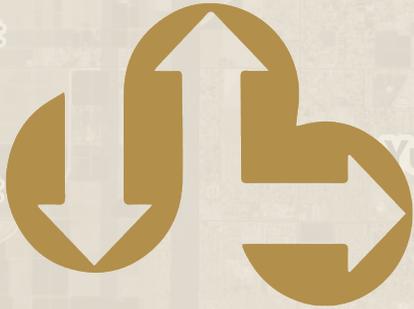




Reservation



Yuma Expressway Study Final Report

Task Assignment MPD 79-12

May 2013

City of Yuma



Prepared By

**PARSONS
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Abbreviations

AADT	Average Annual Daily Traffic
ACS	American Community Survey
ADOT	Arizona Department of Transportation
APS	Arizona Public Service
ASH	Yuma Area Service Highway
ASLD	Arizona State Land Department
BLM	Bureau of Land Management
Caltrans	California Department of Transportation
CDP	Census Designated Place
CEQA	California Environmental Quality Act
CIHAD	Cocopah Indian Housing and Development
CIP	Capital Improvement Program
DCR	Design Concept Report
EJ	Environmental Justice
FHWA	Federal Highway Administration
HNAPZ	High Noise or Accident Potential Zone
HUD	U.S. Department of Housing and Urban Development
I-8	Interstate 8
kV	Kilovolt
LOS	Level of Service
LRTP	Long Range Transportation Plan
MCAS	U.S. Marine Corps Air Station
MODE	Main Outlet Drain Extension
mph	Miles per Hour
MSA	Metropolitan Statistical Area
NW	Northwest
PARA	Planning Assistance for Rural Areas
PM ₁₀	Particulate Matter 10
POE	Port of Entry
ROW	Right-of-Way
RTP	Regional Transportation Plan
RV	Recreational Vehicle
SR	State Route
TAC	Technical Advisory Committee
TAZ	Traffic Analysis Zone
TDMS	Traffic Data Management System
TI	Transportation Interchange
UP	Union Pacific
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service



- YCAT Yuma County Area Transit
- YCIPTA Yuma County Intergovernmental Public Transportation Authority
- YMPO Yuma Metropolitan Planning Organization
- YUWW Yuma West Wetlands



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Executive Summary

The City of Yuma and Yuma County are located in southwestern Arizona and are serviced by three major ADOT state routes: I-8, US 95 and SR 195, along with a grid based local road system owned and operated by the City of Yuma or Yuma County. The Yuma Expressway Corridor Study focuses on the area along the western and southern boundaries of the City of Yuma. The Yuma Region has experienced large growth over the past several decades and it is anticipated that the pattern will continue well into the future.

To ensure that local input and direction is incorporated into the study process, the study has been conducted with guidance from a Technical Advisory Committee (TAC), composed of members representing the following agencies:

- City of Yuma
- Arizona Department of Transportation (ADOT)
- Yuma County
- Yuma Metropolitan Planning Organization (YMPO)
- Cocopah Tribe
- Quechan Indian Tribe
- City of San Luis
- City of Somerton
- Imperial County Transportation Commission
- Marine Corps Air Station (MCAS)
- California Department of Transportation (Caltrans)
- Federal Highway Administration (FHWA)
- Arizona Game and Fish

The study process was performed in three basic steps, which compiled the information into a working paper that was reviewed by the Yuma Expressway TAC. The finalized versions of the working papers are the major sections in this study.

1. Current Conditions
2. Future Conditions
3. Corridor Alternatives

Current Conditions

The Current Conditions of the Yuma Expressway Study Area gathered available data and information on existing conditions. This information was the baseline for the understanding of the community objectives, opportunities and constraints. Applicable existing studies were summarized and documented. Existing topographic features, socioeconomic data, roadway classifications, traffic counts, multimodal transportation facilities and environmental constraints were documented, as well.



