

Southern Pinal County Regional Corridors Study

EXECUTIVE SUMMARY

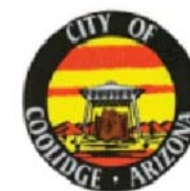
July 2015

Prepared for:



P I N A L ♦ C O U N T Y

In Coordination with:



Prepared by:

**PARSONS
BRINCKERHOFF**



Southern Pinal County Regional Corridors Study

This study has been prepared by Parsons Brinckerhoff, with market analysis support by RCLCO, for Pinal County as part of the Arizona Department of Transportation Planning Assistance for Rural Areas (PARA) Program.

Pinal County
Public Works Department
31 N Pinal Street
Building F
PO Box 727
Florence, Arizona 85132

Project Manager
Travis Ashbaugh
travis.ashbaugh@pinalcountyz.gov

Arizona Department of Transportation
Multimodal Planning Division
206 S 17th Avenue
Phoenix, Arizona 85007

Project Manager
Charla Glendening
cglendening@azdot.gov

Parsons Brinckerhoff
350 W Washington Street
Suite 300
Tempe, Arizona 85201

Project Manager
Jennifer Love, PE, AICP
love@pbworld.com

Disclaimer

The content of this document is furnished for informational use only, is subject to change without notice, and should not be construed as a commitment by Parsons Brinckerhoff, Inc. or RCLCO. Every effort has been made to ensure that the information contained herein is correct. Parsons Brinckerhoff, Inc. and RCLCO assume no responsibility or liability for any errors or inaccuracies that may appear in this document.

The suggestions and recommendations made in this document are for the purposes of discussion and debate in regard to regional transportation needs. Some of the ideas contained herein have regard to public and private lands. These ideas have been developed as a professional service without the full consultation of property owners.

INTRODUCTION

Pinal County and the Arizona Department of Transportation (ADOT) jointly conducted the *Southern Pinal County Regional Corridors Study*, in coordination with Eloy, Marana, and Coolidge, to address Southern Pinal County's existing and future multimodal travel demand, identify market opportunities, evaluate priority investment areas, and identify improvements to the regional transportation system. This study was conducted through ADOT's Planning Assistance for Rural Areas (PARA) program.

STUDY PROCESS

This study was conducted between January 2014 and June 2015 with guidance and oversight from the Technical Working Group (TWG), which was composed of members representing the following agencies:

- Pinal County
- City of Eloy
- Town of Marana
- City of Coolidge
- Arizona State Land
- Union Pacific Railroad
- ADOT
- Sun Corridor Metropolitan Planning Organization

Through the course of the study, the following working papers were developed in cooperation with the TWG and stakeholders:

- Working Paper #1: Summary of Plans and Opportunities
- Working Paper #2: Market Understanding
- Working Paper #3: Scenario Development
- Working Paper #4: Strategic Transportation Investments
- Working Paper #5: Policy Opportunities & Recommendations to Implement Strategic Transportation Investments

The final report is comprised of the input provided into the entire project process and is a compilation of the findings and recommendations from these working papers.

STUDY AREA AND REGIONAL CONTEXT

The *Southern Pinal County Regional Corridors Study* area is situated in the southern portion of Pinal County. The study area includes the City of Eloy, The Town of Marana, a segment along State Route (SR) 87 annexed by the City of Coolidge, unincorporated areas of southern Pinal County and northern Pima County, and portions of the City of Casa Grande. The study area is bounded by Avra Valley Road on the south, Selma Highway on the north, SR 79 on the east, and Trekell Road on the west.

The study area, depicted in Figure 1, spans approximately 1,300 square miles. The area is so vast that it exceeds the size of the urbanized area of the Phoenix-Mesa Metropolitan Statistical area. In a similar comparison, the study area is nearly three times larger than the urbanized area of the Tucson Metropolitan area. Interstate 10 (I-10) and SR 87 are the primary regional connections into and through the study area.

Figure 1: Study Area



SOCIOECONOMIC CONDITIONS

Socioeconomic conditions for the study area were first evaluated by analyzing population and employment data from the Central Arizona Governments (CAG) and Pima Association of Governments (PAG) Focus Area Models, within the Pinal County and Pima County areas, respectively. Future estimates are based on projections for the year 2040.

Population

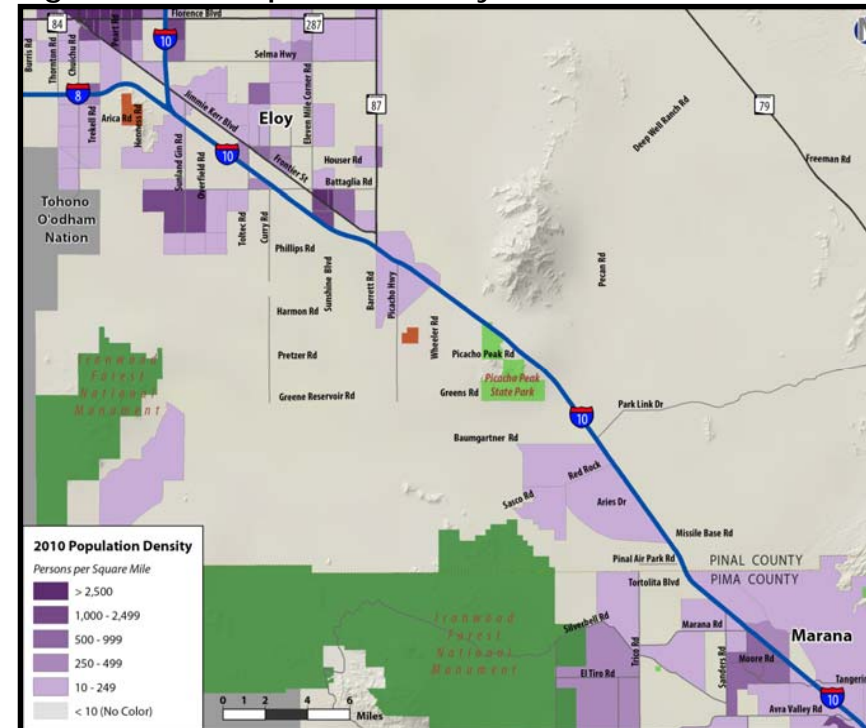
Figure 2 shows that the vast study area exhibits few existing population centers. Primarily, the centers exist within the incorporated limits of the cities. Existing densities for the predominant land area is undeveloped or agricultural and has less than 250 people per square mile. The more densely populated centers of Eloy and Marana have higher concentrations of residents adjacent to I-10. In 2010, there were 48,100 residents and 17,300 household within the study area.

The CAG and PAG Focus Area Models predicts that the 2040 population will experience growth within the current population centers. As shown in Figure 3, agricultural and undeveloped lands continue to have less than 250 residents per square mile. Eloy and Marana continue to experience further growth in existing areas of development, with higher residential populations along I-10, especially north of Marana Road. A total of 160,600 residents and 58,200 housing units are predicted by 2040 within the study area.

Employment

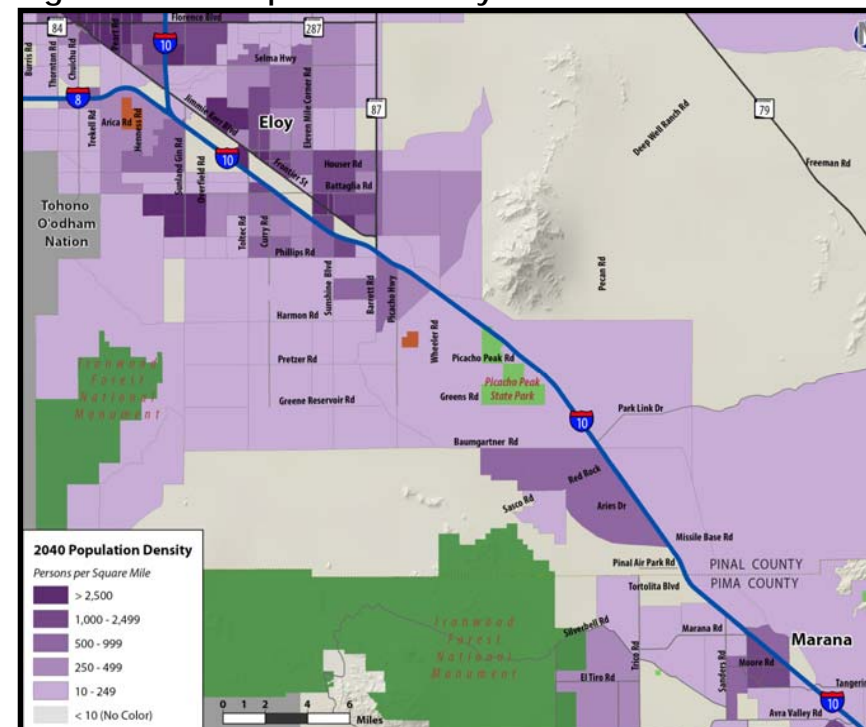
Figure 4 exhibits a jobs-to-housing imbalance, suggesting that employment opportunities for residents exist outside the study area. This means the number of residents exceeds employment opportunities and many residents are leaving the study area for jobs elsewhere, thus placing a burden on the transportation system. Within the study area, in 2010, there was a ratio of 19 jobs per 100 residents, or 53 jobs per 100 households. A total of 160,600 residents and 58,200 housing units are predicted by 2040, as depicted in Figure 5. In 2040, there is anticipated to be a ratio of 28 jobs per 100 residents, or 77 jobs per 100 households. The majority of residents in the study area travel outside of the area for work. Without the growth of an employment base, future residents will continue to rely on jobs outside the study area.

Figure 2: 2010 Population Density



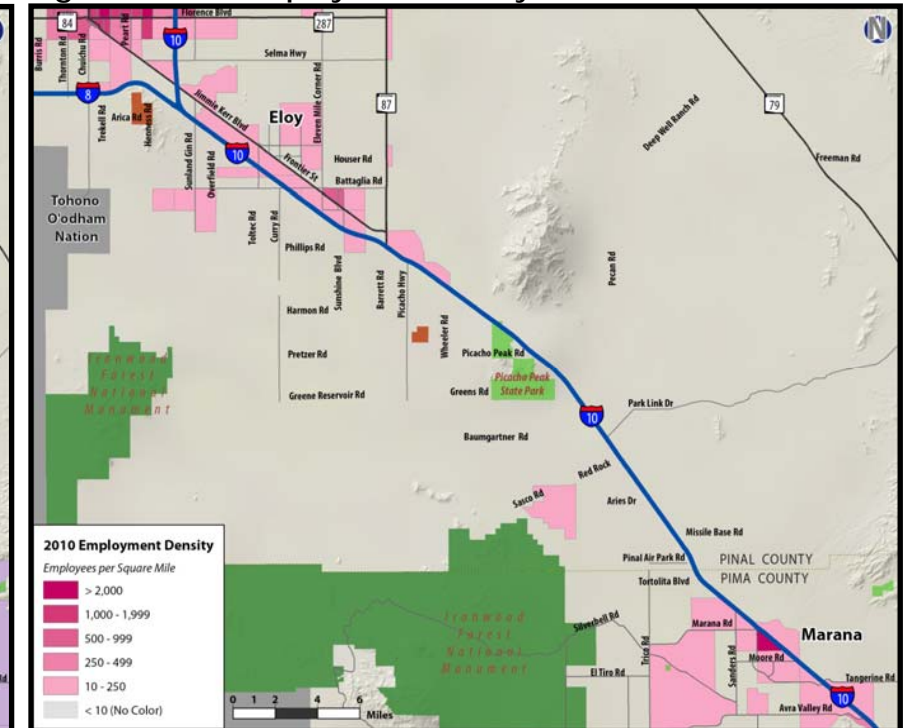
Source: CAG and PAG Focus Area Models (2014)

