticipated to be funded with revenues from the Highway User Revenue Fund (HURF) and Vehicle License Tax (VLT). Pima County’s pavement preservation program for arterial and collector roadways includes \$16 million in the current fiscal year.

3. TRAVEL DEMAND PER DEMAND UNIT

ARS §11-1102 (F)(4) requires that this document shall include “a table that establishes the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table that establishes the ratio of a service unit to various types of land uses, including residential, commercial and industrial.”

Trip generation for future residential, commercial, and industrial developments was estimated based on typical land use categories. The trip generation rates for each land use followed the ITE *Trip Generation Manual*⁴ guidelines. Exhibit 6 (Page 25) shows the estimated roadway demand per unit of land use, and descriptions of the factors and land use categories are included in the following sections. Note that the land use categories used to calculate the Equivalent Demand Units (EDUs) for each category are also listed in the table for reference.

3.1. LAND USE CATEGORIES

The land uses are broken into seven categories for ease of reference, including residential, commercial/retail, industrial, hospital/clinic, recreational, office, and charter/private schools. Each land use is discussed in further detail in this section; however, it should be noted that if a land use is not specifically listed in this document, the owner should consult with Pima County to determine what land use category is appropriate for the proposed use (if any).

3.1.1. *Single Family Detached*

This includes all non-age restricted single family homes (except for mobile homes). The estimated roadway demand per one single family detached home is assumed to be one EDU.

3.1.2. *Attached Residential/Multi-Family*

This land use includes apartments and townhomes, regardless of unit or building size.

3.1.3. *Senior Housing*

Senior housing refers to all age-restricted housing, including both single family detached homes and attached/multi-family units.

⁴ *Trip Generation Manual*, 10th Edition. Institute of Transportation Engineers (ITE). Washington, D.C., 2017.

3.1.4. Assisted Living/Congregate Care

This includes any complex which provides centralized amenities and/or some level of medical services or medical care.

3.1.5. Mobile Home Park

Any mobile home should be considered under this use.

3.1.6. Hotel/Motel

All hotels and motels are included.

3.1.7. Retail

Retail includes a variety of shopping facilities, including big box stores, grocery stores, home improvement stores/superstores, factory outlets, discount clubs/superstores, nurseries, automobile sales, and other general commercial/retail facilities.

3.1.8. Services

Services include developments such as restaurants, auto repair centers, car washes, day cares, and other similar facilities.

3.1.9. High-Traffic Retail/Services

This category includes fast food restaurants, coffee shops, pharmacies with drive thrus, drive-in banks, gas stations, convenience stores, combination gas station/convenience stores, and other similar high traffic generators.

3.1.10. Industrial

All light, medium, and heavy industrial uses are included, as well as manufacturing uses, warehouses, and self-storage facilities.

3.1.11. Hospital/Clinic

Includes all hospitals and clinics. Clinics often have lab facilities, pharmacies, and a wide range of services (compared to medical offices which usually include a specialized service). Veterinary hospitals/clinics can also be included under this use.

3.1.12. Recreational

This includes athletic clubs, health/fitness clubs, racquet/tennis clubs, and other similar uses.

3.1.13. General Office

All non-medical offices are included in this use.

3.1.14. Medical/Dental/Vet Office

This use includes any medical, dental, or veterinarian office.

3.1.15. Public Schools

All public schools are included, regardless of the grades which the school serves.

3.1.16. Charter/Private Schools

All charter and private schools are included, regardless of the grades which the school serves.

3.2. ITE TRIP GENERATION RATES

The *ITE Trip Generation Manual* contains trip generation rates for a wide variety of land uses by unit of land use (i.e. per dwelling unit for residential developments, per 1,000 square feet for commercial, etc.). The weekday peak hour trip generation rates were applied in the demand unit calculations because the peak hour is generally the controlling period for which necessary roadway improvements are determined.

3.3. PRIMARY TRIPS

Primary trips are trips generated with the specific purpose of visiting a generator. Trips to and from a land use which a driver intended to make without making other stops along the way are considered primary trips. Drivers may choose to divert from their originally intended path to make a secondary stop or may choose to make a stop along their original path. These trips are called diverted trips and pass-by trips, respectively.

The *ITE Trip Generation Handbook*⁵ provides the percentage of diverted trips and pass-by trips for each land use except for schools. The calculations for estimating impact fees are based solely on primary trips; therefore, ITE data was used to determine the percentage of primary trips for most land uses, and school primary trips were estimated based on previous experience.

⁵ *Trip Generation Handbook*, 3rd Edition. Institute of Transportation Engineers (ITE). Washington, D.C., 2014.

Exhibit 6. Estimate of Streets Facility Demand per Unit of Land Use

Land Use Category	Unit	% Primary Trips	Peak Hour Rate per Unit	Average Trip Length (mi)	% Travel within Unincorporated PC	% Travel on Arterials	% Travel Demand on PC Arterial Network	Vehicle Miles of Travel Demand per Unit - Peak Hour	Representative ITE Category	Proposed EDUs
Residential										
Single Family Detached	Dwelling Unit	100%	0.99	10.7	50%	80%	40%	4.2	210	1.0
Attached Residential/Multi-Family	Dwelling Unit	100%	0.56	10.7	50%	80%	40%	2.4	220	0.6
Senior Housing	Dwelling Unit	100%	0.30	10.7	50%	80%	40%	1.3	251	0.3
Assisted Living/Congregate Care	Dwelling Unit	100%	0.18	10.7	50%	80%	40%	0.8	253	0.2
Mobile Home Park	Dwelling Unit	100%	0.46	10.7	50%	80%	40%	2.0	240	0.5
Commercial/Retail										
Hotel/Motel	Rooms	100%	0.49	10.7	50%	80%	40%	2.1	310, 320	0.5
Retail	1000 sf	66%	3.05	7.9	50%	80%	40%	6.4	820, 823	1.5
Services	1000 sf	66%	6.44	7.9	50%	80%	40%	13.4	932, 942	3.2
High-Traffic Retail/Services	1000 sf	23%	21.14	7.9	50%	80%	40%	15.4	881, 912, 934	3.6
Industrial	1000 sf	70%	0.41	10.7	50%	80%	40%	1.2	110, 130, 140, 150, 151	0.3
Hospital/Clinic	1000 sf	60%	2.33	10.7	50%	80%	40%	6.0	610, 630	1.4
Recreational	1000 sf	75%	3.45	11.4	50%	80%	40%	11.8	492	2.8
Office										
General Office	1000 sf	75%	1.16	12.2	50%	80%	40%	4.2	710	1.0
Medical/Dental/Vet Office	1000 sf	75%	3.46	12.2	50%	80%	40%	12.7	720	3.0
Public Schools	1000 sf	25%	5.17	4.5	50%	80%	40%	2.3	520, 530	0.5
Charter/Private Schools	1000 sf	25%	7.39	7.0	50%	80%	40%	5.2	534, 536, 537	1.2

3.4. AVERAGE TRIP LENGTH

The average trip length for a specific land use is available in the National Household Travel Survey (NHTS) *Summary of Travel Trends*⁶ report. Table 5b in the NHTS report shows trends in the average person trip length by trip purpose. The table reflects the survey data collected from a sample of U.S. households. Public school trip length was calculated as the average of school trips in the NHTS report and an estimate of elementary school trip length, which is considerably lower given the typical proximity of residences to elementary schools.

3.5. TRAVEL DEMAND ON PIMA COUNTY ARTERIAL ROAD NETWORK

Only trips on the arterial and major collector roadways are considered in the estimation of the development fee amounts. This study assumes that 80% of travel occurs on arterial and major collector roadways for all land use types, which is consistent with national guidelines and local data. Furthermore, travel to/from business and residential units in unincorporated Pima County generally involves travel in multiple jurisdictions. Therefore, it was assumed that 50% of the business/residential travel originating or ending in unincorporated Pima County would take place on Pima County roads based on the location of trip generators and attractors in the County and throughout the region. The travel demand on the Pima County arterial road network is the product of percent travel within the County and percent travel on arterial and major collector roadways.

3.6. VEHICLE MILES OF TRAVEL DEMAND

The vehicle miles of travel demand per unit is the product of four factors previously discussed: percent primary trips, average peak hour trip generation rate, average trip length, and percent travel demand on Pima County arterial network. As an example, the vehicle miles of travel demand for the single family residential use is calculated as follows:

$$VMT \text{ per Unit} = \%Primary \text{ Trips} \times Average \text{ Peak Hour Trip Generation Rate} \\ \times Average \text{ Trip Length} \times \%Travel \text{ on PC Arterial Network}$$

$$VMT \text{ per Unit} = 100\% \times 0.99 \times 10.7 \times 40\%$$

$$VMT \text{ per Unit} = 4.2$$

⁶ Federal Highway Administration (FHWA). *Summary of Travel Trends: 2017 National Household Travel Survey*. < https://nhts.omni.gov/assets/2017_nhts_summary_travel_trends.pdf >

3.7. EQUIVALENT DEMAND PER UNIT (EDU)

An EDU value of 1.0 is assigned to the single family residential land use. The equivalent demand per service unit for all the remaining land uses is calculated as follows, using the multi-family residential land use as an example:

$$EDU_{Multi-Family} = \frac{VMT \text{ per Unit}_{Multi-Family}}{VMT \text{ per Unit}_{Single-Family}}$$

$$EDU_{Multi-Family} = \frac{2.4}{4.2} = 0.6$$

4. PROJECTED SERVICE UNITS FOR NEW DEVELOPMENT

Per ARS §11-1102 (F)(6):

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

Per ARS §11-1102 (F)(7):

- “The projected demand for necessary public services or facility expansions required by new service units for a period of not more than ten years.”