Future Conditions

The future land use, future socio-economic conditions, planned transportation infrastructure and summaries of current ongoing studies were analyzed and documented in the Future Conditions working paper. The analysis assumed that there are no improvements made to the overall transportation network other than those that are already programmed. The information presented showed that existing and previously planned roadways within the project study area would provide an acceptable level of service to the traveling public for the near future. It is estimated that County 14th Street will need capacity upgrades from its current configuration when the population of the Yuma region reaches approximately 370,000.

Corridor Alternatives

Using the information analyzed and documented in the Current and Future Conditions working papers, along with input received from the Technical Advisory Committee (TAC) and the first public meeting, three corridors were generated and studied to identify the future impacts and benefits to the region. Each corridor was evaluated for a variety of different facility types including arterial streets, an expressway, and a rural freeway. One corridor was determined to be unreasonable because it had significant impacts to the Yuma Marine Corps Air Station and was eliminated. The remaining corridors and facility type alternatives were presented to the public at the second public meeting. Based on guidance from the TAC and public input, Corridor 3 Expressway (Alternative 3B) was selected as the preferred alternative. The Expressway would consist of three lanes in each direction with limited access at major cross roads. Alternative 3B also requires that the roadway be constructed off the existing County 14th Street and Avenue D alignments.

The U.S. Department of Transportation's Planning and Environmental Linkages (PEL) process was utilized for this study. While the PEL does not preclude the identification of a preferred alternative it does require that any alternatives that have not been eliminated as unreasonable be carried forward in the development of a NEPA-compliant document if the project is to be eligible for federally funding. Thus, any right-of-way preservation based on this study is done at risk.



1. Introduction

1.1. Background

Through the Planning Assistance for Rural Areas (PARA) program, the Arizona Department of Transportation (ADOT) and the City of Yuma cooperatively conducted the Yuma Expressway Corridor Study to develop a preliminary assessment and feasibility of a proposed corridor alignment along the south and western portions of the City of Yuma. Improvements to this corridor would benefit the region by addressing a number of different customers traveling around and through the region.

1.2. Purpose and Need Statement

The purpose of this study is to plan for adequate transportation capacity in the Yuma Expressway Study Area. This study will look at the future need of improving the existing transportation system within the study area, or the possibility of constructing new roadways within the study area.

The likelihood of future development in southwestern Yuma County generates the underlying need for this corridor, which is expected to address a potential increase in traffic on roadways within the study area. Although many portions of the study area are slated to remain agriculture for many years to come, it is prudent for City of Yuma and surrounding communities to plan for development should land use change in the future. The Yuma Expressway Corridor Study will serve as a basis for future planning studies, if and when land use changes occur. Additionally, the Study will provide a “trigger” or threshold for interim roadway improvements that will be needed before the construction of an expressway is justified.

1.3. Goals and Objectives

As Yuma County continues to transform and grow in the coming decades, the need for the Yuma County Expressway, generally aligned along County 14th Street and Avenue D, will increase. Through a combination of actions, the Yuma Expressway has the potential to not only support economic development as envisioned in local plans, but it could also enhance the quality of life for area residents by improving accessibility and safety.

A list of goals and objectives were developed based on existing and future conditions, technical data, and guidance from the Technical Advisory Committee (TAC). Goals are long-term ideas, describing future expected outcomes. They are not necessarily measurable or tangible, as they outline generic actions to help achieve a vision. Objectives are measurable and define specific actions that, when taken, will accomplish established goals. The purpose of goals and objectives is to outline the framework for developing the Yuma Expressway Corridor in a manner that reflects the overall vision of the impacted communities.



Table 1-1 presents the three goals and supporting objectives proposed for this corridor. These goals and objectives guide the development of alternatives and are further described in Chapter 4.