Figure 3: 2040 Population Density



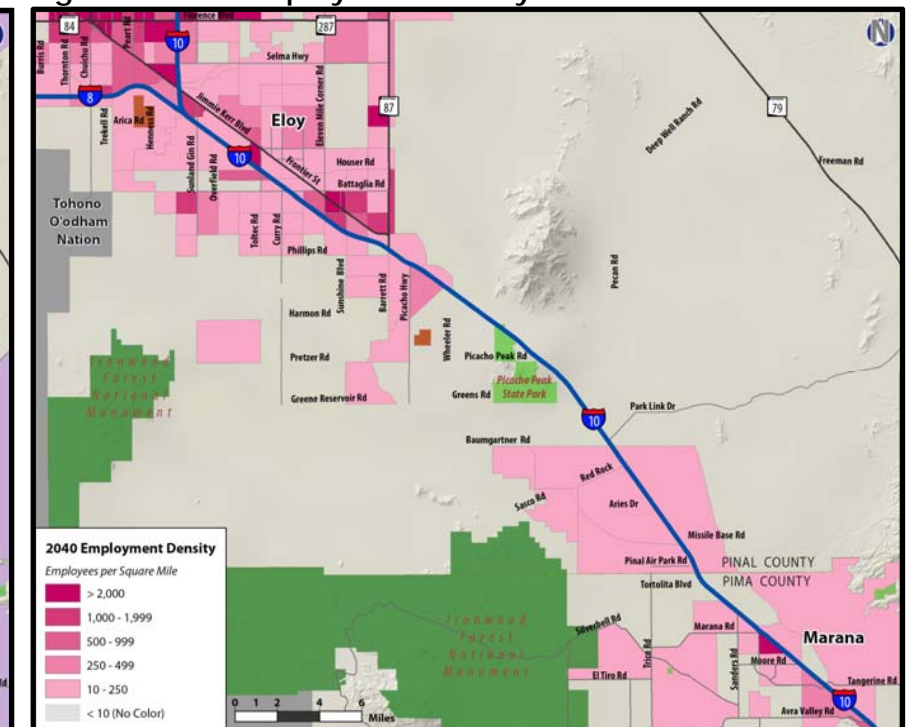
Source: CAG and PAG Focus Area Models (2014)

Figure 4: 2010 Employment Density



Source: CAG and PAG Focus Area Models (2014)

Figure 5: 2040 Employment Density



Source: CAG and PAG Focus Area Models (2014)

Future Land Use

Three tiers of mixed-use activity centers are identified in the *Pinal County Comprehensive Plan*, ranging from low intensity activity centers that cover approximately 100 acres to high intensity activity centers that are approximately 1,000 acres with a mix of professional office, business parks and industrial uses. Eight activity centers are envisioned within the study area. Significant infrastructure needs will constrain development of these centers in a cohesive manner consistent with plan goals.

Market momentum will continue to show preference for the industrial areas with existing transportation access. Transportation networks in Pinal County will need to promote land division, diverse routing options, and successional planning strategies to address long-term market preferences and development cycles. As the region grows, it is important to encourage the location of job growth with residential growth, which will reduce long distance travel for job access and increase economic development.

Future land use projections made by the CAG and PAG models reflect existing planning documents, indicating a predominantly urbanized study area with selected locations preserved for future parks and dedicated open space. Figure 6 shows the study area’s land use at build-out, as reflected in the *Pinal County Comprehensive Plan*, when existing agriculture and undeveloped land is replaced by residential uses.

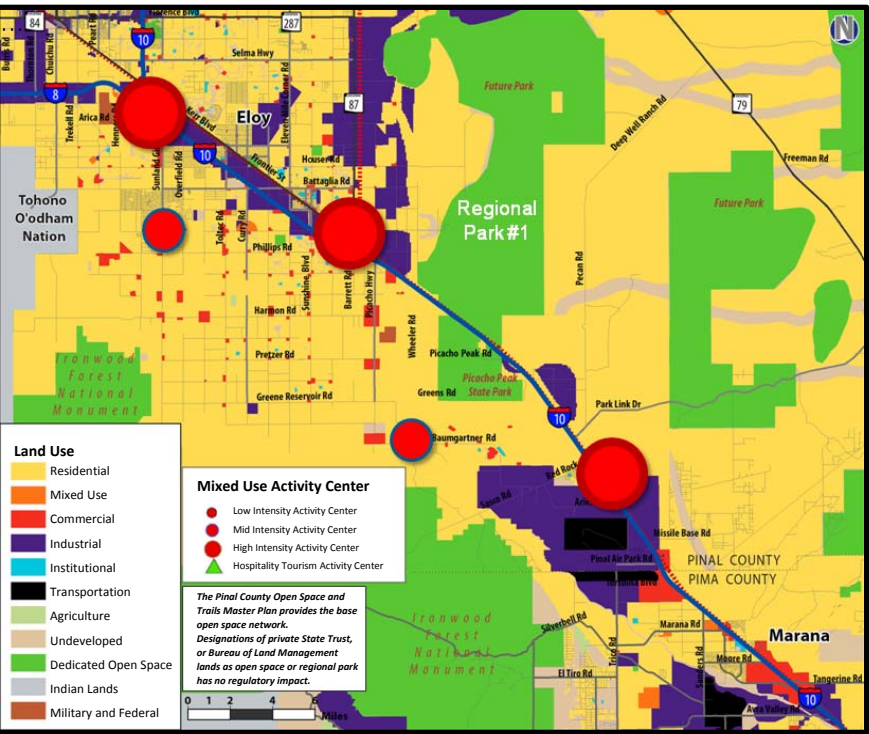
Near-Term Land Use and Development Plans

Near-term development, anticipated to start within the next 10 years, and recent development, started within the past 10 years, can be seen in Figure 7 and summarized in Table 1. Entitlements and recently completed developments provide insight into the location and character of anticipated development, requisite regional approvals, and potential future for the study area.

Information, provided by CAG, for the Eloy and Pinal County areas consists of a 2012 survey of developers intended to gauge timing and development intentions. The total number of units contained within the approved development does not distinguish between the constructed number of units and future development. In Marana, the town tracks entitlements with additional detail to estimate the constructed number of units within each anticipated development.

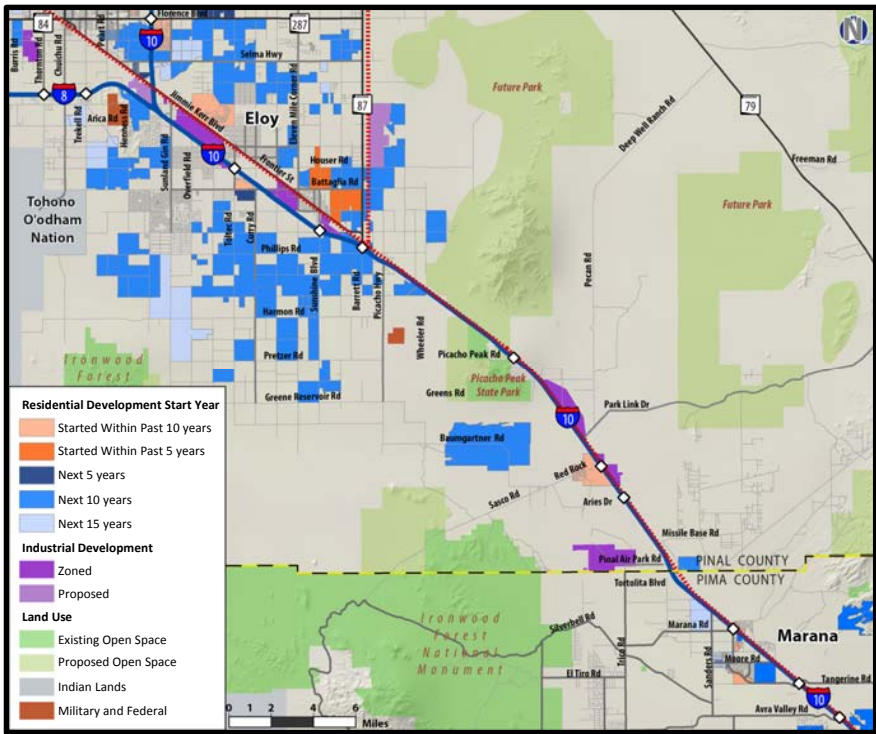
The overall trend remains a challenge for all areas of the study area. With a lack of job centers and employment opportunities to accompany residential development, residents are driving long distances to access jobs.

Figure 6: Build-out Land Use



Source: CAG, PAG, Town of Marana General Plan (2010)

Figure 7: Residential Development Start Year



Source: Pinal County: CAG Residential Development Database, 2012; Town of Marana, 2014

Table 1: Residential Development Trends

	Started – Past 10 Years			Anticipated To Start – Next 10 Years*		
	Number	Acres	Built Units	Number	Acres	Anticipated Units**
Casa Grande	27	3,930	5,620	54	14,870	45,050
Coolidge	14	2,810	1,340	13	7,250	25,360
Eloy	5	3,700	670	48	36,730	134,510
Marana	8	1,445	6,176	21	6,031	15,244
Unincorporated	8	2,490	690	15	8,780	28,330
Study Area	62	14,370	14,500	151	73,650	248,500

* Based on CAG’s 2012 Developer Survey on when a particular development would start and does not suggest all units will be completed within 10 year period and will be dependent as demand is needed which may take several years for completion.
** Total number of units entitled within the development plans and does not suggest all units will be completed as construction will be dependent as demand is needed which may take several years for completion.

Land Management

Land management within the study area can be understood in three relatively evenly distributed types. These areas are summarized in Table 2 and shown in Figure 8 and Figure 9.