The Land Use Assumptions report provided the summary of 10-year growth projections for unincorporated Pima County for the purposes of the roadway impact fee study update. The estimated population and employment growth data per service area for 2029 conditions is provided in Exhibit 7. Based on the exhibit, it is estimated that approximately 10,000 new residential permits will be issued in a 10-year period in unincorporated Pima County. Further, approximately 8,245 new jobs are expected by 2029. These assumed land assumptions were used in this IIP to estimate the amount of new facilities needed to serve the projected new developments.

As shown in Exhibit 6, ITE trip generation rates are calculated based on the number of dwelling units for residential land uses. For the remaining land uses, the unit for the ITE trip generation rates is 1,000 S.F. To convert the number of expected new jobs from Exhibit 7 into square footage, averages from the *ITE Trip Generation Manual* were adopted in this study.

Exhibit 7. Residential and Employment Land Use Assumptions: 10-Year Growth

Service Area	Residential Permits	Jobs by Land Use		
		Industrial	Retail	Office
Central	900	1,091	52	589
Southeast	2,900	445	371	668
North	1,700	433	260	1,039
Northeast	900	45	118	744
Northwest	400	148	7	92
Southeast	600	124	41	247
West	2,600	260	242	1,229
TOTAL	10,000	2,546	1,092	4,607

Exhibit 8 shows the assumed gross building area per employee for each land use. Further, it is assumed that 80% of new residential permits will be single family units, 10% will be age-restricted units, and 10% will be multi-family units. Exhibit 9 shows the anticipated new units for all land uses.

Exhibit 8. Non-Residential Development Attributes

Land Use	Gross Building Area per Employee (S.F.)
Retail	600
Office	400
Industrial	2,500

Exhibit 9. Anticipated Units by Land Use Type

Land Use		Single Family	Age-Restricted	Multi-Family	Commercial/Retail	Office	Industrial
Unit		Dwelling	Dwelling	Dwelling	1000 sq. ft.	1000 sq. ft.	1000 sq. ft.
Anticipated Units	Central	720	90	90	31	235	2,727
	Southeast	2,320	290	290	223	267	1,113
	North	1,360	170	170	156	416	1,082
	Northeast	720	90	90	71	297	113
	Northwest	320	40	40	4	37	371
	South	480	60	60	25	99	309
	West	2,080	260	260	145	492	649
TOTAL		8,000	1,000	1,000	655	1,843	6,365

5. REVENUE CONSIDERATIONS

Per ARS §11-1102 (F)(8):

- “A forecast of revenues generated by new service units other than development fees, including estimated state shared revenue, highway user revenue, federal revenue, ad valorem property taxes, construction contracting or similar excise taxes and the capital recovery portion of utility fees attributable to development based on the approved land use assumptions, and a plan to include these contributions in determining the extent of the burden imposed by the development as required in subsection B, paragraph 12 of this section.”

To provide an equitable obligation of transportation impact fees, both costs and credits must be considered. New development must be given credit for contributions to the various forms of funding which may be used for roadway improvements, such as the contribution of a development impact fee. Other sources of roadway infrastructure funding which can be identified as coming from a new development must be considered as credits for that development.

In addition, the costs associated with correcting existing deficiencies cannot be placed as a burden on new development. Any money spent from common improvement funds to address a deficiency must consider credits to new development for which the improvement is associated. At this time, the only continuing revenue source which may be considered as credits to new development is the sales tax contribution to the Regional Transportation Authority (RTA). The County uses HURF/VLT funding for maintenance and operations only, so there is no applicable HURF/VLT credit. Property taxes are not used for expansion/capital projects either, and other state and federal revenues are undeterminable and intermittent.

The RTA credit is based on the estimated sales tax by land use type, using standard construction costs⁷ and estimated residential unit sizes as listed below:

- a. Single family residence (general and age-restricted) – 2,000 sq. ft. of living space, 400 sq. ft. garage
- b. Multi-family residence – 1,115 sq. ft. total space per unit (rental)
- c. Assisted living/congregate care – 350 sq. ft. of total space per unit (bed)

⁷ Building Valuation Data – February 2019. International Code Council,

<https://www.iccsafe.org/wp-content/uploads/BVD-BSJ-FEB19-converted.pdf>, accessed May 2019.

- d. Mobile home park – 900 sq. ft. of total space per unit (mobile home)
- e. Hotel/motel – 550 sq. ft. of total space per unit (room)

All other impact fee categories use 1,000 square feet of construction to calculate the RTA credit. The RTA tax rate is 0.5% and is applied to the taxable value of new construction, which is 65% of the contract amount pursuant to state law. The tax paid is then adjusted to reflect the share of overall RTA plan projects that are included in this IIP. Exhibit 10 shows the calculation of the RTA credit for each land use type.

Exhibit 10. RTA Credit Calculations

Land Use Category	ICC Building Group	ICC Construction Type	ICC Cost per sq ft	Average	Typical sq ft	Cost per Unit	Taxable Cost Per Unit (65%)	RTA Sales Tax (0.5%)	RTA Sales Tax Credit Factor	RTA Sales Tax Credit per Unit	RTA Sales Tax Credit per Unit, Rounded
Residential											
Single Family Detached	R3 - residential one and two family	VB	\$122.46	\$122.46	2,000	\$264,412	\$171,868	\$859.34	8.0%	\$68.75	\$69.00
	U - utility (garage)	VB	\$48.73	\$48.73	400						
Attached Residential/ Multi-Family	R2 - residential multi-family	VB	\$112.76	\$112.76	1,115	\$125,727	\$81,723	\$408.61	8.0%	\$32.69	\$33.00
Senior Housing	R3 - residential one and two family	VB	\$122.46	\$122.46	2,000	\$264,412	\$171,868	\$859.34	8.0%	\$68.75	\$69.00
	U - utility (garage)	VB	\$48.73	\$48.73	400						
Assisted Living/ Congregate Care	I2 - institutional, nursing homes	VA	\$174.02								
	R4 - care/assisted living	IB	\$191.05	\$182.54	350	\$63,887	\$41,527	\$207.63	8.0%	\$16.61	\$17.00
Mobile Home Park	R2 - residential multi-family	VB	\$112.76	\$112.76	900	\$101,484	\$65,965	\$329.82	8.0%	\$26.39	\$27.00
Commercial/Retail											
Hotel/Motel	R1 - residential hotels	VB	\$143.96	\$143.96	550	\$79,178	\$51,466	\$257.33	8.0%	\$20.59	\$21.00
Retail	M - mercantile	IIIB	\$111.83	\$111.83	1,000	\$111,830	\$72,690	\$363.45	8.0%	\$29.08	\$30.00
Services	M - mercantile	IIIB	\$111.83	\$111.83	1,000	\$111,830	\$72,690	\$363.45	8.0%	\$29.08	\$30.00
High-Traffic Retail/Services	B - business	IIIB	\$154.63	\$154.63	1,000	\$154,630	\$100,510	\$502.55	8.0%	\$40.20	\$41.00
Industrial	B - business	IIIB	\$154.63	\$154.63	1,000	\$154,630	\$100,510	\$502.55	8.0%	\$40.20	\$41.00
Hospital/Clinic	I2 - institutional, hospitals	IB	\$323.73	\$323.73	1,000	\$323,730	\$210,425	\$1,052.12	8.0%	\$84.17	\$85.00
Recreational	A3 - museums, libraries	IIIB	\$148.07	\$148.07	1,000	\$148,070	\$96,246	\$481.23	8.0%	\$38.50	\$39.00
Office											
General Office	B - business	IIIB	\$154.63	\$154.63	1,000	\$154,630	\$100,510	\$502.55	8.0%	\$40.20	\$41.00
Medical/Dental/Vet Office	B - business	IIIB	\$154.63	\$154.63	1,000	\$154,630	\$100,510	\$502.55	8.0%	\$40.20	\$41.00
Public Schools	E - educational	IIIB	\$166.43	\$166.43	1,000	\$166,430	\$108,180	\$540.90	8.0%	\$43.27	\$44.00
Charter/Private Schools	E - educational	IIIB	\$166.43	\$166.43	1,000	\$166,430	\$108,180	\$540.90	8.0%	\$43.27	\$44.00

APPENDIX

- **List of Preparers**
- **Detailed Project Cost Calculations**

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Pima County, Arizona
Impact Fee Update

Street Facilities

Infrastructure Improvements Plan

Public Report
Draft

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October 9, 2019

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TABLE OF CONTENTS

1. INTRODUCTION	1
1.1. Allocation of Growth within Service Areas	2
2. NECESSARY PUBLIC SERVICES	4
2.1. Existing Needs	4
2.2. Projected Needs	13
2.3. Maintenance and Operation of Street Facilities	17
3. TRAVEL DEMAND PER DEMAND UNIT	18
3.1. Land Use Categories	18
3.1.1. Single Family Detached.....	18
3.1.2. Attached Residential/Multi-Family.....	18
3.1.3. Senior Housing.....	18
3.1.4. Assisted Living/Congregate Care	19
3.1.5. Mobile Home Park.....	19
3.1.6. Hotel/Motel.....	19
3.1.7. Retail.....	19
3.1.8. Services	19
3.1.9. High-Traffic Retail/Services	19
3.1.10. Industrial.....	19
3.1.11. Hospital/Clinic	19
3.1.12. Recreational	20
3.1.13. General Office	20
3.1.14. Medical/Dental/Vet Office	20
3.1.15. Charter/Private Schools.....	20
3.2. ITE Trip Generation Rates	20
3.3. Primary Trips	20
3.4. Average Trip Length	22
3.5. Travel Demand on Pima County Arterial Road Network	22
3.6. Vehicle Miles of Travel Demand	22
3.7. Equivalent Demand per Unit (EDU)	23
4. PROJECTED SERVICE UNITS FOR NEW DEVELOPMENT	24
5. REVENUE CONSIDERATIONS	26

APPENDIX

List of Preparers

Detailed Project Cost Calculations

LIST OF EXHIBITS

Exhibit 1. Streets Service Areas3

Exhibit 2. Necessary Streets Facilities6

Exhibit 3. Existing (2019) and Future (2029) Traffic Volumes10

Exhibit 4. Cost Attributable to Development.....14

Exhibit 5. Pavement Preservation Costs.....17

Exhibit 6. Estimate of Streets Facility Demand per Unit of Land Use.....21

Exhibit 7. Residential and Employment Land Use Assumptions: 10-Year Growth24

Exhibit 8. Non-Residential Development Attributes.....25

Exhibit 9. Anticipated Units by Land Use Type25

Exhibit 10. RTA Credit Calculations28

1. INTRODUCTION

The Roadway Development Impact Fee in unincorporated Pima County is assessed for new developments to offset some of the infrastructure costs associated with growth. The County currently charges fees for one public category: roadways. To continue assessing and collecting fees, the County must update its program to comply with the new state statute ARS §11-1102. The update of the Roadway Development Impact Fee program includes preparation of new development impact fee studies, project lists, fee schedules, and county ordinance.