Table 1-1: Goals and Objectives

<p>GOAL 1 Promote economic development within the region by providing additional access for regional and local needs</p>	<p><i>Objective 1.1</i></p>	<p>Encourage transportation improvements that align with planned growth and are consistent with local plans.</p>
<p>GOAL 2 Improve safety throughout the corridor for all users.</p>	<p><i>Objective 2.1</i></p>	<p>Consider access management during roadway design, specifically, conflicting turning movements.</p>
	<p><i>Objective 2.2</i></p>	<p>Develop an Expressway design that reduces and/or better manages recurrent congestion.</p>
	<p><i>Objective 2.3</i></p>	<p>Moderate travel speeds via design.</p>
	<p><i>Objective 2.4</i></p>	<p>Consider all potential users in the planning and design process.</p>
<p>GOAL 3 Provide an Expressway Corridor that balances both regional and local needs.</p>	<p><i>Objective 3.1</i></p>	<p>Accommodate and improve connectivity for traffic between the two Ports of Entry along the Mexico border in San Luis and I-8.</p>
	<p><i>Objective 3.2</i></p>	<p>Consider local transportation within and between Yuma and the cities of Somerton and San Luis.</p>
	<p><i>Objective 3.3</i></p>	<p>Coordinate with MCAS-Yuma as they reroute their main entrance to connect south with County 14th Street instead of to the east along Avenue 3E</p>
	<p><i>Objective 3.4</i></p>	<p>Provide for safe and convenient access to local land uses.</p>

1.4. Study Area

The Yuma Expressway study area is located in the Greater Yuma Area, in the southwestern region of Arizona. The Yuma Expressway study area is situated in the vicinity of the City of Yuma, City of Somerton, unincorporated Yuma County, the Cocopah Indian Reservation, and the Fort Yuma Indian Reservation as illustrated in Figure 1-1. Other jurisdictions located near the study area include the City of San Luis, Arizona and Winterhaven, California.

Avenue D and County 14th Street are the primary axes for the study area. As shown in Figure 1-1 and Figure 1-2, the Yuma Expressway study area runs from north to south along Avenue D, between Interstate 8 (I-8) and County 14th Street, then from west to east along County 14th Street, between Avenue D and State Route (SR) 195, also referred to as the Yuma Area Service Highway (ASH) and the Robert A. Vaughan Expressway. A two-mile wide area centered along Avenue D and County 14th Street was used for this analysis.

As shown in Table 1-2 most of the study area is unincorporated, with only 20.6% of the study area located within the City of Yuma. Most of the Yuma Expressway study area is situated within the State of Arizona, except for the section of Fort Yuma Indian Reservation which is within Imperial County in the State of California.



The Quechan Indian Tribe constitutes the population of the Fort Yuma Indian Reservation in Imperial County, California. Similarly, the Cocopah Indian Tribe inhabits the Cocopah Indian Reservation in Yuma, Arizona. For purposes of this report, references to the Reservations refer to the actual land or jurisdiction. References made to the Quechan or Cocopah tribes refer to those people who consider themselves part of that tribe.

Table 1-2: Study Area Distribution

Jurisdiction	Area (sq miles)	Percent of Total Study Area
City of Somerton	0.6	1.7%
City of Yuma	7.2	20.6%
Cocopah Indian Reservation (AZ-Yuma County)	0.7	2.0%
Fort Yuma Indian Reservation (CA-Imperial County)	0.6	1.7%
Unincorporated Area – Yuma County	25.8	73.9%
Unincorporated Area – Imperial County	0	0.0%
Total Study Area	34.9	100.0%
Source: Arizona State Land Department (ASLD), 2008		