Table 2: Land Management within Study Area

	Square Miles	%
Incorporated and Unincorporated Areas	460	34.7%
Eloy incorporated area	113	8.5%
Marana incorporated area	96	7.3%
Casa Grande incorporated area	12	0.9%
Coolidge incorporated area	7	0.5%
Arizona City (unincorporated)	11	0.8%
Private lands (unincorporated)	221	16.7%
State Trust Lands	435	32.9%
State trust lands	435	32.9%
Federal Lands and Open Space	429	32.4%
Federal open space	170	12.8%
Tribal land	13	1.0%
Park and wilderness area	9	0.7%
Federal land and military	30	2.3%
Future park and protected open space	207	15.6%
Total	1,324	100%

Figure 8: Land Management

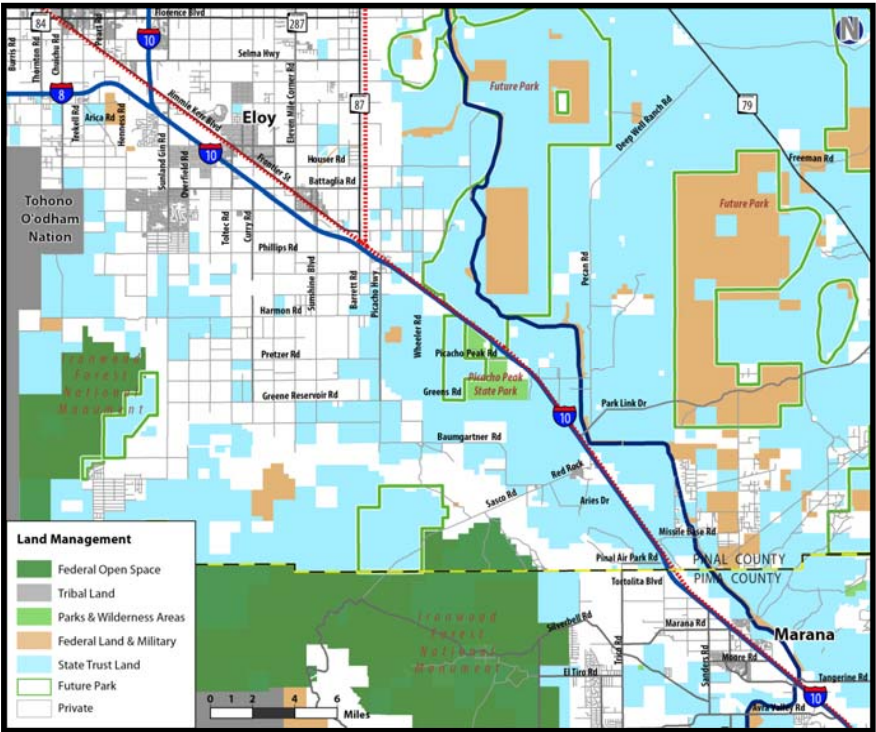
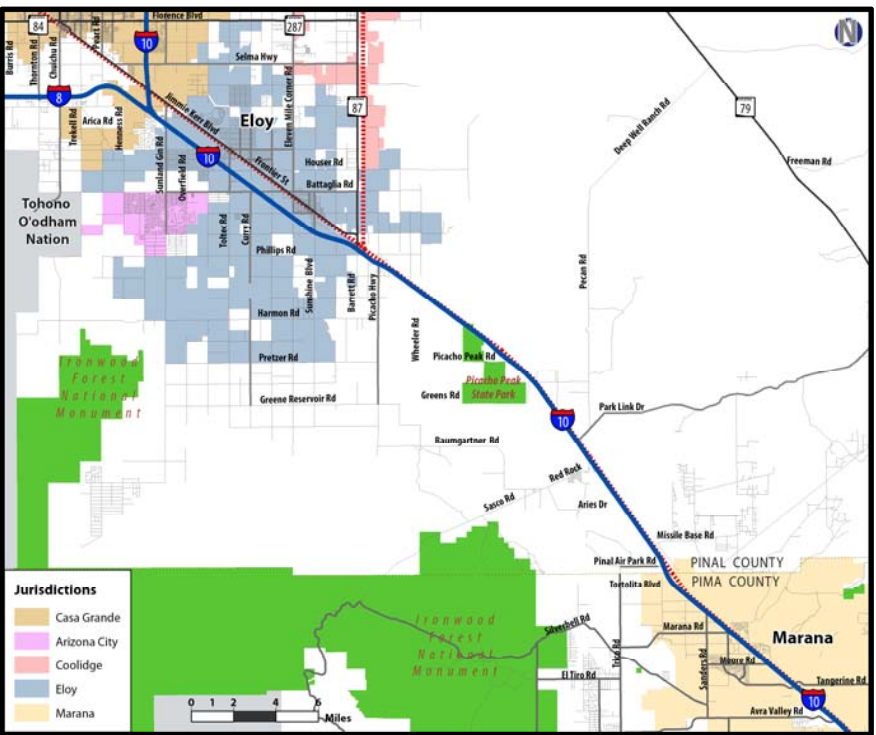


Figure 9: Jurisdictions and Census Designated Places



OPEN SPACE

There is approximately 386 identified acres of open space (29.1%) within the study area. How that open space develops will be critical to planning the regional and local road network, effective access management, drainage, and overall character of the area. The benefits of open space can be leveraged to create community value through preservation, access, and character within the community. Open space can then lead to increased economic value by increasing development premiums through visual and physical access to improve open space.

Drainage and Flood Plains

Figure 10 shows the existing drainage pattern in the study area and the presence of the 100-year floodplain identified by the Federal Emergency Management Agency (FEMA) along the east side of I-10 and south of the county line. The proximity of flood zones to major transportation facilities, such as I-10 and I-8, pose potential issues and limitations to development. Integrating these zones as an amenity within development or as public open space may form part of a mitigation strategy, promoting development adjacent to the existing urbanized and incorporated areas.

Figure 10: Drainage and Floodplains



Source: Pinal County: FEMA

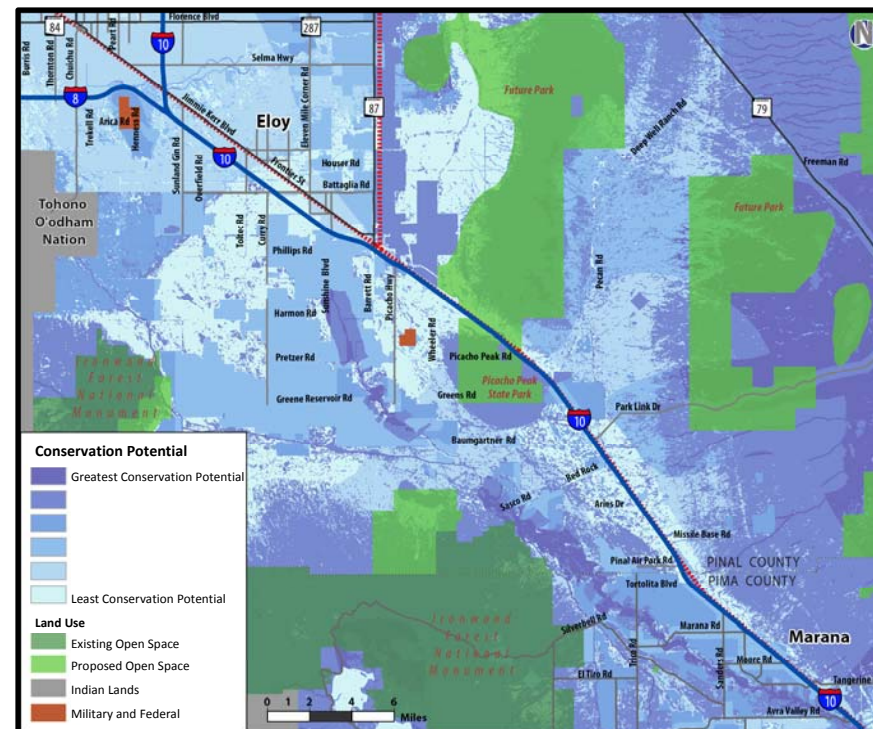
Conservation Potential

The conservation potential assessment was conducted based upon the Species and Habitat Conservation Guide (SHCG) tool published in 2011 by the Arizona Game and Fish Department. This SHCG tool provided a broad regional assessment of conservation potential in the study area, as shown in Figure 11. Areas of high conservation potential should be closely examined prior to potential development. It is important to preserve sensitive wildlife and conservation areas as well as maintain wildlife corridors.

Recreation, Parks and Trails

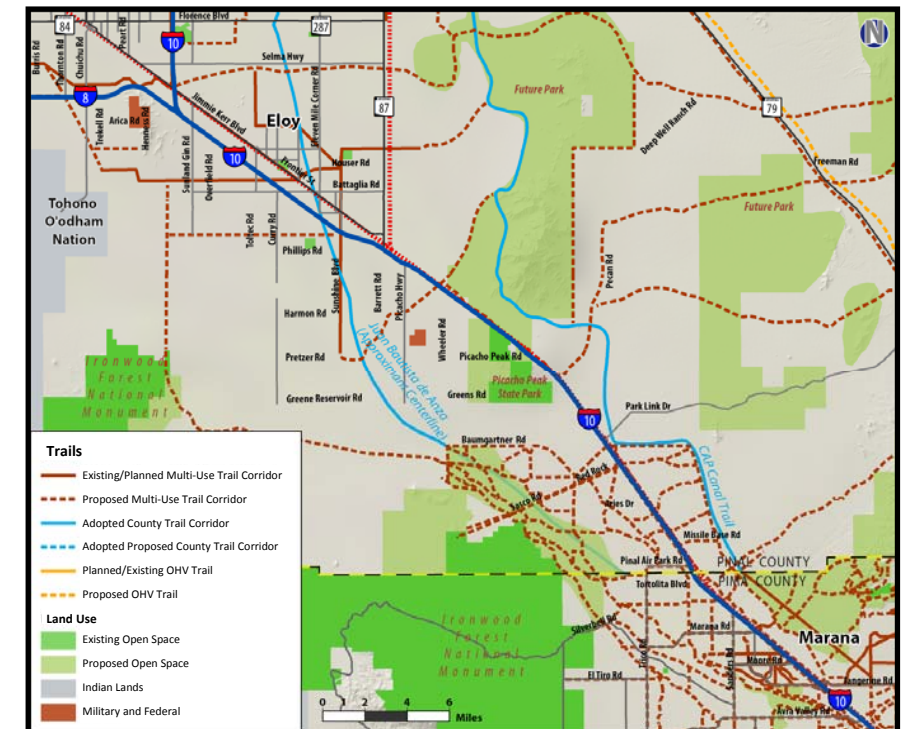
The *Pinal County Open Space and Trails Master Plan* (2007) and the *Town of Marana Parks, Recreation, Trails, and Open Space Master Plan* (2010) provide the base open space and trail network shown in Figure 12. Utilizing the areas of high conservation potential in concert with the need for recreation areas and parklands, the region can take advantage of designated open space/parks and treat them as assets.

Figure 11: Habi-Map



Source: Species and Habitat Conservation Guide (SHCG) tool (2011), Arizona Game and Fish Department

Figure 12: Recreation, Parks, and Trails



Source: Pinal County Open Space and Trails Master Plan

TRANSPORTATION NETWORK

Currently, the transportation network within the study area, is centered in and around Casa Grande, Eloy, and Marana. It is important to build upon the existing transportation network to maximize value capture from existing funding that is available. As the region grows, resolving facility gaps or inconsistencies within the current transportation network will ultimately enhance circulation options, while increase opportunities for more desirable development. Also, it is important to have complementary facilities to support long-distance trips. An improved, more robust transportation network will improve market potential by improving access, mobility, and circulation for people and goods.

Existing Roadway Network

The existing roadway network, depicted in Figure 13, is comprised of two interstates, four state highways, major roads, and local roads. There are a total of 13 interchanges located along I-10 and two along I-8. Within the study area, I-10 is used for long distance travel, with state routes serving as major arterials. Minor arterials and collectors provide local circulation.