Before assessing the development fees, a County must release to the public a written report of the land use assumptions and an infrastructure improvements plan (IIP) for each fee category. As defined in ARS §11-1102 (V)(5), "Infrastructure improvements plan' means a written plan that identifies each necessary public service or facility expansion that is proposed to be the subject of development fees and otherwise complies with the requirements of this section and may be the county's capital improvements plan". The statute ARS §11-1102 limits the types of "necessary public services" which impact fees can fund.

This report is a required document that identifies the infrastructure needs for the street facilities in unincorporated Pima County. The analysis only includes arterials and major collectors, since roadways with lower classifications are generally internal to development and are constructed during the development process. This analysis will be used in the subsequent calculation of impact fee rates.

The land use assumptions that are used in this report to evaluate infrastructure needs are documented separately in the Land Use Assumptions report. The Land Use Assumptions report provides a quantification of expected future development within each of the service areas for which impact fees will be assessed.

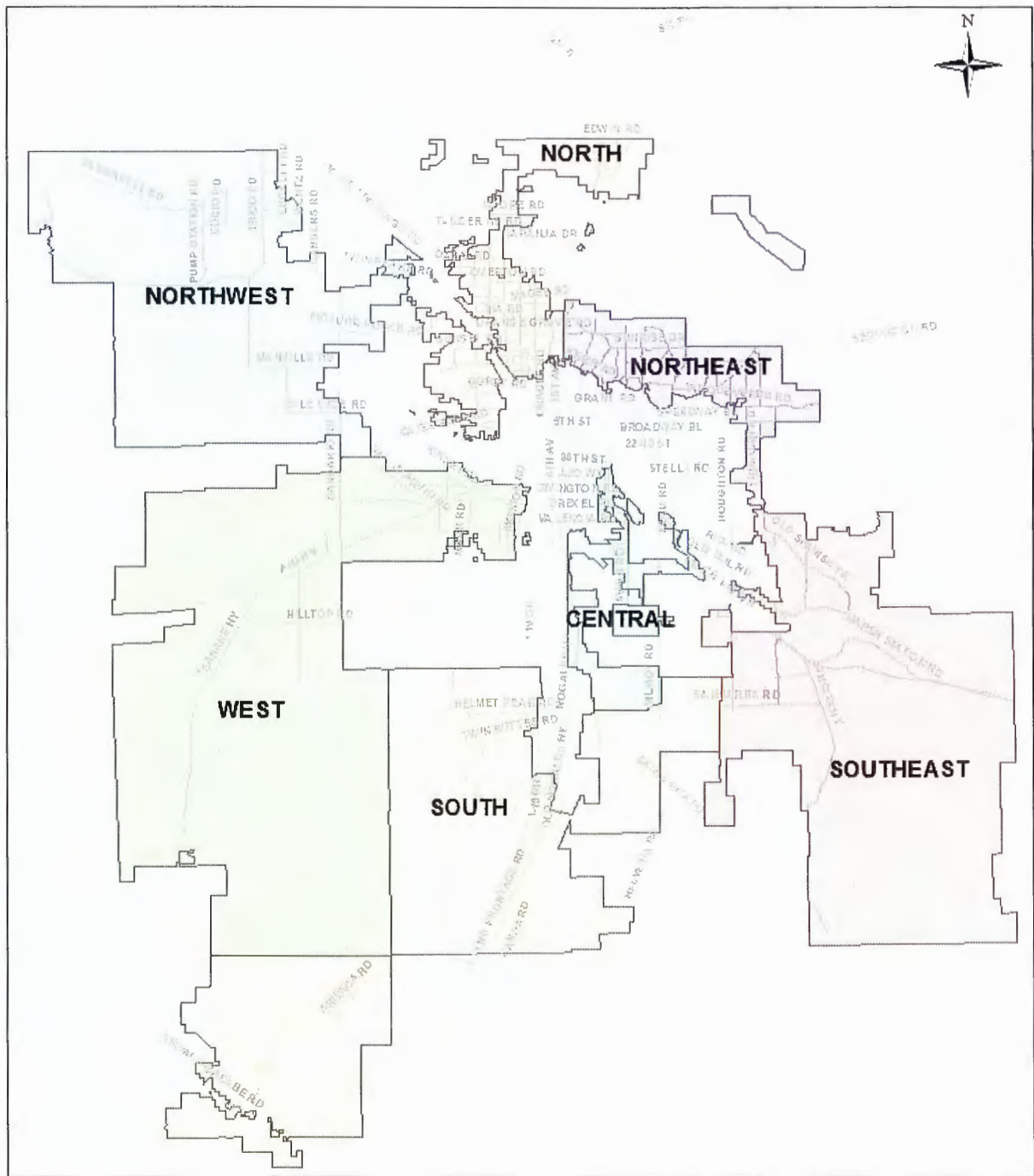
1.1. ALLOCATION OF GROWTH WITHIN SERVICE AREAS

As defined in ARS §11-1102 (V)(9), “‘Service area’ means any specified area within the boundaries of a county in which development will be served by necessary public services or facility expansions and within which a substantial nexus exists between the necessary public services or facility expansions and the development being served as prescribed in the infrastructure improvements plan”.

The existing impact fee program includes ten service areas in unincorporated Pima County: Altar Valley, Avra Valley, Catalina Foothills, Cañada del Oro, San Xavier, Santa Cruz, Silverbell-Tortolita, Southeast, Southwest, and Tucson Mountains. The County reviewed the existing service areas and modified the boundaries to better align development patterns and projects and to ensure a substantial nexus as required by the statute.

The new program generally excludes federal lands, tribal lands, and other conservation areas that are not expected to be developed. As a guideline, major roadways and topographic features were considered when delineating service areas. A map of the seven proposed service areas in unincorporated Pima County is shown in Exhibit 1.

Exhibit 1. Streets Service Areas



2. NECESSARY PUBLIC SERVICES

As defined in ARS §11-1102 (V)(7)(c), necessary public services include any “street facilities located in the service area, including arterial or collector streets or roads that have been designated on an officially adopted plan of the county, traffic signals and rights-of-way and improvements thereon. Improvements to rights-of-way do not include streetcars, railways or other forms of transportation and their corresponding tracks.” Necessary public services must include facilities that “have a life expectancy of three or more years and that are owned and operated by or on behalf of the county”.

This IIP includes funding for additional travel lanes, turn lanes and other intersection improvements, and right-of-way acquisition for future roadway projects.

2.1. EXISTING NEEDS

For each necessary public service for which impact fees will be used, this document shall include the following:

Per ARS §11-1102 (F)(1):

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

Per ARS §11-1102 (F)(2):

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

Pima County and the consultant team identified the roadway projects which will be included in the development fee study as necessary public services. These projects, shown in Exhibit 2, are necessary mainly due to the expected growth which was documented in the Land Use Assumptions report. The table includes the costs for all projects, and the detailed cost calculations and assumptions for new projects are included in the appendix. The costs for legacy projects were provided by the County and were calculated based on the remaining recoverable costs for projects which have been constructed and have excess capacity available to serve traffic generated by future development. Non-County (i.e. federal, state, regional) dollars spent on previous projects are not considered recoverable.

Based on the 10-year framework required by the statute, the analysis included years 2019 through 2029. The street facilities projects for that period include approximately 67 lane-miles of new and improved roadways, physical intersection improvements at 7 locations, ITS improvements at 101 intersections, right-of-way purchase for the future Country Club Road corridor widening, and approximately 44 miles of legacy facilities reserved for future development.

Historical traffic volumes for each roadway project are available in the Pima Association of Governments (PAG) *Transportation Data Management System*¹. Data was also supplemented using Pima County traffic counts available in the County website. Further, PAG maintains a model representing the regional transportation network incorporating the planned 5-year *Transportation Improvement Program*² (TIP) projects. The 2017 to 2022 TIP was used for this report. In addition, PAG provides estimated traffic volumes for year 2045 as part of the Regional Mobility and Accessibility Plan (RMAP).

The PAG models do not directly include ITE trip generation rates, which are typically used to determine how much traffic a development will generate. Instead, the model develops trip generation based on the characteristics of each Traffic Analysis Zone (TAZ), such as employment and population. Trips are then distributed on the surrounding roadway network based on origins and destinations, trip length, travel time, and available roadway capacity.

¹ PAG Transportation Data Management System (TDMS). < <https://pag.ms2soft.com/tcds/tsearch.asp?loc=Pag&mod=>>

² PAG Transportation Improvement Program (TIP).