Figure 13: Existing Number of Lanes



Source: CAG and PAG Focus Area Models (2014)

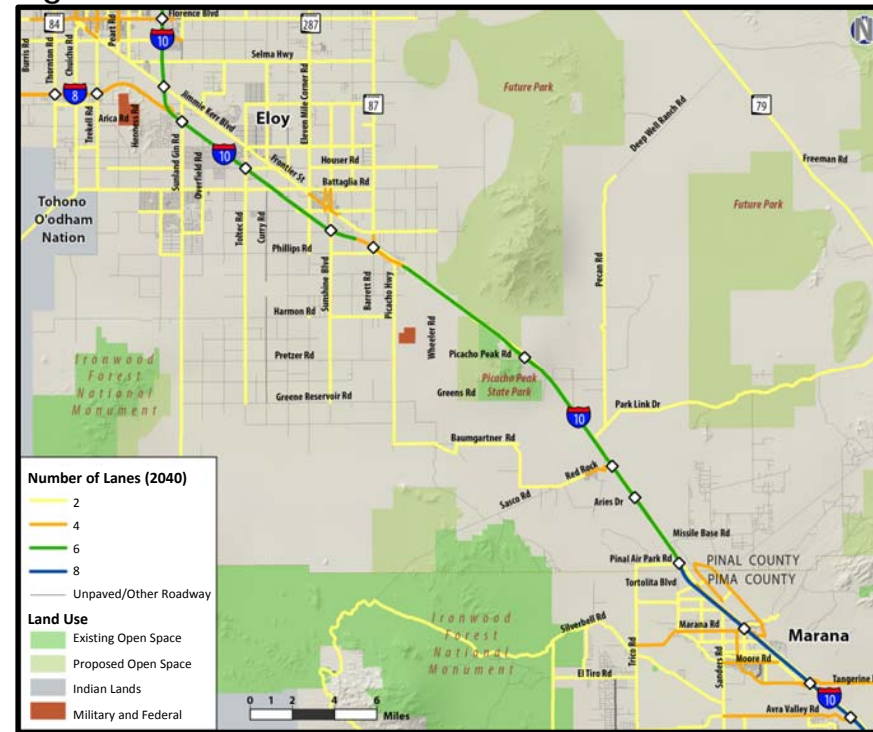
Future Roadway Network

The facility type projected for the 2040 network, as reflected in the CAG and PAG Focus Area Models, is depicted in Figure 14. In the future, I-10, SR 87, and SR 287 (just outside the study area) continue to be the primary major facilities. The future transportation network, shown in Figure 15 is based on data gleaned from previous and ongoing studies.

Freight

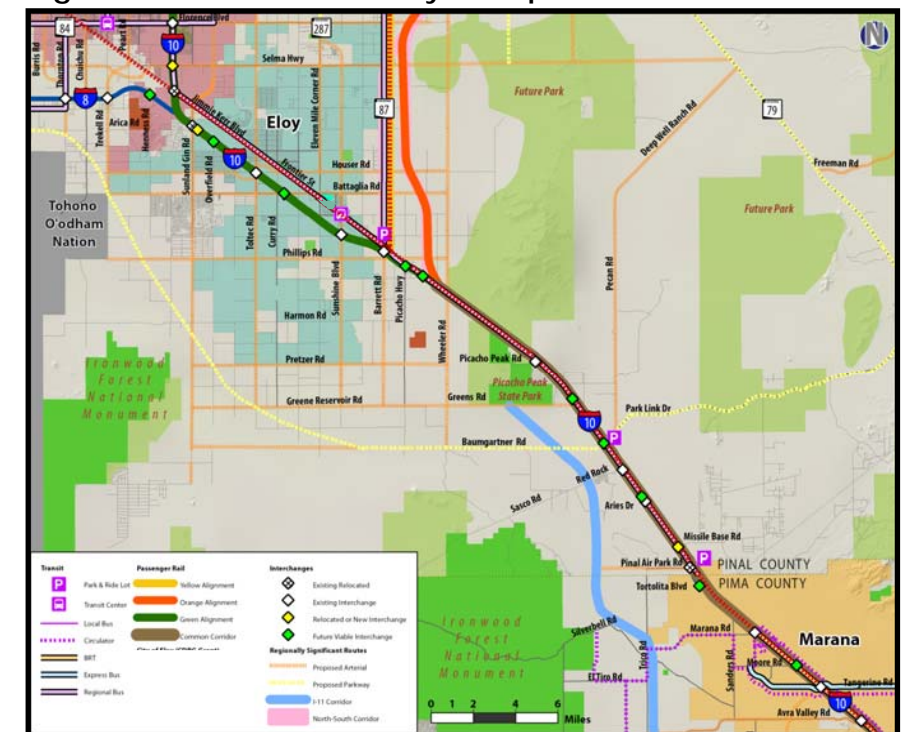
A strong freight network is crucial to attracting and retaining businesses and jobs. How the network performs will ultimately shape the logistics performance that Arizona businesses will use to compete with other regions, states, and countries. The two pillars of competitive performance are having fast, reliable, productive freight service and freight service end-to-end. Therefore the regional roadway network connecting businesses and the network serving industrial parks and commercial zones are equally important, when compared with the interstates, when looking at competitive freight performance.

Figure 14: Future Number of Lanes



Source: CAG and PAG Focus Area Models (2014)

Figure 15: Planned Roadway/Transportation Network



Source: Pinal County RSRM Study (2008), PAG 2040 RTP (2010). Pinal County Transit Feasibility Study (2011), PAG RSC Study (2014), Passenger Rail Corridor Study, I-11 Intermountain West Study, North-South Corridor Study

PLANNING FOCUS AREAS

The Focus Area boundaries displayed in Figure 16 reflect six geographical study areas that define potential market demand along the corridors and is the foundation for the recommendations.

Focus Area One: I-10

Focus Area One represents the lands along the I-10 corridor that connect Eloy and Marana and is presently the most traveled connection between Phoenix and Tucson. Large amounts of industrial-related development are anticipated to occur along the corridor over the next 5 to 15 years.

Focus Area Two: Eloy

Focus Area Two is bounded on three sides by major regional transportation facilities. The existing built area of the City of Eloy is well connected to trading partners at all levels.

Focus Area Three: Red Rock

Focus Area Three centers on the area of Red Rock. The potential Union Pacific Classification Yard adjacent to I-10 provides a unique opportunity for industrial development that would need to utilize rail, for uses such as distribution and delivery.

Focus Area Four: Pinal Airpark

Focus Area Four centers on Pinal Airpark and have available undeveloped and underutilized lands surrounding the facility. It's near a distributed transportation network as well as close to the growing skilled labor force in Marana and Tucson and could be developed into a viable regional employment center.

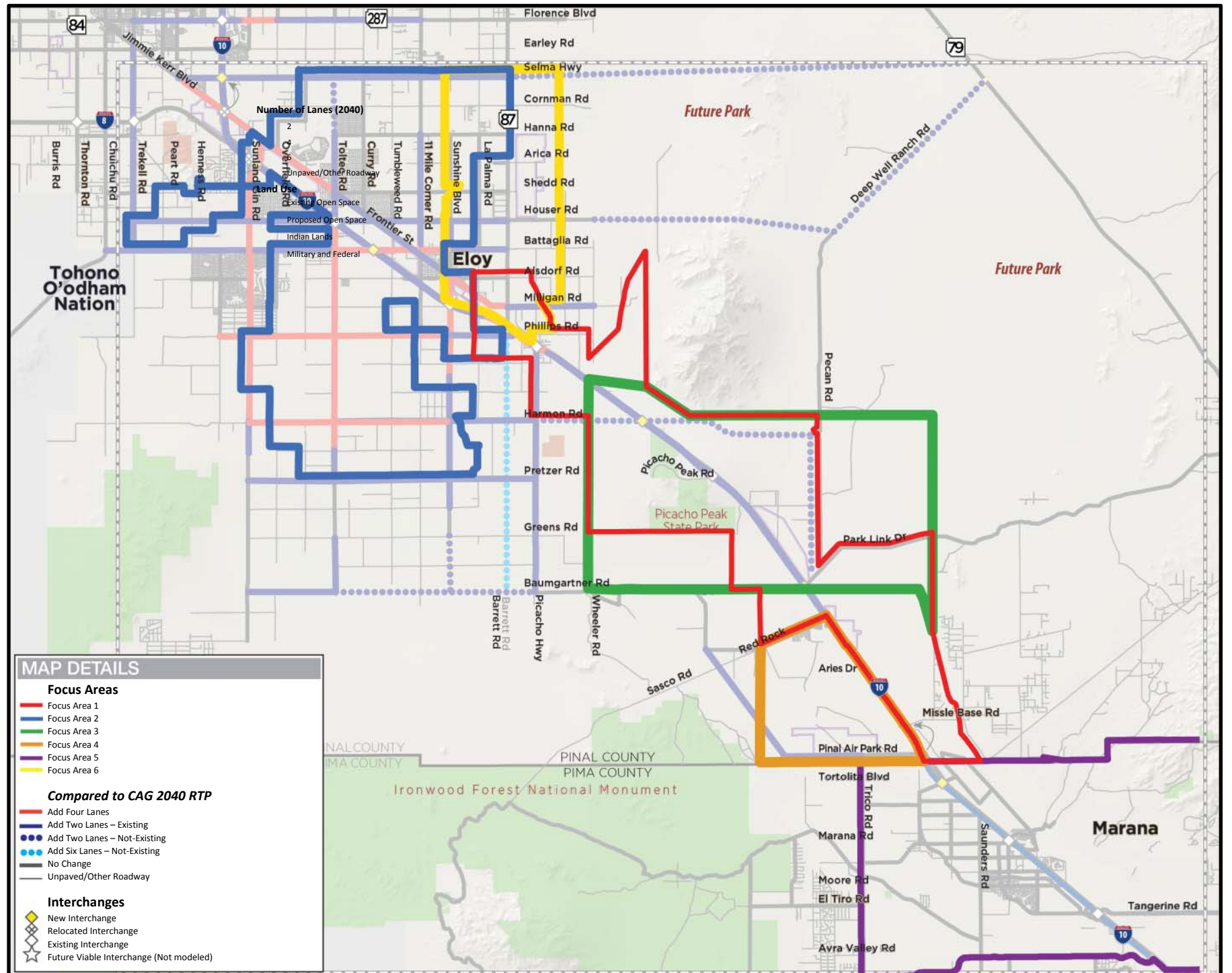
Focus Area Five: Marana

Focus Area Five consists of the Marana area. The south side of Pinal Airpark provides access to the labor force in Marana and requires a transportation network of routes that promote land subdivision and route redundancy.

Focus Area Six: SR 87

Focus Area Six is located at a strategic center comprised of the interstate highway system, a newly planned regional north-south roadway, a possible passenger rail corridor, and a large land owner interested in developing land into a multi-phased commercial and industrial employment and distribution center.

Figure 16: Focus Areas



MARKET UNDERSTANDING

Among the inputs to this strategic transportation effort was a forecast that looked at potential development opportunities that built on recent development patterns and institutional forecasts of population and employment. The conclusions were based on the analysis of the most currently understood information available. General demographic trends of Pinal County, such as population, households, and employment were compared with Maricopa and Pima Counties and was then followed by trends specifically within the six focus areas.

The analysis, however, does not take into account the potential impact of future economic shocks on the local economy, and does not necessarily account for the potential benefits from major “booms”. Given the fluid and dynamic nature of the economy and real estate markets, as well as the uncertainty surrounding the near-term future, it is critical to monitor the economy and markets continuously and to revisit the market analysis periodically when appropriate.

SCENARIO DEVELOPMENT

In summer 2014, the Central Arizona Governments (CAG) completed the development of a regional travel demand model as part of their Regional Transportation Plan (RTP). Because the CAG RTP was concurrent with this study, and overlapped the study area, it was determined that the RTP should be utilized as the baseline future scenario, referred to as Scenario A.

The CAG RTP utilized total population and employment estimates consistent with projections established by the Arizona State Demographer’s Office, working with official population estimates and projections for the State of Arizona. The CAG Population Technical Advisory Committee (POPTAC) working group, which includes the coordinating parties of this study, determined the sub-regional distribution of population and employment forecasts at the Traffic Analysis Zone (TAZ) level for the transportation planning process. The CAG 2040 condition, together with the PAG future condition, was considered as Scenario A.