<<https://www.pagnet.org/Programs/TransportationPlanning/PlansandPrograms/TransportationImprovementProgram/tabid/172/Default.aspx>>

Exhibit 2. Necessary Streets Facilities

Service Area	Project No.	Project	Limits		Project Description	# of Lanes	Length /Units	Total Capacity Cost - New /Improvements	Legacy Cost
CENTRAL	1	Valencia Road	0.9 mi east of Kolb Road	0.8 mi west of Old Vail Road	Widening	6	0.6	\$11,000,000	
	2	Swan Road/Los Reales Road	N/A	N/A	Intersection Improvements	N/A	1.0	\$2,000,000	
	3	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	17	\$733,771	
	4	Country Club Road	I-10	Valencia Road	ROW Purchase	N/A	N/A	\$5,435,022	
	Central Service Area Total							\$19,168,793	\$0
SOUTHEAST	5	Houghton Road	0.2 mi south of Golf Links Road	Escalante Road	Widening	6	0.75	\$14,000,000	
	6	Valencia Road	Houghton Road	Old Spanish Trail	New Construction	2	2.6	\$16,000,000	
	7	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	2	\$86,326	
	8	Houghton Road	I-10	Andrada Polytech	Widening	4	2.9	\$30,004,000	
	Southeast Service Area Total							\$60,090,326	\$0

Exhibit 2 (cont'd). Necessary Streets Facilities

Service Area	Project No.	Project	Limits		Project Description	# of Lanes	Length /Units	Total Capacity Cost - New /Improvements	Legacy Cost
NORTH	9	Silverbell Road	Sunset Road	Sunset Dunes	Widening	3	2.0	\$18,000,000	
			Benjamen Road	Abington Road					
	10	Orange Grove Road	La Cañada Drive	Oracle Rd	Widening	4	0.9	\$11,000,000	
	11	Sunset Road	I-10	River Road	New Construction	3	0.3	\$11,381,500	
	12	Linda Vista Road - 3 Locations	Hartman Road	Camino de Oeste	Turn Lanes	N/A	3	\$900,000	
	13	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	38	\$1,640,194	
	14	Wetmore Road/ Ruthrauff Road	La Cholla Boulevard	Fairview Ave	Legacy Improvement	4	1.8		\$7,600,000
North Service Area Total								\$42,921,694	\$7,600,000
NORTHEAST	15	1st Avenue	Orange Grove Road	Ina Road	Widening	4	1.0	\$6,556,000	
	16	Houghton Road	Speedway Boulevard	Drachman Street	Widening	4	0.3	\$9,000,000	
	17	Houghton Road/Catalina Highway	N/A	N/A	Intersection Improvements	N/A	1	\$2,000,000	
	18	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	26	\$1,122,238	
	19	Craycroft Road	River Road	Sunrise Drive	Legacy Improvement	4	2.4		\$13,307,000
	Northeast Service Area Total								\$18,678,238

Exhibit 2 (cont'd). Necessary Streets Facilities

Service Area	Project No.	Project	Limits		Project Description	# of Lanes	Length /Units	Total Capacity Cost - New /Improvements	Legacy Cost
NORTHWEST	20	Sandario Road/Picture Rocks Road	N/A	N/A	Intersection Improvements	N/A	1	\$2,000,000	
	21	Twin Peaks Road	Twin Peaks Road	Saguaro Highlands	Widening	4	0.55	\$7,000,000	
	North Service Area Total							\$9,000,000	\$0
SOUTH	22	I-19 East Frontage Road	Canoa Road	Continental Road	Legacy Improvement	2	4.6		\$3,650,000
	23	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	8	\$345,304	
	24	Andrada Road	West Access for Hook M	1 mile west of Houghton	New Construction	2	1.3	\$8,000,000	
	South Service Area Total							\$8,345,304	\$3,650,000
WEST	25	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	10	\$431,630	
	26	Valencia Road	Mission Road	1/4 mi W of Cardinal Ave	Widening	6	1.0	\$18,000,000	
	27	Camino Verde/Valencia Road	N/A	N/A	Intersection Improvements	N/A	1	\$500,000	
	28	Irvington Road	Sunset Boulevard	Ajo Way	New Construction	2	0.85	\$6,000,000	
	29	Valencia Road	Camino de la Tierra	Mark Road	Legacy Improvement	5	2.0		\$5,800,000
	West Service Area Total							\$24,931,630	\$5,800,000
TOTALS								\$183,135,985	\$30,357,000
								\$213,492,985	

Using the historical and expected growth in the PAG models and adjusting for anticipated growth based on the Land Use Assumptions report and region expertise, traffic volumes for each roadway project were forecasted for years 2019 and 2029. Each vehicular capacity project was forecasted to have low, medium, or high growth during the study period based on historic growth for similar roadways and future traffic growth potential in the area (vacant land, availability of alternative routes, etc.). Based on historic traffic volume growth in the region, the low growth was assumed to be 0.7% per year, medium growth was assumed to be 2.0% per year, and high growth is 4.0% per year. In addition, a few of the infrastructure projects were assigned a custom growth rate based on knowledge of large development projects in the area.

To estimate the necessary public services, the daily roadway capacity for each project was calculated following the 2013 Florida Department of Transportation (FDOT)³ standards for LOS D. The FDOT LOS standards are widely applied by planning and transportation departments across the U.S. to estimate planning level capacities for roadways. Exhibit 3 compares traffic volumes and roadway capacities for years 2019 and 2029 for the selected projects.

³ Florida Department of Transportation 2013 Quality/Level of Service Handbook https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/content/planning/systems/programs/sm/los/pdfs/2013_qlos_handbook.pdf?sfvrsn=22690bd2_0

Exhibit 3. Existing (2019) and Future (2029) Traffic Volumes

Service Area	Project No.	Project	Limits		Existing Volume (veh/day)	Existing Capacity (veh/day)	Future Volume (veh/day)	Future Capacity (veh/day)
CENTRAL	1	Valencia Road	0.9 mi east of Kolb Road	0.8 mi west of Old Vail Road	20,334	17,563	30,099	56,606
	2	Swan Road/Los Reales Road	N/A	N/A	N/A	N/A	N/A	N/A
	3	ITS Improvements	N/A	N/A	N/A	N/A	N/A	N/A
	4	Country Club Road	I-10	Valencia Road	N/A	N/A	N/A	0
SOUTHEAST	5	Houghton Road	0.2 mi south of Golf Links Road	Escalante Road	23,498	17,563	34,783	56,606
	6	Valencia Road	Houghton Road	Old Spanish Trail	N/A	N/A	7,200	17,563
	7	ITS Improvements	N/A	N/A	N/A	N/A	N/A	N/A
	8	Houghton Road	I-10	Andrada Polytech	13,758	17,563	20,365	37,611

Exhibit 3 (cont'd). Existing (2019) and Future (2029) Traffic Volumes

Service Area	Project No.	Project	Limits		Existing Volume (veh/day)	Existing Capacity (veh/day)	Future Volume (veh/day)	Future Capacity (veh/day)
NORTH	9	Silverbell Road	Sunset Road	Sunset Dunes Place	10,862	12,744	13,240	17,563
			Benjamin Road	Abington Road				
	10	Orange Grove Road	La Cañada Drive	Oracle Rd	18,093	17,563	26,783	37,611
	11	Sunset Road	I-10	River Road	N/A	N/A	10,781	15,479
	12	Linda Vista Road - 3 Locations	Hartman Road	Camino de Oeste	N/A	N/A	N/A	N/A
	13	ITS Improvements	N/A	N/A	N/A	N/A	N/A	N/A
NORTHEAST	14	Wetmore Road/ Ruthrauff Road	La Cholla Boulevard	Fairview Ave	22,126	16,727	26,971	35,820
	15	1st Avenue	Orange Grove Road	Ina Road	15,306	17,563	16,412	37,611
	16	Houghton Road	Speedway Boulevard	Drachman Street	11,939	17,563	14,553	37,611
	17	Houghton Road/Catalina Highway	N/A	N/A	N/A	N/A	N/A	N/A
	18	ITS Improvements	N/A	N/A	N/A	N/A	N/A	N/A
	19	Craycroft Road	River Road	Sunrise Drive	24,043	12,744	29,308	35,820

Exhibit 3 (cont'd). Existing (2019) and Future (2029) Traffic Volumes

Service Area	Project No.	Project	Limits		Existing Volume (veh/day)	Existing Capacity (veh/day)	Future Volume (veh/day)	Future Capacity (veh/day)
NORTHWEST	20	Sandario Road/Picture Rocks Road	N/A	N/A	N/A	N/A	N/A	N/A
	21	Twin Peaks Road	Twin Peaks Road	Saguaro Highlands	6,444	12,744	15,255	37,611
SOUTH	22	I-19 East Frontage Road	Canoa Road	Continental Road	3,488	12,744	5,163	16,727
	23	ITS Improvements	N/A	N/A	N/A	N/A	N/A	N/A
	24	Andrada Road	West Access for Hook M	1 mile west of Houghton Road	n/A	N/A	7,994	17,563
WEST	25	ITS Improvements	N/A	N/A	N/A	N/A	N/A	N/A
	26	Valencia Road	Mission Road	1/4 mi W of Cardinal Ave	39,613	37,611	58,636	56,606
	27	Camino Verde/Valencia Road	N/A	N/A	N/A	N/A	N/A	N/A
	28	Irvington Road	Sunset Boulevard	Ajo Way	N/A	N/A	14,179	17,563
	29	Valencia Road	Camino de la Tierra	Mark Road	26,037	16,727	38,541	35,820

2.2. PROJECTED NEEDS

In addition to the existing needs, the statute requires that the following must be included in this document for each necessary public service for which impact fees will be used:

Per ARS §11-1102 (F)(3):

- “A description of all or the parts of the necessary public services or facility expansions and their costs necessitated by and attributable to new development in the service area based on the approved land use assumptions, including a forecast of the cost of infrastructure, improvements, real property, financing, engineering and architectural services. The description shall be prepared by qualified professionals who are licensed in this state, as applicable.”

As indicated in Exhibit 2, there are approximately 67 lane-miles of new and improved roadways, physical intersection improvements at 7 locations, ITS improvements at 101 intersections, right-of-way purchase for the future Country Club Road corridor widening, and approximately 44 miles of legacy facilities with capacity available for development. Based on the ratio between the traffic generated by the development and the additional capacity in the future, there is an estimated total cost attributable to development of \$101,123,516, as shown in Exhibit 4. Experience in other jurisdictions has shown that ITS improvements generally result in a capacity increase of approximately 10%, which matches the projected population growth in the County over the next 10 years (the period of this study); therefore, it is estimated that the new growth will use all of the new signal capacity.

For RTA projects, the cost attributable to development is capped at the remaining County contribution for that project. The cost of preparing the initial Impact Fee Study is \$197,908, and the required update to the impact fee documents in 5 years is expected to cost approximately \$95,000. Therefore, the total cost for providing these necessary public services associated with streets is \$101,416,424 during the 10-year period.

Exhibit 4. Cost Attributable to Development

Service Area	Project No.	Project	Limits		Project Description	# of Lanes	Length /Units	Total Capacity Cost - New /Improvements	Legacy Cost	% Used by Development	Cost Attributable to Development
CENTRAL	1	Valencia Road	0.9 mi east of Kolb Road	0.8 mi west of Old Vail Road	Widening	6	0.6	\$11,000,000		25%	\$4,000,000
	2	Swan Road/Los Reales Road	N/A	N/A	Intersection Improvements	N/A	1.0	\$2,000,000		100%	\$2,000,000
	3	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	17	\$733,771		100%	\$733,771
	4	Country Club Road	I-10	Valencia Road	ROW Purchase	N/A	N/A	\$5,435,022		100%	\$5,435,022
	Central Service Area Total							\$19,168,793	\$0	N/A	\$12,168,793
SOUTHEAST	5	Houghton Road	0.2 mi south of Golf Links Road	Escalante Road	Widening	6	0.75	\$14,000,000		29%	\$4,849,398
	6	Valencia Road	Houghton Road	Old Spanish Trail	New Construction	2	2.6	\$16,000,000		41%	\$8,447,447
	7	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	2	\$86,326		100%	\$86,326
	8	Houghton Road	I-10	Andrada Polytech	Widening	4	2.9	\$30,004,000		33%	\$13,911,177
	Southeast Service Area Total							\$60,090,326	\$0	N/A	\$27,294,349

Exhibit 4 (cont'd). Cost Attributable to Development

Service Area	Project No.	Project	Limits		Project Description	# of Lanes	Length /Units	Total Capacity Cost - New /Improvements	Legacy Cost	% Used by Development	Cost Attributable to Development
NORTH	9	Silverbell Road	Sunset Road	Sunset Dunes	Widening	3	2.0	\$18,000,000		49%	\$6,400,000
			Benjamin Road	Abington Road							
	10	Orange Grove Road	La Cañada Drive	Oracle Rd	Widening	4	0.9	\$11,000,000		43%	\$6,014,092
	11	Sunset Road	I-10	River Road	New Construction	3	0.3	\$11,381,500		70%	\$2,350,000
	12	Linda Vista Road - 3 Locations	Hartman Road	Camino de Oeste	Turn Lanes	N/A	3	\$900,000		100%	\$900,000
	13	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	38	\$1,640,194		100%	\$1,640,194
	14	Wetmore Road/ Ruthrauff Road	La Cholla Boulevard	Fairview Ave	Legacy Improvement	4	1.8		\$7,600,000	25%	\$610,922
North Service Area Total								\$42,921,694	\$7,600,000	N/A	\$17,915,207
NORTHEAST	15	1st Avenue	Orange Grove Road	Ina Road	Widening	4	1.0	\$6,556,000		6%	\$700,000
	16	Houghton Road	Speedway Boulevard	Drachman Street	Widening	4	0.3	\$9,000,000		13%	\$2,738,953
	17	Houghton Road/Catalina	N/A	N/A	Intersection Improvements	N/A	1	\$2,000,000		100%	\$2,000,000
	18	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	26	\$1,122,238		100%	\$1,122,238
	19	Craycroft Road	River Road	Sunrise Drive	Legacy Improvement	4	2.4		\$13,307,000	23%	\$2,558,401
	Northeast Service Area Total							\$18,678,238	\$13,307,000	N/A	\$9,119,592

Exhibit 4 (cont'd). Cost Attributable to Development

Service Area	Project No.	Project	Limits		Project Description	# of Lanes	Length /Units	Total Capacity Cost - New /Improvements	Legacy Cost	% Used by Development	Cost Attributable to Development
NORTHWEST	20	Sandario Road/Picture Rocks Road	N/A	N/A	Intersection Improvements	N/A	1	\$2,000,000		100%	\$2,000,000
	21	Twin Peaks Road	Twin Peaks Road	Saguaro Highlands	Widening	4	0.55	\$7,000,000		35%	\$1,886,230
	North Service Area Total							\$9,000,000	\$0	N/A	\$3,886,230
SOUTH	22	I-19 East Frontage Road	Canoa Road	Continental Road	Legacy Improvement	2	4.6		\$3,650,000	42%	\$948,661
	23	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	8	\$345,304		100%	\$345,304
	24	Andrada Road	West Access for Hook M	1 mile west of Houghton	New Construction	2	1.3	\$8,000,000		46%	\$4,513,062
	South Service Area Total							\$8,345,304	\$3,650,000	N/A	\$5,807,027
WEST	25	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	10	\$431,630		100%	\$431,630
	26	Valencia Road	Mission Road	1/4 mi W of Cardinal Ave	Widening	6	1.0	\$18,000,000		100%	\$18,000,000
	27	Camino Verde/Valencia Road	N/A	N/A	Intersection Improvements	N/A	1	\$500,000		100%	\$500,000
	28	Irvington Road	Sunset Boulevard	Ajo Way	New Construction	2	0.85	\$6,000,000		81%	\$5,075,115
	29	Valencia Road	Camino de la Tierra	Mark Road	Legacy Improvement	5	2.0		\$5,800,000	100%	\$745,974
	West Service Area Total							\$24,931,630	\$5,800,000	N/A	\$24,752,719
Legacy								\$30,357,000	Legacy	\$4,863,958	
New/Improvement								\$183,135,985	New/ Improvement	\$96,079,959	
TOTAL COST FOR PROJECTS IN IIP								\$213,492,985	TOTAL ATT. TO DEVELOPMENT	\$100,943,917	

2.3. MAINTENANCE AND OPERATION OF STREET FACILITIES

The State statute also requires Counties to identify the maintenance and operation costs of the facilities identified in the IIP:

ARS §11-1102 (F)(5):

- “A description of all the costs necessitated by ongoing maintenance and operations of the necessary public services once construction is completed and a description of the source of revenue to be used to fund the maintenance and operations.”

Pima County's website includes information on pavement preservation treatments and costs (<http://webcms.pima.gov/cms/One.aspx?pageld=356628>), and updated cost information was provided by the County where applicable. The appropriate treatments for new facilities are either preventive (to anticipate deterioration) or maintenance (to extend the life of the roadway). Exhibit 5 shows the approximate costs for those treatments.

Exhibit 5. Pavement Preservation Costs

Treatment	Typical Application	Unit Cost (\$/SY)	Treatment Lifespan	Cost per Lane Mile ¹
Preventive	Fog Seal	\$1.50	4 years	\$13,200
Maintenance	Double Chip/Micro-surface	\$8.00	8 years	\$70,400

¹ Based on 15-foot lane width to include shoulder

Given the lifespan of the treatments above, it is anticipated that each new road will receive either two preventive treatments (years 4 and 8), or one maintenance treatment (year 8) within the IIP's 10-year period. Considering that the IIP includes approximately 100 lane-miles of facilities to be maintained by Pima County, the annual maintenance costs for the facilities in this IIP would range between \$260,000 and \$704,000 per year.

Maintenance and operations of the new street facilities are anticipated to be funded with revenues from the Highway User Revenue Fund (HURF) and Vehicle License Tax (VLT). Pima County's pavement preservation program for arterial and collector roadways includes \$16 million in the current fiscal year.

3. TRAVEL DEMAND PER DEMAND UNIT

ARS §11-1102 (F)(4) requires that this document shall include “a table that establishes the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table that establishes the ratio of a service unit to various types of land uses, including residential, commercial and industrial.”

Trip generation for future residential, commercial, and industrial developments was estimated based on typical land use categories. The trip generation rates for each land use followed the ITE *Trip Generation Manual*⁴ guidelines. Exhibit 6 (Page 21) shows the estimated roadway demand per unit of land use, and descriptions of the factors and land use categories are included in the following sections. Note that the land use categories used to calculate the Equivalent Demand Units (EDUs) for each category are also listed in the table for reference.

3.1. LAND USE CATEGORIES

The land uses are broken into seven categories for ease of reference, including residential, commercial/retail, industrial, hospital/clinic, recreational, office, and charter/private schools. Each land use is discussed in further detail in this section; however, it should be noted that if a land use is not specifically listed in this document, the owner should consult with Pima County to determine what land use category is appropriate for the proposed use (if any).

3.1.1. *Single Family Detached*

This includes all non-age restricted single family homes (except for mobile homes). The estimated roadway demand per one single family detached home is assumed to be one EDU.