Proposed Scenario

The Technical Working Group (TWG) for this PARA study acknowledged that the CAG RTP model and the conducted market analysis did not account for all the currently known planned development within the study area. Therefore, the TWG requested that this study develop a future socioeconomic scenario that would address the several entitled residential developments and eleven zoned or planned industrial developments within the study area. Scenario B was then developed as part of this study in order to capture these developments anticipated beyond that identified in Scenario A (CAG RTP). Working with the TWG, and the Pinal County Economic Development Department, this study created a future scenario that quantifies job, population, and household figures for the future condition when all currently identified developments are complete.

Due to Scenario B accounting for known opportunities in which developments may occur beyond the 2040 horizon year, population and employment thresholds were utilized, with direction by the TWG, for future needs and not linked to a specific design year. The population and the employment for Scenario B is identified in Figure 17 and Figure 18 respectively, and summarized in Table 3.

Figure 17: Scenario B Future Population

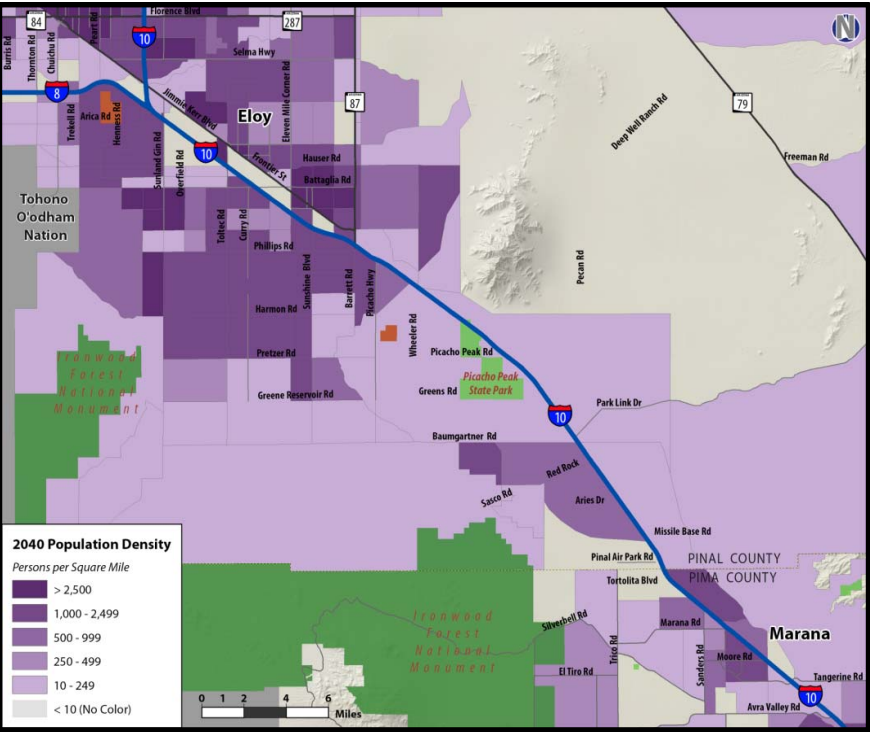


Figure 18: Scenario B Future Employment

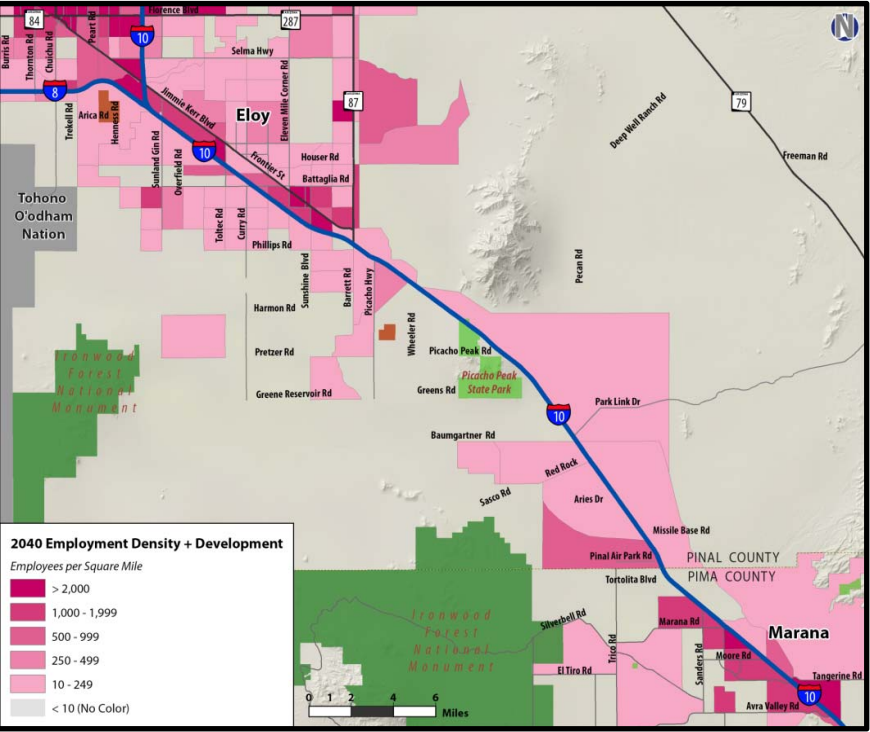


Table 3: Study Area Population and Employment, by Scenario

	Existing (2010)	Scenario A (CAG RTP 2040)	Scenario B (CAG RTP 2040 + Additional Development)
Population	45,000	161,000	674,000
Employment	8,000	45,000	110,000

STRATEGIC TRANSPORTATION INVESTMENTS

This study built upon the transportation needs identified in the CAG and PAG plans. The proposed socioeconomic scenario, Scenario B, identified planned development anticipated beyond that identified in the CAG and PAG RTPs.

This study utilized the ADOT Travel Demand Model (AZTDM) for analysis of transportation infrastructure needs. The first step in the transportation analysis process involved running AZTDM using the adopted CAG and PAG transportation network and the Scenario B population and employment. This provided an understanding of where infrastructure needs exist beyond those identified in the current CAG and PAG plans in order to accommodate future growth. The results of the initial capacity analysis of the CAG and PAG 2040 network are depicted in Figure 19, with the Scenario B socioeconomic conditions presented in Figure 20. This analysis indicates that there are significant capacity concerns with approximately 41 miles of arterial and 100 miles of collector roadways in this future condition and are anticipated to operate at a level of service (LOS) E (slow movement or frequent stoppages) or F (traffic jams or stoppages of long duration).

The study team proposed a range of transportation improvements to increase roadway capacity and create an improved and more robust circulation network. These improvements, depicted in Figure 21, create a long-term transportation network to support the planned residential and employment growth identified as part of Scenario B. The proposed grid framework is needed to support both transportation demand and access, and to create strategic redundancies in the roadway network. Routes shown with dashed lines in Figure 21 represent needed connections to facilitate regional circulation and connectivity. Future studies are recommended for these alignments, including detailed environmental and drainage analyses, to determine the specific alignment of these roadways.

The key recommended improvements include developing the major grid network to enhance access to I-10, access to planned residential and employment, and to facilitate overall circulation and build an appropriate level of redundancy into the network. The final recommended network is depicted in Figure 22, which presents the recommended number of lanes and I-10 interchanges needed to meet the anticipated transportation demand for the population and employment projected in Scenario B.

Figure 19: CAG RTP and Adopted PAG 2040 Network

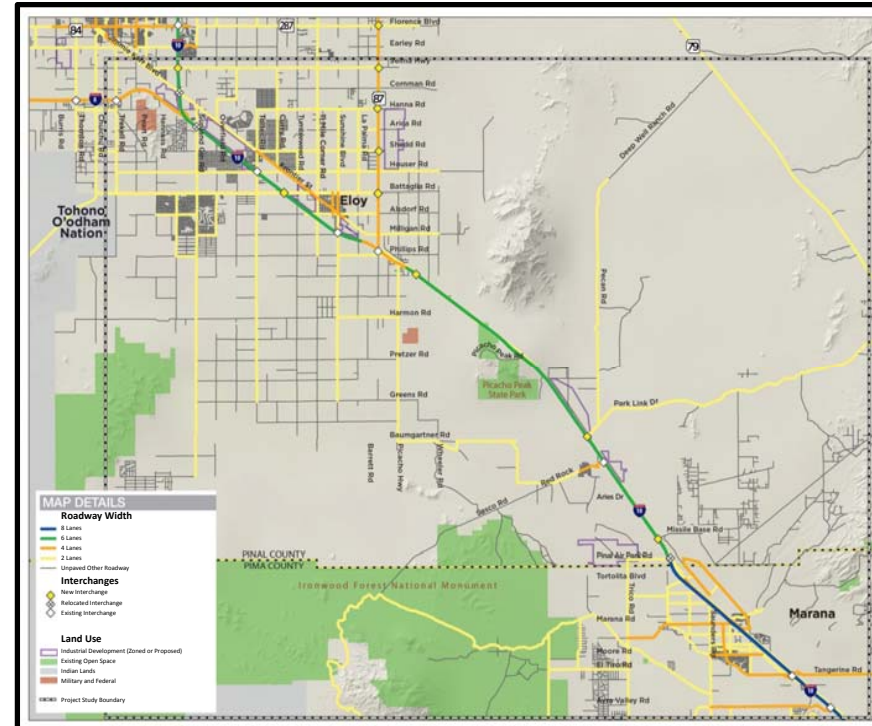


Figure 20: CAG RTP/Adopted PAG 2040 Level of Service

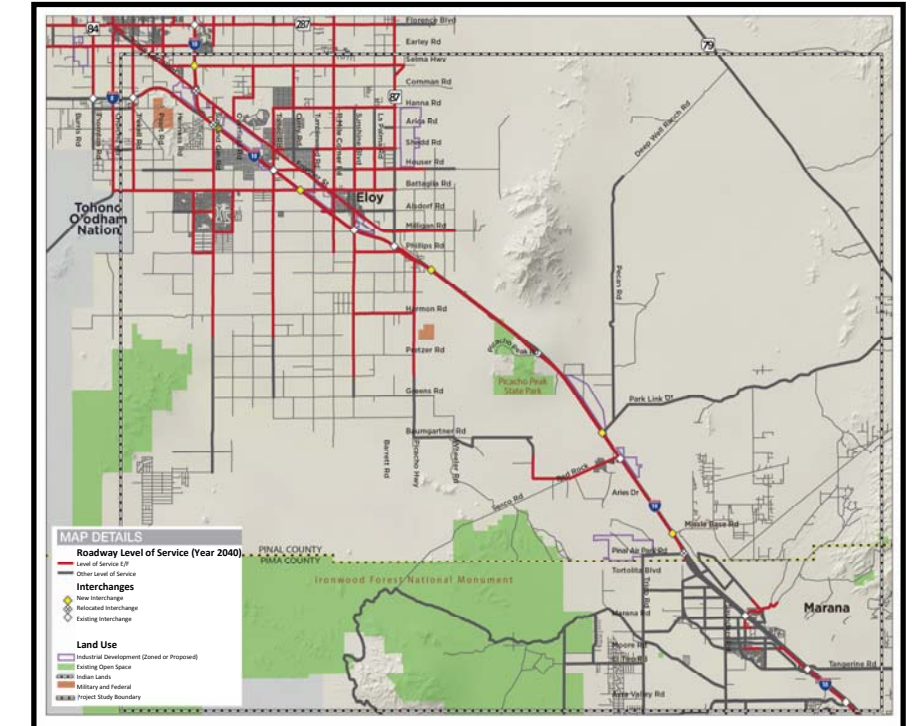


Figure 21: Proposed Scenario Roadway Changes

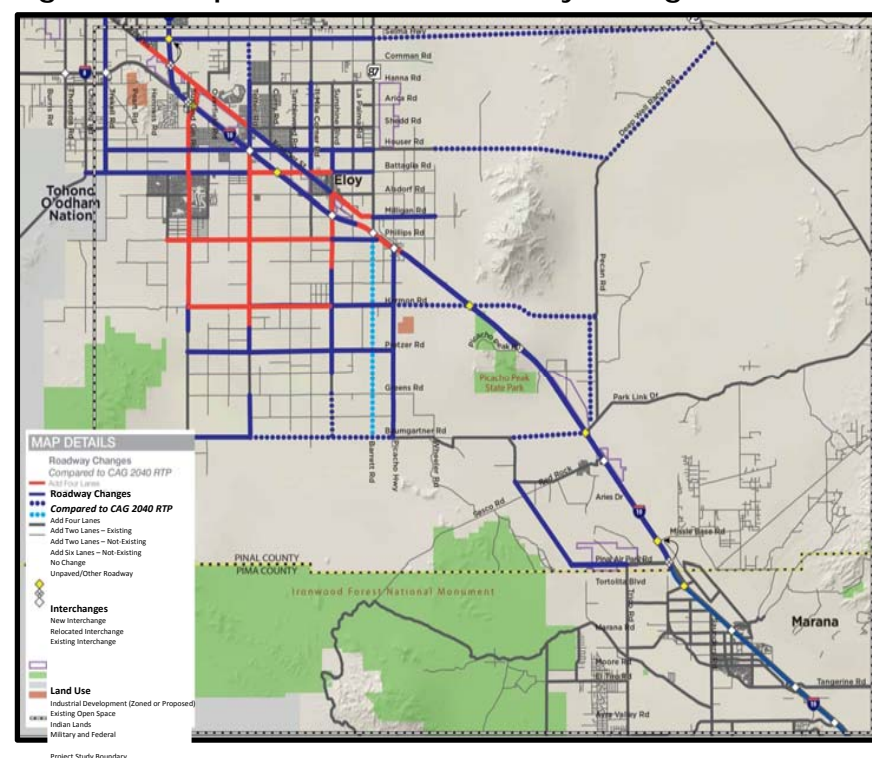


Figure 22: Proposed Scenario Network



EVALUATION

An evaluation process was utilized to aid in the documentation, discussion and assessment of the strategic transportation investments that considered the overall regional significance, demand, ranking, sequencing, magnitude of impacts and anticipated impacts to associated development. A planning level fatal flaw analysis was then conducted to understand any major, known issues that may hinder the development of the proposed transportation network. Input regarding values and important issues within the study area was provided by the Project Management Team, Technical Working Group, and stakeholders and was used to develop criteria appropriate for a planning level evaluation in this study. The evaluation was used to rank and prioritize the range of transportation improvements identified. The criteria applied in this assessment were grouped into the following categories: 1) Supports Growth and Economic Development, 2) Environment, 3) Mobility, and 4) Safety.

Within each category, specific criteria were identified that could be utilized to qualitatively assess each of the proposed roadway segments using previously documented information as well as the results of the travel demand modeling efforts. As the development of these transportation corridors advances, more detailed analysis will be required. The overall ranking of the recommended projects based on the planning level evaluation was utilized to determine project sequencing based on need and potential impacts.

RECOMMENDATIONS AND PROGRAMMING

The prioritization of projects was determined by how effectively they address near-term, mid-term, and long-term needs. Corridor preservation projects addressing regional circulation and connectivity needs beyond projected population and employment thresholds of Scenario B were also identified. These recognize needs beyond the currently understood future condition, identifying opportunities for right-of-way preservation and protection prior to future development approvals.

Using population and employment projections previously established, the population and employment presented in Table 4 approximate the thresholds where near-term, mid-term, and long-term transportation improvements would be needed.

Project Ranking and Programing

Planning level cost estimates detailed in Table 5, not including right-of-way costs, were provided for each of the projects ranked in the near-term, mid-term, and long-term categories. Table 6 details the total cost for the near-term, mid-term, and long-term program, Table 7 by jurisdiction, and are detailed in Table 8. A cost range is provided, indicating potential low and high costs, including assumptions for 20-year operations and maintenance (O&M) costs to reflect a reasonable lifecycle assessment. However, the project summary for corridor preservation projects does not include costs as further study is needed to better refine these corridors.

Table 4: Population and Employment Thresholds

	Near-Term	Mid-Term	Long-Term	Corridor Preservation
Approximate Population in Study Area	45,000 – 250,000	250,000 – 450,000	450,000 – 674,000	Greater than 674,000
Approximate Employment in Study Area	8,000 – 42,000	42,000 – 76,000	76,000 – 110,000	Greater than 110,000

Table 5: Estimated Unit Costs

Existing	Future	Rough Magnitude of Cost
# of Lanes	# of Lanes	Per Mile
Not Exist	2	\$10 – 12.5 Million
Not Exist	4	\$15 – 17.8 Million
2	4	\$4 – 6 Million
4	6	\$4 – 6 Million
2	6	\$8 – 9.5 Million
Not Exist	6	\$20 – 23 Million

Table 6: Cost by Programmed Timeframe

	Rough Magnitude of Cost (Millions)	
	Total Capital and 20-year O&M (Low)	Total Capital and 20-year O&M (High)
Total Near-Term	\$ 497.9	\$ 699.5
Total Mid-Term	\$ 591.8	\$ 809.9
Total Long-Term	\$ 419.0	\$ 513.3

Table 7: Cost by Programmed Jurisdiction and Timeframe

Jurisdiction / Program	Rough Magnitude of Cost (Millions)	
	Total Capital and 20-year O & M (Low)	Total Capital and 20-year O & M (High)
Pinal County Near-Term	\$ 147.5	\$ 207.3
Pinal County Mid-Term	\$ 251.9	\$ 337.0
Pinal County Long-Term	\$ 419.0	\$ 513.3
Pinal County Total	\$ 818.4	\$ 1057.8
Eloy Near-Term	\$ 309.8	\$ 431.3
Eloy Mid-Term	\$ 334.4	\$ 464.8
Eloy Total	\$ 644.2	\$ 896.1
Coolidge Near-Term	\$ 13.2	\$ 19.8
Coolidge Total	\$ 13.2	\$ 19.8
Casa Grande Near-Term	\$ 27.4	\$ 41.0
Casa Grande Mid-Term	\$ 5.5	\$ 7.9
Casa Grande Total	\$ 32.9	\$ 48.9

Table 8: Recommended Project List – (Alphabetized by Road per Programming Threshold)