3.1.2. *Attached Residential/Multi-Family*

This land use includes apartments and townhomes, regardless of unit or building size.

3.1.3. *Senior Housing*

Senior housing refers to all age-restricted housing, including both single family detached homes and attached/multi-family units.

⁴ *Trip Generation Manual*, 10th Edition. Institute of Transportation Engineers (ITE). Washington, D.C., 2017.

3.1.4. Assisted Living/Congregate Care

This includes any complex which provides centralized amenities and/or some level of medical services or medical care.

3.1.5. Mobile Home Park

Any mobile home should be considered under this use.

3.1.6. Hotel/Motel

All hotels and motels are included.

3.1.7. Retail

Retail includes a variety of shopping facilities, including big box stores, grocery stores, home improvement stores/superstores, factory outlets, discount clubs/superstores, nurseries, automobile sales, and other general commercial/retail facilities.

3.1.8. Services

Services include developments such as restaurants, auto repair centers, car washes, day cares, and other similar facilities.

3.1.9. High-Traffic Retail/Services

This category includes fast food restaurants, coffee shops, pharmacies with drive thrus, drive-in banks, gas stations, convenience stores, combination gas station/convenience stores, and other similar high traffic generators.

3.1.10. Industrial

All light, medium, and heavy industrial uses are included, as well as manufacturing uses, warehouses, and self-storage facilities.

3.1.11. Hospital/Clinic

Includes all hospitals and clinics. Clinics often have lab facilities, pharmacies, and a wide range of services (compared to medical offices which usually include a specialized service). Veterinary hospitals/clinics can also be included under this use.

3.1.12. Recreational

This includes athletic clubs, health/fitness clubs, racquet/tennis clubs, and other similar uses.

3.1.13. General Office

All non-medical offices are included in this use.

3.1.14. Medical/Dental/Vet Office

This use includes any medical, dental, or veterinarian office.

3.1.15. Public Schools

All public schools are included, regardless of the grades which the school serves.

3.1.16. Charter/Private Schools

All charter and private schools are included, regardless of the grades which the school serves.

3.2. ITE TRIP GENERATION RATES

The *ITE Trip Generation Manual* contains trip generation rates for a wide variety of land uses by unit of land use (i.e. per dwelling unit for residential developments, per 1,000 square feet for commercial, etc.). The weekday peak hour trip generation rates were applied in the demand unit calculations because the peak hour is generally the controlling period for which necessary roadway improvements are determined.

3.3. PRIMARY TRIPS

Primary trips are trips generated with the specific purpose of visiting a generator. Trips to and from a land use which a driver intended to make without making other stops along the way are considered primary trips. Drivers may choose to divert from their originally intended path to make a secondary stop or may choose to make a stop along their original path. These trips are called diverted trips and pass-by trips, respectively.

The *ITE Trip Generation Handbook*⁵ provides the percentage of diverted trips and pass-by trips for each land use except for schools. The calculations for estimating impact fees are based solely on primary trips; therefore, ITE data was used to determine the percentage of primary trips for most land uses, and school primary trips were estimated based on previous experience.

⁵ *Trip Generation Handbook*, 3rd Edition. Institute of Transportation Engineers (ITE). Washington, D.C., 2014.

Exhibit 6. Estimate of Streets Facility Demand per Unit of Land Use

Land Use Category	Unit	% Primary Trips	Peak Hour Rate per Unit	Average Trip Length (mi)	% Travel within Unincorporated PC	% Travel on Arterials	% Travel Demand on PC Arterial Network	Vehicle Miles of Travel Demand per Unit - Peak Hour	Representative ITE Category	Proposed EDUs
Residential										
Single Family Detached	Dwelling Unit	100%	0.99	11.6	50%	80%	40%	4.6	210	1.0
Attached Residential/Multi-Family	Dwelling Unit	100%	0.56	11.6	50%	80%	40%	2.6	220	0.6
Senior Housing	Dwelling Unit	100%	0.30	11.6	50%	80%	40%	1.4	251	0.3
Assisted Living/Congregate Care	Dwelling Unit	100%	0.18	11.6	50%	80%	40%	0.8	253	0.2
Mobile Home Park	Dwelling Unit	100%	0.46	11.6	50%	80%	40%	2.1	240	0.5
Commercial/Retail										
Hotel/Motel	Rooms	100%	0.49	11.6	50%	80%	40%	2.3	310, 320	0.5
Retail	1000 sf	66%	3.05	7.9	50%	80%	40%	6.4	820, 823	1.4
Services	1000 sf	66%	6.44	7.9	50%	80%	40%	13.4	932, 942	2.9
High-Traffic Retail/Services	1000 sf	23%	21.14	7.9	50%	80%	40%	15.4	881, 912, 934	3.3
Industrial	1000 sf	70%	0.41	11.6	50%	80%	40%	1.3	110, 130, 140, 150, 151	0.3
Hospital/Clinic	1000 sf	60%	2.33	11.6	50%	80%	40%	6.5	610, 630	1.4
Recreational	1000 sf	75%	3.45	11.4	50%	80%	40%	11.8	492	2.6
Office										
General Office	1000 sf	75%	1.16	12.2	50%	80%	40%	4.2	710	0.9
Medical/Dental/Vet Office	1000 sf	75%	3.46	12.2	50%	80%	40%	12.7	720	2.8
Public Schools	1000 sf	25%	5.17	4.5	50%	80%	40%	2.3	520, 530	0.5
Charter/Private Schools	1000 sf	25%	7.39	7.0	50%	80%	40%	5.2	534, 536, 537	1.1

3.4. AVERAGE TRIP LENGTH

The average trip length for a specific land use is available in the National Household Travel Survey (NHTS) *Summary of Travel Trends*⁶ report. Table 5b in the NHTS report shows trends in the average person trip length by trip purpose. The table reflects the survey data collected from a sample of U.S. households. Public school trip length was calculated as the average of school trips in the NHTS report and an estimate of elementary school trip length, which is considerably lower given the typical proximity of residences to elementary schools.

3.5. TRAVEL DEMAND ON PIMA COUNTY ARTERIAL ROAD NETWORK

Only trips on the arterial and major collector roadways are considered in the estimation of the development fee amounts. This study assumes that 80% of travel occurs on arterial and major collector roadways for all land use types. Furthermore, travel to/from business and residential units in unincorporated Pima County generally involves travel in multiple jurisdictions. Therefore, it was assumed that 50% of the business/residential travel originating or ending in unincorporated Pima County would take place on Pima County roads. The travel demand on the Pima County arterial road network is the product of percent travel within the County and percent travel on arterial and major collector roadways.

3.6. VEHICLE MILES OF TRAVEL DEMAND

The vehicle miles of travel demand per unit is the product of four factors previously discussed: percent primary trips, average peak hour trip generation rate, average trip length, and percent travel demand on Pima County arterial network. As an example, the vehicle miles of travel demand for the single family residential use is calculated as follows:

$$VMT \text{ per Unit} = \%Primary \text{ Trips} \times Average \text{ Peak Hour Trip Generation Rate} \\ \times Average \text{ Trip Length} \times \%Travel \text{ on PC Arterial Network}$$

$$VMT \text{ per Unit} = 100\% \times 0.99 \times 11.6 \times 40\%$$

$$VMT \text{ per Unit} = 4.6$$

⁶ Federal Highway Administration (FHWA). *Summary of Travel Trends: 2017 National Household Travel Survey*. < https://nhts.oia.gov/assets/2017_nhts_summary_travel_trends.pdf >

3.7. EQUIVALENT DEMAND PER UNIT (EDU)

An EDU value of 1.0 is assigned to the single family residential land use. The equivalent demand per service unit for all the remaining land uses is calculated as follows, using the multi-family residential land use as an example:

$$EDU_{Multi-Family} = \frac{VMT\ per\ Unit_{Multi-Family}}{VMT\ per\ Unit_{Single-Family}}$$

$$EDU_{Multi-Family} = \frac{2.6}{4.6} = 0.6$$

4. PROJECTED SERVICE UNITS FOR NEW DEVELOPMENT

Per ARS §11-1102 (F)(6):

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

Per ARS §11-1102 (F)(7):

- “The projected demand for necessary public services or facility expansions required by new service units for a period of not more than ten years.”

The Land Use Assumptions report provided the summary of 10-year growth projections for unincorporated Pima County for the purposes of the roadway impact fee study update. The estimated population and employment growth data per service area for 2029 conditions is provided in Exhibit 7. Based on the exhibit, it is estimated that approximately 10,000 new residential permits will be issued in a 10-year period in unincorporated Pima County. Further, approximately 8,245 new jobs are expected by 2029. These assumed land assumptions were used in this IIP to estimate the amount of new facilities needed to serve the projected new developments.

As shown in Exhibit 6, ITE trip generation rates are calculated based on the number of dwelling units for residential land uses. For the remaining land uses, the unit for the ITE trip generation rates is 1,000 S.F. To convert the number of expected new jobs from Exhibit 7 into square footage, averages from the *ITE Trip Generation Manual* were adopted in this study.

Exhibit 7. Residential and Employment Land Use Assumptions: 10-Year Growth

Service Area	Residential Permits	Jobs by Land Use		
		Industrial	Retail	Office
Central	900	1,091	52	589
Southeast	2,900	445	371	668
North	1,700	433	260	1,039
Northeast	900	45	118	744
Northwest	400	148	7	92
Southeast	600	124	41	247
West	2,600	260	242	1,229
TOTAL	10,000	2,546	1,092	4,607

Exhibit 8 shows the assumed gross building area per employee for each land use. Further, it is assumed that 80% of new residential permits will be single family units, 10% will be age-restricted units, and 10% will be multi-family units. Exhibit 9 shows the anticipated new units for all land uses.