ID #	Programming	Road	From	To	Existing # of Lanes	Future # of Lanes	Jurisdiction	Length (mile)	Per Mile (Low)	Per Mile (High)	Rough Magnitude of Cost (Millions)	
											Total Capital and 20-year O & M (Low)	Total Capital and 20-year O & M (High)
28	Near-Term	11 Mile Corner Rd	Hanna Rd	Frontier St	2	4	Eloy / Pinal County	4.1	\$ 4.0	\$ 6.0	\$ 18.0	\$ 27.1
1	Near-Term	Battaglia Dr (Phase I)	West of Toltec Rd	East of Sunshine Blvd	2	4	Eloy	4.3	\$ 4.0	\$ 6.0	\$ 18.9	\$ 28.4
29	Near-Term	Battaglia Dr	East of Sunshine Blvd	SR-87	2	4	Eloy / Pinal County	2.3	\$ 4.0	\$ 6.0	\$ 10.1	\$ 15.2
34	Near-Term	Houser Rd	Trekell Rd	SR-87	2	4	Eloy / Pinal County / Casa Grande	13.0	\$ 4.0	\$ 6.0	\$ 57.2	\$ 85.8
6	Near-Term	Milligan Rd / Frontier St (Phase I)	Toltec Rd	Pearl Rd	2	4	Eloy / Pinal County / Casa Grande	7.3	\$ 4.0	\$ 6.0	\$ 32.1	\$ 48.2
18	Near-Term	Milligan Rd / Frontier St (Phase I)	SR-87	Sunshine Blvd	2	4	Eloy / Pinal County	2.2	\$ 4.0	\$ 6.0	\$ 9.7	\$ 14.5
8	Near-Term	Phillips Rd (Phase I)	Lamb Rd	Sunshine Blvd	Not Exist	4	Eloy / Pinal County	8.0	\$ 15.0	\$ 17.8	\$ 132.0	\$ 156.2
10	Near-Term	Phillips Rd (Phase I)	Sunshine Blvd	I-10	2	4	Eloy / Pinal County	2.1	\$ 4.0	\$ 6.0	\$ 9.2	\$ 13.9
36	Near-Term	Selma Hwy	Jimmie Kerr Blvd	SR-87	2	4	Eloy / Pinal County / Casa Grande / Coolidge	11.5	\$ 4.0	\$ 6.0	\$ 50.6	\$ 75.9
3	Near-Term	Sunland Gin Rd (Phase I)	Frontier St	Battaglia Dr	2	4	Eloy / Pinal County	4.0	\$ 4.0	\$ 6.0	\$ 17.6	\$ 26.4
12	Near-Term	Sunland Gin Rd (Phase I)	Battaglia Dr	Harmon Rd	2	4	Eloy / Pinal County	6.0	\$ 4.0	\$ 6.0	\$ 26.4	\$ 39.6
14	Near-Term	Sunshine Blvd (Phase I)	Alsdorf Rd	South of Phillips Rd	2	4	Eloy	3.4	\$ 4.0	\$ 6.0	\$ 15.0	\$ 22.4
33	Near-Term	Toltec Rd	Hanna Rd	Houser Rd	2	4	Eloy	3.2	\$ 4.0	\$ 6.0	\$ 14.1	\$ 21.1
46	Near-Term	Toltec Rd	Hanna Rd	Selma Hwy	Not Exist	2	Eloy	2.0	\$ 10.0	\$ 12.5	\$ 22.0	\$ 27.5
16	Near-Term	Toltec Rd (Phase I)	Houser Rd	South of Harmon Rd	2	4	Eloy / Pinal County	7.8	\$ 4.0	\$ 6.0	\$ 34.1	\$ 51.2
27	Near-Term	Trekell Rd	Jimmie Kerr Blvd	Battaglia Dr	2	4	Eloy / Pinal County / Casa Grande	7.0	\$ 4.0	\$ 6.0	\$ 30.8	\$ 46.2
21	Mid-Term	Battaglia Dr	Trekell Rd	Toltec Rd	2	4	Pinal County / Eloy	7.0	\$ 4.0	\$ 6.0	\$ 30.8	\$ 46.2
2	Mid-Term	Battaglia Dr (Phase II)	West of Toltec Rd	East of Sunshine Blvd	4	6	Eloy	4.3	\$ 4.0	\$ 6.0	\$ 18.9	\$ 28.4
22	Mid-Term	Harmon Rd	Sunland Gin Rd	Sunshine Blvd	Not Exist	4	Eloy / Pinal County	6.0	\$ 15.0	\$ 17.8	\$ 99.0	\$ 117.2
23	Mid-Term	Harmon Rd	Sunshine Blvd	Picacho Hwy	2	4	Eloy / Pinal County	3.0	\$ 4.0	\$ 6.0	\$ 13.2	\$ 19.8
5	Mid-Term	Milligan Rd / Frontier St	Sunshine Blvd	Battaglia Dr	4	6	Eloy	1.7	\$ 4.0	\$ 6.0	\$ 7.5	\$ 11.2
30	Mid-Term	Milligan Rd / Frontier St	Battaglia Dr	Toltec Rd	2	4	Eloy	3.4	\$ 4.0	\$ 6.0	\$ 15.0	\$ 22.4
31	Mid-Term	Milligan Rd / Frontier St	East End	SR-87	2	4	Eloy / Pinal County	3.0	\$ 4.0	\$ 6.0	\$ 13.2	\$ 19.8
7	Mid-Term	Milligan Rd / Frontier St (Phase II)	Toltec Rd	Pearl Rd	4	6	Eloy / Pinal County / Casa Grande	7.3	\$ 4.0	\$ 6.0	\$ 32.1	\$ 48.2
19	Mid-Term	Milligan Rd / Frontier St (Phase II)	SR-87	Sunshine Blvd	4	6	Eloy / Pinal County	2.2	\$ 4.0	\$ 6.0	\$ 9.7	\$ 14.5
9	Mid-Term	Phillips Rd (Phase II)	Lamb Rd	Sunshine Blvd	4	6	Eloy / Pinal County	8.0	\$ 4.0	\$ 6.0	\$ 35.2	\$ 52.8
11	Mid-Term	Phillips Rd (Phase II)	Sunshine Blvd	I-10	4	6	Eloy / Pinal County	2.1	\$ 4.0	\$ 6.0	\$ 9.2	\$ 13.9
45	Mid-Term	Pinal Air Park Rd	Red Rock	Trico Rd	Not Exist	2	Pinal County	6.9	\$ 10.0	\$ 12.5	\$ 75.9	\$ 94.9
48	Mid-Term	Pretzer Rd	Sunland Gin Rd	Picacho Hwy	Not Exist	2	Eloy / Pinal County	10.0	\$ 10.0	\$ 12.5	\$ 110.0	\$ 137.5
24	Mid-Term	Sunland Gin Rd	Harmon Rd	South of Harmon Rd	2	4	Eloy / Pinal County	1.0	\$ 4.0	\$ 6.0	\$ 4.4	\$ 6.6
4	Mid-Term	Sunland Gin Rd (Phase II)	Frontier St	Battaglia Dr	4	6	Eloy / Pinal County	4.0	\$ 4.0	\$ 6.0	\$ 17.6	\$ 26.4
13	Mid-Term	Sunland Gin Rd (Phase II)	Battaglia Dr	Harmon Rd	4	6	Eloy / Pinal County	6.0	\$ 4.0	\$ 6.0	\$ 26.4	\$ 39.6
25	Mid-Term	Sunshine Blvd	South of Phillips Rd	South of Pretzer Rd	2	4	Eloy / Pinal County	4.6	\$ 4.0	\$ 6.0	\$ 20.2	\$ 30.4
15	Mid-Term	Sunshine Blvd (Phase II)	Alsdorf Rd	South of Phillips Rd	4	6	Eloy	3.4	\$ 4.0	\$ 6.0	\$ 15.0	\$ 22.4
26	Mid-Term	Toltec Rd	South of Harmon Rd	Pretzer Rd	2	4	Eloy / Pinal County	1.0	\$ 4.0	\$ 6.0	\$ 4.4	\$ 6.6
17	Mid-Term	Toltec Rd (Phase II)	Houser Rd	South of Harmon Rd	4	6	Eloy / Pinal County	7.8	\$ 4.0	\$ 6.0	\$ 34.1	\$ 51.2
43	Long-Term	Baumgartner Rd	Red Rock	Camino Adelant	Not Exist	2	Pinal County	3.6	\$ 10.0	\$ 12.5	\$ 39.6	\$ 49.5
44	Long-Term	Baumgartner Rd	Sunland Gin Rd	Picacho Hwy	Not Exist	2	Pinal County	10.1	\$ 10.0	\$ 12.5	\$ 110.8	\$ 138.5
20	Long-Term	New Link Parallel Picacho Hwy	I-10	Baumgartner Rd	Not Exist	6	Pinal County	9.0	\$ 20.0	\$ 23.0	\$ 198.0	\$ 227.7
32	Long-Term	Picacho Hwy	I-10	South of Pretzer Rd	2	4	Pinal County	5.6	\$ 4.0	\$ 6.0	\$ 24.4	\$ 36.6
35	Long-Term	Picacho Hwy	South of Pretzer Rd	Baumgartner Rd	2	4	Pinal County	3.0	\$ 4.0	\$ 6.0	\$ 13.2	\$ 19.8
42	Long-Term	Sunshine Blvd	South of Pretzer Rd	Baumgartner Rd	Not Exist	2	Pinal County	3.0	\$ 10.0	\$ 12.5	\$ 33.0	\$ 41.3
37	Corridor Preservation	Deep Well Ranch	Houser Rd	SR-79	Not Exist	2	Pinal County	3.4	Not included at this time due to lack of detailed information on specific corridor. Additional study would be required.			
38	Corridor Preservation	Harmon Rd	I-10	Pecan Rd	Not Exist	2	Pinal County	6.3				
39	Corridor Preservation	Harmon Rd	Picacho Hwy	I-10	Not Exist	2	Pinal County	3.7				
40	Corridor Preservation	Houser Rd	East End	Deep Well Ranch	Not Exist	2	Pinal County	8.5				
47	Corridor Preservation	New Link Parallel to Pecan Rd	Park Link Rd	Harmon Rd	Not Exist	2	Pinal County	4.2				
41	Corridor Preservation	Selma Hwy	SR-87	SR-79	Not Exist	2	Pinal County / Coolidge	15.7				

Operational Improvements

The project recommendations include ancillary intersection, signal, and intelligent transportation system (ITS) improvements associated with these listed projects. However, additional operational improvements should be expected throughout the study area to address spot improvements at intersections, ITS advancements, and other operational improvements.

Traffic Interchanges

The traffic interchanges recommended as part of this study provide for regional access and circulation needs within the study area. The new interchanges would be beyond local jurisdictions' programs, most likely to be included as part of ADOT-funded programs and include the following:

- Totolita Boulevard
- Missile Base Road
- Park Link Drive
- Harmon Road
- Battaglia Road
- Sunland Gin Road
- Selma Highway

Multimodal Transportation

As the region grows, detailed corridor level recommendations accommodating a range of modal choices should be included as mobility options to reduce dependency on personal vehicle. Roadway design should accommodate bicycles and pedestrians to facilitate short distance trips that can be made by bicycles and pedestrians or other travel modes. This includes design accommodating continuous bicycle lanes, sidewalks, and trails. Also, the transportation network design should consider bicycle and pedestrian access, such as pathways at cul-de-sacs and ingress/egress to gated communities. Future considerations should be made to develop detailed bicycle and pedestrian guidelines. A range of types of transit would be appropriate within the study area, including local circulator buses, regional commuter bus, commuter rail, and intercity rail. As the communities within the study area grow and evolve, further study is recommended.

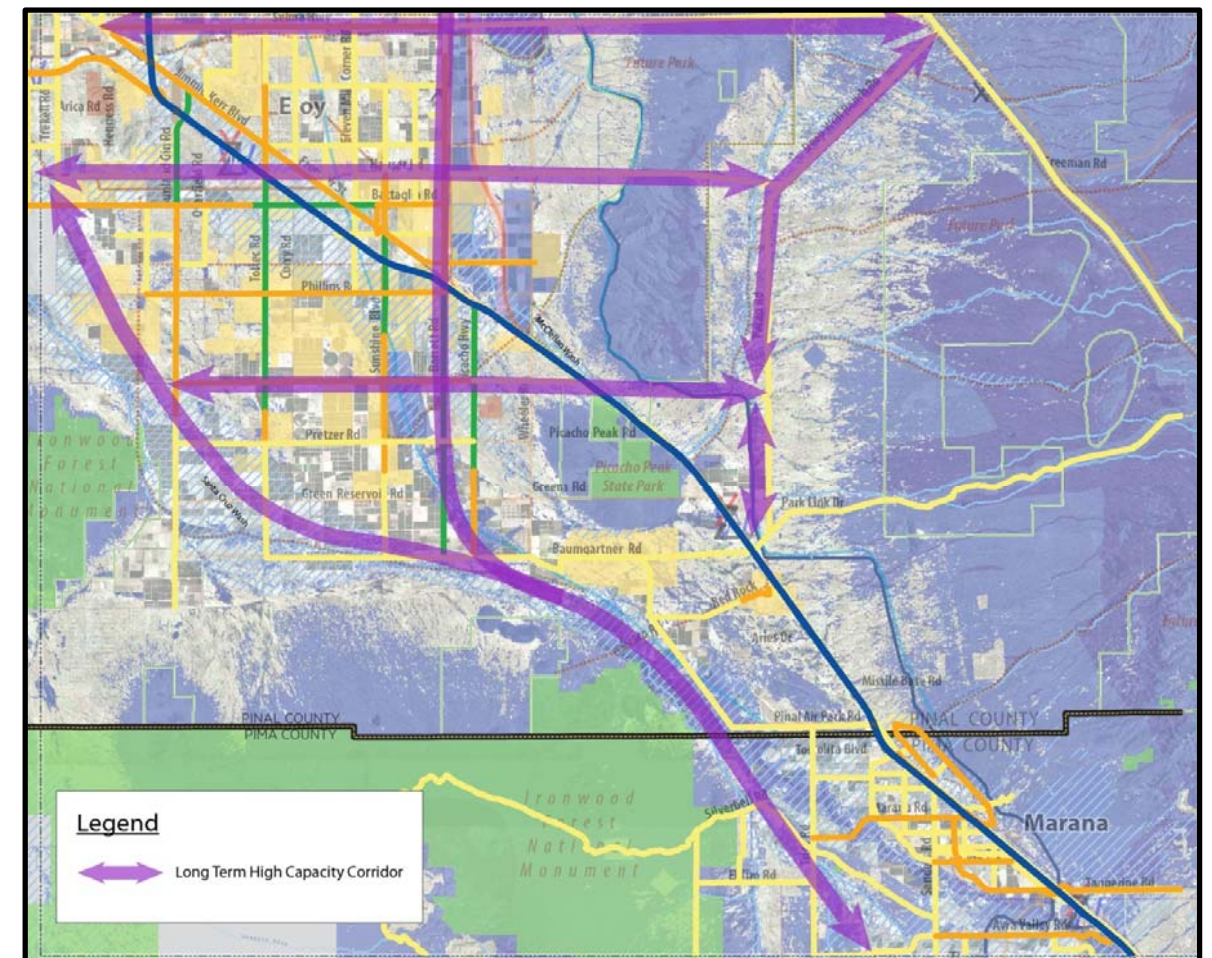
Corridor Preservation Needs

The identification of needs beyond that projected in Scenario B is important to ensure corridor preservation as the region grows beyond the population and employment projected. Corridor preservation allows for advanced planning for future studies, right-of-way preservation and an understanding of future circulation to provide access to undeveloped and underdeveloped areas as interest and activity in those areas begin to materialize.