Exhibit 8. Non-Residential Development Attributes

Land Use	Gross Building Area per Employee (S.F.)
Retail	600
Office	400
Industrial	2,500

Exhibit 9. Anticipated Units by Land Use Type

Land Use		Single Family	Age-Restricted	Multi-Family	Commercial/Retail	Office	Industrial
Unit		Dwelling	Dwelling	Dwelling	1000 sq. ft.	1000 sq. ft.	1000 sq. ft.
Anticipated Units	Central	720	90	90	31	235	2,727
	Southeast	2,320	290	290	223	267	1,113
	North	1,360	170	170	156	416	1,082
	Northeast	720	90	90	71	297	113
	Northwest	320	40	40	4	37	371
	South	480	60	60	25	99	309
	West	2,080	260	260	145	492	649
TOTAL		8,000	1,000	1,000	655	1,843	6,365

5. REVENUE CONSIDERATIONS

Per ARS §11-1102 (F)(8):

- “A forecast of revenues generated by new service units other than development fees, including estimated state shared revenue, highway user revenue, federal revenue, ad valorem property taxes, construction contracting or similar excise taxes and the capital recovery portion of utility fees attributable to development based on the approved land use assumptions, and a plan to include these contributions in determining the extent of the burden imposed by the development as required in subsection B, paragraph 12 of this section.”

To provide an equitable obligation of transportation impact fees, both costs and credits must be considered. New development must be given credit for contributions to the various forms of funding which may be used for roadway improvements, such as the contribution of a development impact fee. Other sources of roadway infrastructure funding which can be identified as coming from a new development must be considered as credits for that development.

In addition, the costs associated with correcting existing deficiencies cannot be placed as a burden on new development. Any money spent from common improvement funds to address a deficiency must consider credits to new development for which the improvement is associated. At this time, the only continuing revenue source which may be considered as credits to new development is the sales tax contribution to the Regional Transportation Authority (RTA). The County uses HURF/VLT funding for maintenance and operations only, so there is no applicable HURF/VLT credit. Property taxes are not used for expansion/capital projects either, and other state and federal revenues are undeterminable and intermittent.

The RTA credit is based on the estimated sales tax by land use type, using standard construction costs⁷ and estimated residential unit sizes as listed below:

- a. Single family residence (general and age-restricted) – 2,000 sq. ft. of living space, 400 sq. ft. garage
- b. Multi-family residence – 1,115 sq. ft. total space per unit (rental)
- c. Assisted living/congregate care – 350 sq. ft. of total space per unit (bed)

⁷ *Building Valuation Data – February 2019*. International Code Council,

<https://www.iccsafe.org/wp-content/uploads/BVD-BSJ-FEB19-converted.pdf>, accessed May 2019.

- d. Mobile home park – 900 sq. ft. of total space per unit (mobile home)
- e. Hotel/motel – 550 sq. ft. of total space per unit (room)

All other impact fee categories use 1,000 square feet of construction to calculate the RTA credit. The RTA tax rate is 0.5% and is applied to the taxable value of new construction, which is 65% of the contract amount pursuant to state law. The tax paid is then adjusted to reflect the share of overall RTA plan projects that are included in this IIP. Exhibit 10 shows the calculation of the RTA credit for each land use type.

Exhibit 10. RTA Credit Calculations

		ICC Construction Type	ICC Cost per sq ft	Average	Typical sq ft	Cost per Unit	Taxable Cost Per Unit (65%)	RTA Sales Tax (0.5%)	RTA Sales Tax Credit Factor	RTA Sales Tax Credit per Unit	RTA Sales Tax Credit per Unit, Rounded
Land Use Category	ICC Building Group										
Residential											
Single Family Detached	R3 - residential one and two family U - utility (garage)	VB	\$122.46	\$122.46	2,000	\$264,412	\$171,868	\$859.34	9.2%	\$78.71	\$79.00
		VB	\$48.73	\$48.73	400						
Attached Residential/ Multi-Family	R2 - residential multi-family	VB	\$112.76	\$112.76	1,115	\$125,727	\$81,723	\$408.61	9.2%	\$37.43	\$38.00
Senior Housing	R3 - residential one and two family U - utility (garage)	VB	\$122.46	\$122.46	2,000	\$264,412	\$171,868	\$859.34	9.2%	\$78.71	\$79.00
		VB	\$48.73	\$48.73	400						
Assisted Living/ Congregate Care	I2 - institutional, nursing homes R4 - care/assisted living	VA	\$174.02								
		IB	\$191.05	\$182.54	350	\$63,887	\$41,527	\$207.63	9.2%	\$19.02	\$20.00
Mobile Home Park	R2 - residential multi-family	VB	\$112.76	\$112.76	900	\$101,484	\$65,965	\$329.82	9.2%	\$30.21	\$31.00
Commercial/Retail											
Hotel/Motel	R1 - residential hotels	VB	\$143.96	\$143.96	550	\$79,178	\$51,466	\$257.33	9.2%	\$23.57	\$24.00
Retail	M - mercantile	IIIB	\$111.83	\$111.83	1,000	\$111,830	\$72,690	\$363.45	9.2%	\$33.29	\$34.00
Services	M - mercantile	IIIB	\$111.83	\$111.83	1,000	\$111,830	\$72,690	\$363.45	9.2%	\$33.29	\$34.00
High-Traffic Retail/Services	B - business	IIIB	\$154.63	\$154.63	1,000	\$154,630	\$100,510	\$502.55	9.2%	\$46.03	\$47.00
Industrial	B - business	IIIB	\$154.63	\$154.63	1,000	\$154,630	\$100,510	\$502.55	9.2%	\$46.03	\$47.00
Hospital/Clinic	I2 - institutional, hospitals	IB	\$323.73	\$323.73	1,000	\$323,730	\$210,425	\$1,052.12	9.2%	\$96.36	\$97.00
Recreational	A3 - museums, libraries	IIIB	\$148.07	\$148.07	1,000	\$148,070	\$96,246	\$481.23	9.2%	\$44.08	\$45.00
Office											
General Office	B - business	IIIB	\$154.63	\$154.63	1,000	\$154,630	\$100,510	\$502.55	9.2%	\$46.03	\$47.00
Medical/Dental/Vet Office	B - business	IIIB	\$154.63	\$154.63	1,000	\$154,630	\$100,510	\$502.55	9.2%	\$46.03	\$47.00
Public Schools	E - educational	IIIB	\$166.43	\$166.43	1,000	\$166,430	\$108,180	\$540.90	9.2%	\$49.54	\$50.00
Charter/Private Schools	E - educational	IIIB	\$166.43	\$166.43	1,000	\$166,430	\$108,180	\$540.90	9.2%	\$49.54	\$50.00

APPENDIX

- **List of Preparers**
- **Detailed Project Cost Calculations**

List of Preparers

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Estimation of Lane Mile Costs

Project	Agency	Year	Length (mi)	Lanes	Total Lane Miles	Construction Cost	Construction Cost/Lane-mi	Notes
Tangerine Rd, Dove Mountain Blvd to La Cañada Dr	Marana/Oro Valley/Pima County	2016	5	4	20	\$ 50,400,000	\$ 2,520,000	Significant drainage, CMAR, about 1.5 miles of side streets
Grant Rd, Stone Ave to Park Ave	Tucson	2016	1.2	6	7.2	\$ 14,480,000	\$ 2,011,111	
Valencia Rd, Wade Rd to Ajo Wy	Pima County	2018	3.2	4	12.8	\$ 20,224,000	\$ 1,580,000	
Cortaro Farms Rd	Pima County	2017	1.4	4	5.6	\$ 9,954,000	\$ 1,777,500	
Valencia Rd Extension, Houghton Rd to Old Spanish Tr	Rocking K/Pima County	2018	2.4	2	4.8	\$ 7,900,000	\$ 1,645,833	Excludes bridge, bank protection cost
Magee Rd, La Cañada Dr to Oracle Rd	Pima County	2013	1.2	4	4.8	\$ 9,975,000	\$ 2,078,125	
Houghton Rd, UPRR to I-10	Tucson	2018	1.1	6	6.6	\$ 7,713,000	\$ 1,168,636	
Broadway Blvd, Cmo Seco to Houghton Rd	Tucson	2018	2	4	8	\$ 13,638,000	\$ 1,704,750	
Sabino Canyon Rd Extension, Tanque Verde Rd to Kolb Rd	Tucson	2015	0.6	4	2.4	\$ 8,187,000	\$ 3,411,250	Excludes bridges at landfill, pantano
Hughes Access Rd, Nogales Hwy to Alvernon Wy	Pima County	2015	2.8	2	5.6	\$ 6,661,000	\$ 1,189,464	
Totals					77.8	\$ 149,132,000		
Average Construction Cost per Lane Mile							\$ 1,916,864	

Project Costs	Adjustment Factors*	Cost per lane mile	Notes
Construction Cost	N/A	\$ 1,916,864	See above recent projects for construction cost estimate
Right-of-Way (Assume Moderate)	10%	\$ 191,686	0% (None/Minor Easements), 10% (Moderate), 25% (New Corridor/Extensive, Suburban), 50-200% (New Corridor/Extensive, Urban)
Environmental and Archeological (Assume Standard)	0%	\$ -	0% (Standard), 10% (Moderate), 25% (Extensive)
Drainage and Structures (Assume Moderate Drainage/Structures)	10%	\$ 191,686	0% (Standard), 10% (Moderate Drainage/Structures), 20% (Extensive Bridges/Structures)
Federally Funded Projects (Assume no federal funding)	0%	\$ -	10% (Federally Funded)
Project Planning and Design	18%	\$ 345,035	Typical for all projects per RSC Study
Construction Management and Construction Staking	15.5%	\$ 297,114	Typical for all projects per RSC Study
Total		\$ 2,942,386	
Estimated Total Project Cost per Lane Mile for IIP		\$ 3,000,000	