Future growth needs include access to areas to the north and east of I-10, as well as higher capacity facilities in addition to I-10. Higher capacity facilities would facilitate regional circulation within the study area as well as longer distance trips through the study area. Additional studies are being conducted by the ADOT to examine higher capacity needs including the *I-11 and Intermountain West Corridor Tier 1 Environmental Impact Statement (EIS)*, and the *North-South Corridor Study*. Additionally, the *2008 Pinal County Regionally Significant Routes for Safety and Mobility (RSRSM) Plan* identified the need for a parkway to the southwest of Eloy. Although this study could not verify a need for this parkway based on currently understood growth plans, this future parkway could be needed as growth in the areas exceeds current plans, providing for higher capacity movement in the southwest of the study area and possibly serving as a viable alternative in the *Intermountain West Corridor Tier I EIS*.

The corridors identified in Figure 23 needs further detailed study. The map also depicts a base layer of known constraints or impediments, including the Arizona Game and Fish Habi-map, flood zones and canals. This is intended to convey the areas which may be more developable in the near-term versus areas which have long-term development potential. These documents, however, are not regulatory in nature. Areas which have better access to existing infrastructure and limited environmental impacts are most likely to be developed sooner than areas which will require more investment in infrastructure development. High capacity transportation corridors provide key regional access and circulation and are highlighted in Figure 23.

Figure 23: Long-Term High Capacity Transportation Corridors



FREIGHT OPPORTUNITIES

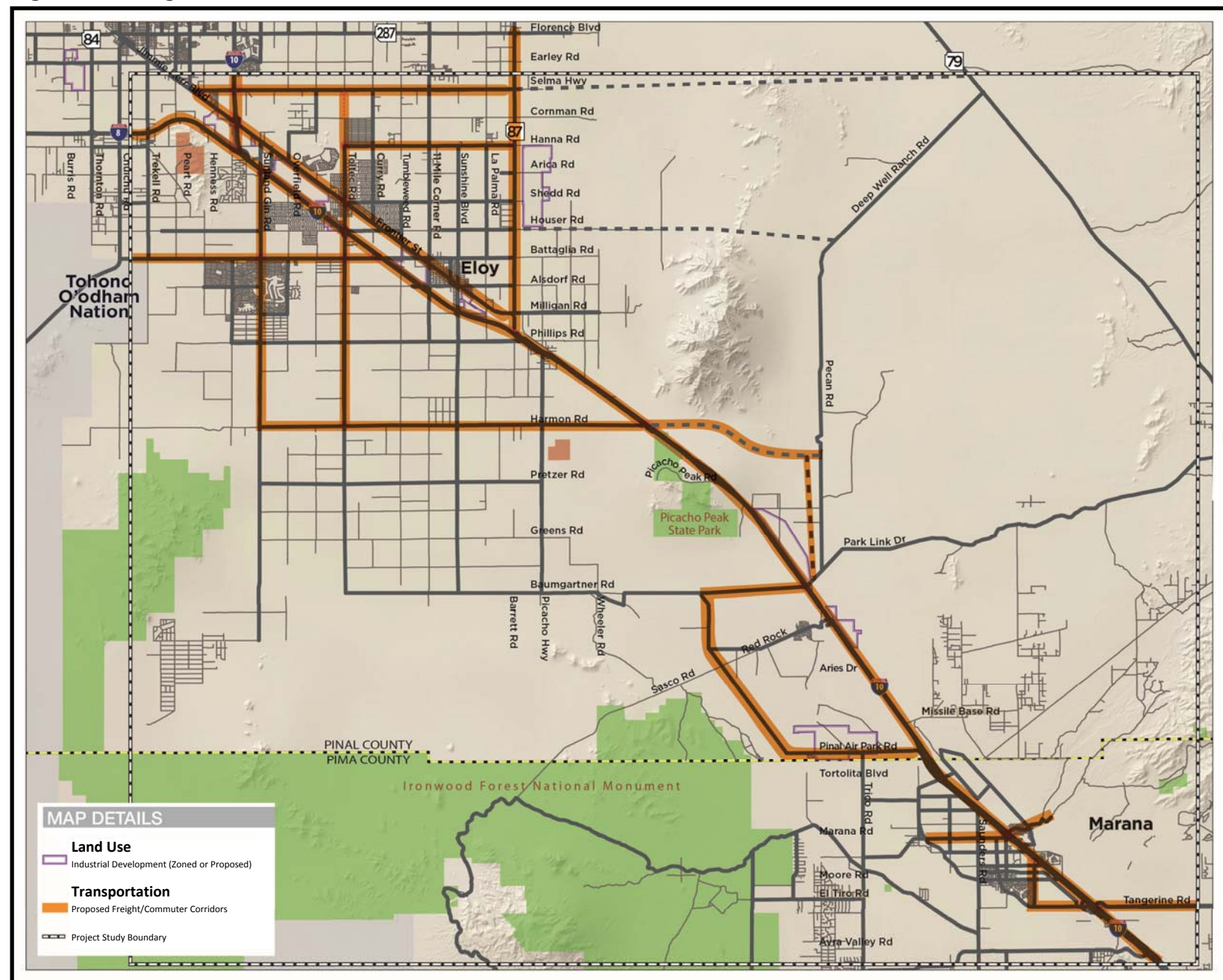
Within the study area, Interstate 10, Interstate 8, and State Route 87 are appropriate corridors to expand existing freight-related services and create new services. Along these corridors there are four distinct opportunity areas:

- **Interstate 10 Corridor:** The portion of the corridor located between Sunshine Boulevard and Sunland Gin Road in Eloy is unique in that it has access to skilled labor available from Casa Grande and Eloy, is roughly three-quarters of a mile long, offers highway and rail servicing for large scale destinations, and is located at a significant interstate highway interchange. This particular area is unique based on the existence of parallel roadway and rail facilities that can be accessed and loaded separately. This allows for additional roadway network expansion and railway spur extensions without modal conflict. Based on the proximity to the interchange, this focus area could complement a broad-based mixing center facility type.
- **Red Rock Classification Yard:** Situated on the north side of Interstate 10, just south of Picacho Peak, lies the proposed Red Rock Classification Yard that is planned to contain approximately a seven (7) mile long rail classification yard for rail operations. In addition to the rail operations, it is possible that other freight-related industries could locate in the area if they can benefit from the proximity of the new facility.
- **State Route 87:** A large area of land in the City of Coolidge, located east of SR 87 and north of Houser Road is envisioned for significant freight related development. This area is well positioned to contribute to the mixing center facility type due to its nexus to Interstate 10 and SR 87.
- **Pinal Airpark:** Located along the southern boundary of Pinal County and west of Interstate 10, this existing facility is planned for expansion of development and employment opportunities. More broadly, it is between Tucson International Airport (TIA) and the interchange of Interstates 10 and 8, with the Union Pacific rail line operating adjacent to the east side of Interstate 10. This location, coupled with the extensive planning for the Airpark, and the assets of the existing facility, provides extensive development opportunities that can expand job growth through aviation, logistics and manufacturing.

Freight and Commuter Corridors

Identification of the backbone freight and commuter network helps to identify key regional corridors. These corridors provide access to jobs and facilitate freight movement. As these corridors are developed, they should follow design standards that support significant commuter and freight movements, such as wider rights-of-way, turning radii and more robust pavement sections to accommodate trucks. The recommended network, identified in Figure 24, focuses on movement throughout the region, including access to I-10 and industrial areas.

Figure 24: Freight and Commuter Corridors



POLICY OPPORTUNITIES

The policy strategies that will foster the realization of the plan must be specific and flexible to meet expectations for sustainable growth and improved circulation and access. The policy guidance will also encourage a long range view of how the area will develop to preserve opportunities for facilities that will accommodate increased growth that may not yet be identified in local plans or technological opportunities still under development.

Governance / Planning Strategy

- Ensure compatibility between the county-wide transportation system and local community networks.
- Encourage Pinal County's and local communities' development patterns to support a diverse range of travel modes designed to effectively meet regional and local mobility needs.
- The identified network and character of proposed facilities should encourage the development pattern in Pinal County to support a diverse range of travel modes.
- Develop bicycle and pedestrian design guidelines to ensure multimodal transportation options are included in development of communities.
- Promote vehicular and pedestrian access to corridors in the development of all commercial centers, mixed use activity centers employment centers, and public facilities.
- Identify and adopt freight focus areas to ensure compatible land uses and transportation network such as in the Focus areas of Red Rock, I-10 (in Eloy), SR 87 (between Eloy and Coolidge) and Pinal Airpark
- Provide connectivity among county, cities and towns, the six identified Focus Areas and other major activity centers.
- Maintain continuity of network and access to all developable lands throughout the study area.

Capital Improvements

- Work with ADOT to ensure the efficiency and functionality of I-10 or other high capacity transportation facilities to serve anticipated growth in population, employment and recreation within Pinal County.
- Construct principal arterials, parkways, and enhanced parkways as multimodal roadways, incorporating design features such as bus queue jumps or dedicated high capacity vehicle lanes where warranted, and sufficient right-of way width to accommodate bicycles and sidewalks.
- Design supporting transportation systems for each of the six focus areas to address their unique needs and to strengthen their economic development appeal.
- Require development to adhere to the *Pinal County Regionally Significant Routes for Safety and Mobility (RSRSM) Access Management Manual*.
- Construct key facilities, such as the freight and commuter corridors, that provide access and circulation to freight centers such as in Focus Areas at Red Rock, I-10, SR 87 and Pinal Airpark, to standards that will accommodate the higher loads of heavy freight activity.
- Identify long term right-of-way corridors to be preserved as development activity warrants, ensuring future system continuity, capacity and integrity.
- Coordinate with the Arizona State Land Department and future development interests on corridor placement to maximize land use access and minimize impacts to sensitive resources.
- Acquire designated rights-of-way necessary to construct roadways through dedication and/or easements as development approvals are requested.
- Identify opportunities for funding infrastructure construction through development or investment opportunities adjacent to and/or within the corridor rights-of-way.

Service and Performance Monitoring

- Development information will continue to be aggregated by CAG. Updates should occur on an ongoing basis.
- Engage the state demographer as the currently anticipated development would significantly alter long-term needs.
- Identify and preserve desired locations for employment centers, which will require the *Pinal County Comprehensive Plan* to be reviewed and refined.
- Refine land use categories in the *Comprehensive Plan* to better understand transportation impacts.
- Continually assess timing of anticipated development.
- Adopt appropriate performance measures compatible with the requirements of MAP-21 and ADOT's Planning-to-Programming (P2P) Link process.
- Establish a performance review cycle to assess the quality of transportation performance across the region.
- Define a formal process in the *Comprehensive Plan* to strengthen the connection between ongoing developments monitoring of impacts of land use on the transportation system with transportation performance-based requirements.
- Review and revise *Comprehensive Plan* checklist to ensure development review process and approvals reflect County vision and performance measures.

NEXT STEPS

This study recommended near-term, mid-term, and long-term transportation improvements based on population and employment thresholds, to address needs as the region grows. These improvements identify infrastructure needs to accommodate known development, build out the transportation network to create redundancies and facilitate economic development. These improvements will enable freight movements and development of the region as a major freight center. An update to the *Pinal County Comprehensive Plan* is recommended to be able to accommodate the recommended policy level changes that are recommended. Additionally, the various municipalities encompassed in this study area will also need to revisit various adopted plans and policies to advance the recommended improvements.