* Adjustment factors and estimation methodology taken from: PAG Regionally Significant Corridors (RSC) Study, and additional information about the adjustment factors can be found in that report. (<https://www.pagnet.org/documents/transportation/rsc/RSC-FinalReport-2014-01-28.pdf>)

Service Area	Project No.	Project	Limits		Project Description	# of Lanes	Length/Units	Construction Cost		Non-Construction Costs	Total Capacity Cost - New Improvements	Legacy Cost	Volume from Development	Added Capacity	% Used by Development	Cost of Vehicular Improv (80%)	Cost of Ped/Bike Improv (20%)	Cost Attributable to Development	Source	Notes
CENTRAL	1	Valencia Road	0.9 mi east of Kolb Road	0.8 mi west of Old Vail Road	Widening	6	0.6	\$1,916,864	\$6,900,710	\$3,691,880	\$11,000,000		9,765	39,043	25%	\$8,800,000	\$2,200,000	\$4,000,000	Outstanding RTA Contribution	County contribution is \$4M, and County segment is 0.6 miles
	2	Swan Road/Los Reales Road	N/A	N/A	Intersection Improvements	N/A	1.0	\$2,000,000	\$2,000,000		\$2,000,000				100%			\$2,000,000	PCDOT	
	3	ITS Improvements	N/A	N/A	Signal Coordination/Timing	N/A	17	\$43,163	\$733,771		\$733,771				100%			\$733,771	PCDOT	
	4	Country Club Road	I-10	Valencia Road	ROW Purchase	N/A	N/A			\$5,435,022	\$5,435,022				100%			\$5,435,022	PCDOT	IF Balance for Central SA
Central Service Area Total											\$19,168,793	\$0			N/A	\$8,800,000	\$2,200,000	\$12,168,793		
SOUTHEAST	5	Houghton Road	0.2 mi south of Golf Links Road	Escalante Road	Widening	6	0.75	\$1,916,864	\$8,625,887	\$4,614,849	\$14,000,000		11,285	39,043	29%	\$11,200,000	\$2,800,000	\$4,849,398	Outstanding RTA Contribution	County total remaining contribution for Houghton Road (Tanque Verde to I-10) is \$22.2M. Capped at IF balance for Southeast SA.
	6	Valencia Road	Houghton Road	Old Spanish Trail	New Construction	2	2.6				\$16,000,000		7,200	17,563	41%	\$12,800,000	\$3,200,000	\$8,447,447	Construction Bids and Design Fees	
	7	ITS Improvements	N/A	N/A	Signal Coordination/Timing	N/A	2	\$43,163	\$86,326		\$86,326				100%			\$86,326	PCDOT	
	8	Houghton Road	I-10	Andrada Polytech	Widening	4	2.9				\$30,004,000		6,607	20,048	33%	\$24,003,200	\$6,000,800	\$13,911,177	Pima County	
Southeast Service Area Total											\$60,090,326	\$0			N/A	\$48,003,200	\$12,000,800	\$27,294,349		
NORTH	9	Silverbell Road	Sunset Road	Sunset Dunes Place	Widening	3	2.0	\$1,916,864	\$11,501,183	\$6,153,133	\$18,000,000		2,379	4,819	49%	\$14,400,000	\$3,600,000	\$6,400,000	Outstanding RTA Contribution	County contribution is \$6.4M
	10	Orange Grove Road	La Cienega Drive	Oracle Rd	Widening	4	0.9	\$1,916,864	\$6,900,710	\$3,691,880	\$11,000,000		8,689	20,048	43%	\$8,800,000	\$2,200,000	\$6,014,092	PCDOT with RSC non-construction	
	11	Sunset Road	I-10	River Road	New Construction	3	0.3				\$11,381,500		10,781	15,479	70%	\$9,105,200	\$2,276,300	\$2,350,000	Outstanding RTA Contribution	County contribution is \$2.35M, estimated cost is from RTA
	12	Linda Vista Road - 3 Locations	Hartman Road	Camino de Oeste	Turn Lanes	N/A	3	\$300,000	\$900,000		\$900,000				100%			\$900,000	PCDOT	
	13	ITS Improvements	N/A	N/A	Signal Coordination/Timing	N/A	38	\$43,163	\$1,640,194		\$1,640,194				100%			\$1,640,194	PCDOT	
	14	Wetmore Road/Ruthrauff Road	La Cholla Boulevard	Fairview Ave	Legacy Improvement	4	1.8					\$7,600,000	4,845	19,094	25%			\$610,922	PCDOT Debt Service	IF Balance for North SA
North Service Area Total											\$42,921,694	\$7,600,000			N/A	\$32,305,200	\$8,076,300	\$17,915,207		

Service Area	Project No.	Project	Limits	Project Description	# of Lanes	Length Units	Construction Cost		Non-Construction Costs	Total Capacity Cost - New /Improvements	Legacy Cost	Volume from Development	Added Capacity	% Used by Development	Cost of Vehicular Improv (40%)	Cost of Ped/Bike Improv (20%)	Cost Attributable to Development	Source	Notes	
NORTHEAST	15	1st Avenue	Orange Grove Road	Ina Road	Widening	4	1.0			\$6,556,000		1,106	20,048	6%	\$5,244,800	\$1,311,200	\$700,000	Outstanding RTA Contribution	County contribution is \$700K	
	16	Houghton Road	Speedway Boulevard	Drachman Street	Widening	4	0.3			\$9,000,000		2,614	20,048	13%	\$7,200,000	\$1,800,000	\$2,738,953	Outstanding RTA Contribution	County total remaining contribution for Houghton Road (Tanque Verde to 1.1 mi to 433-784 - this project is	
	17	Houghton Road/Catalina	N/A	N/A	Intersection Improvements	N/A	1	\$2,000,000	\$2,000,000	\$2,000,000				100%			\$2,000,000	PCDOT		
	18	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	26	\$43,163	\$1,122,238		\$1,122,238				100%			\$1,122,238	PCDOT	
	19	Craycroft Road	River Road	Sunrise Drive	Legacy Improvement	4	2.4					\$13,307,000	5,265	23,076	23%			\$2,558,401	PCDOT Debt Service	IF Balance for Northeast SA
	Northeast Service Area Total										\$18,678,238	\$13,307,000			N/A	\$12,444,800	\$3,111,200	\$9,119,592		
NORTHWEST	20	Sandario Road/Picture Rocks Road	N/A	N/A	Intersection Improvements	N/A	1	\$2,000,000	\$2,000,000	\$2,000,000				100%			\$2,000,000	PCDOT		
	21	Twin Peaks Road	Twin Peaks Road	Saguero Highlands	Widening	4	0.55	\$1,916,864	\$4,217,100	\$2,256,149	\$7,000,000	8,811	24,867	35%	\$5,600,000	\$1,400,000	\$1,886,230	PCDOT	County portion is 0.35 miles of total segment; pay available \$ from SA (IF Balance)	
SOUTH	North Service Area Total										\$9,000,000	\$0			N/A	\$5,600,000	\$1,400,000	\$3,886,230		
	22	I-19 East Frontage Road	Canas Road	Continental Road	Legacy Improvement	2	4.6				\$3,650,000	1,675	3,983	42%			\$948,661	PCDOT Debt Service	Remaining Debt Service - Capped at IF balance for South SA.	
	23	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	8	\$43,163	\$345,304		\$345,304			100%			\$345,304	PCDOT		
	24	Andrade Road	West Access for Hook M	1 mile west of Houghton Road	New Construction	2	1.3	\$1,916,864	\$4,983,846	\$2,666,357	\$8,000,000	7,994	17,563	46%	\$6,400,000	\$1,600,000	\$4,513,062	PCDOT with RSC non-construction factors		
WEST	South Service Area Total										\$8,345,304	\$3,650,000			N/A	\$6,400,000	\$1,600,000	\$5,807,027		
	25	ITS Improvements	N/A	N/A	Signal Coordination/ Timing	N/A	10	\$43,163	\$431,630		\$431,630			100%			\$431,630	PCDOT		
	26	Valencia Road	Mission Road	1/4 mi W of Cardinal Ave	Widening	6	1.0	\$1,916,864	\$11,501,183	\$6,153,133	\$18,000,000	19,024	18,995	100%	\$14,400,000	\$3,600,000	\$18,000,000	PCDOT with RSC non-construction factors		
	27	Camino Verde/Valencia Road	N/A	N/A	Intersection Improvements	N/A	1	\$500,000	\$500,000		\$500,000			100%			\$500,000	PCDOT		
	28	Irvington Road	Sunset Boulevard	Ajo Way	New Construction	2	0.85	\$1,916,864	\$3,258,668	\$2,232,188	\$6,000,000	14,179	17,563	81%	\$4,800,000	\$1,200,000	\$5,075,115	PCDOT with RSC non-construction		
	29	Valencia Road	Camino de la Tierra	Mark Road	Legacy Improvement	5	2.0					\$5,800,000	12,504	9,783	100%			\$745,974	PCDOT Debt Service	IF Balance for West SA
West Service Area Total										\$24,931,630	\$5,800,000			N/A	\$19,200,000	\$4,800,000	\$24,752,719			
Legacy							Legacy Subtotal			\$30,357,000				Legacy				\$4,863,958		
New/Improvement							New/ Improvement Subtotal			\$183,135,985				New/ Improvement				\$96,079,959		
TOTAL COST FOR PROJECTS IN IIP							TOTAL (ALL FACILITIES)			\$213,492,985				TOTAL ATT. TO DEVELOPMENT				\$100,943,917		