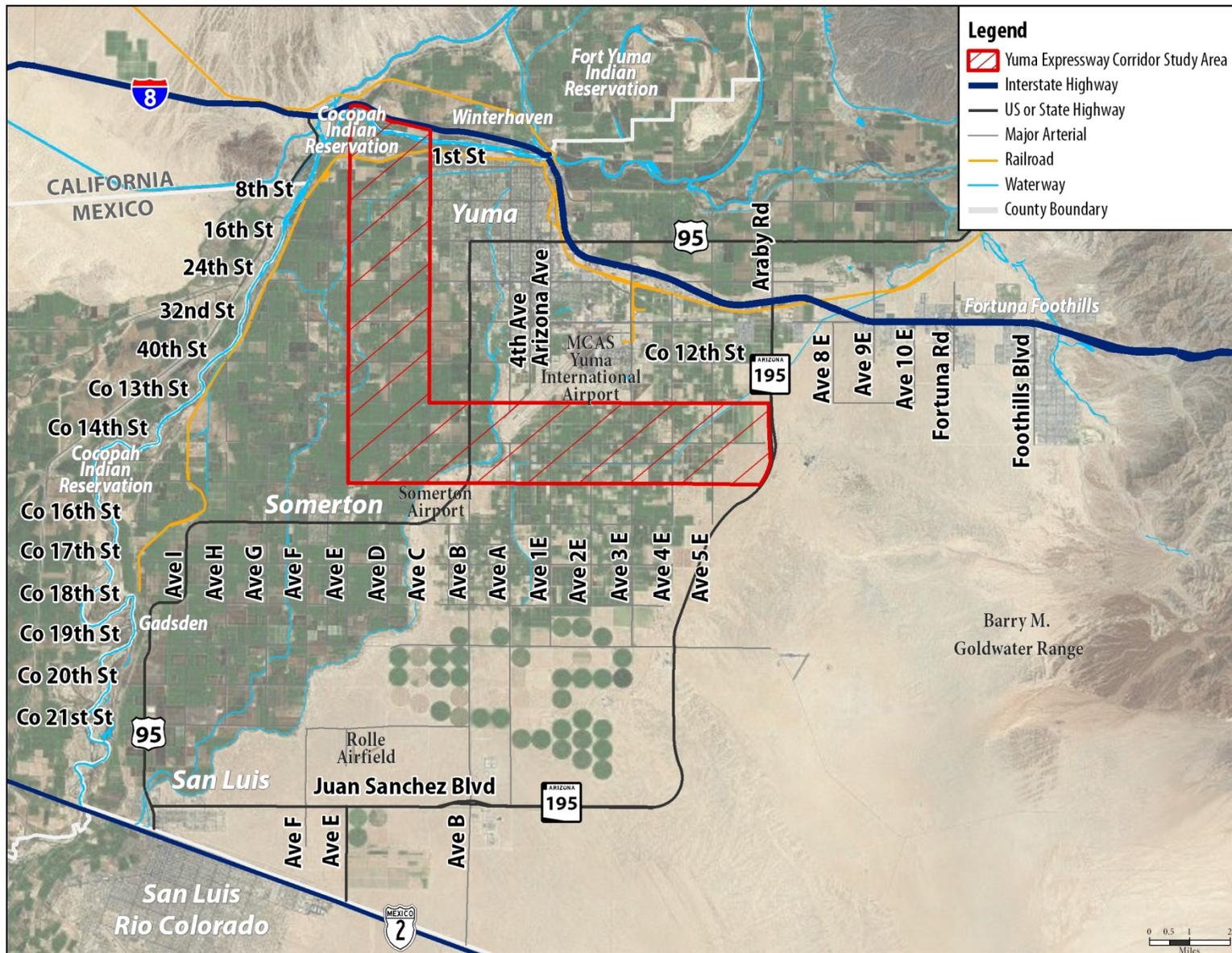
1.5. Report Organization

This report is organized into the Introduction, Current Conditions, Future Conditions, Corridor Alternatives, and Conclusion. The Introduction chapter provides the background for the study, defines the study area, outlines the goals and objectives for the corridor and presents the organization of the report. Chapter 2, Current Conditions describes the existing conditions within the Yuma Expressway study area and more generally its vicinity, where appropriate. Existing socio-economic conditions and transportation-related characteristics are also described, as well as other physical and environmental features.

Chapter 3, Future Conditions, presents the forecasted future conditions of the region, including a description of anticipated traffic operations within and around the Yuma Expressway study area. The operational analysis is based upon Yuma Metropolitan Planning Organization (YMPO) travel forecasts, which in turn are dependent upon regional population and employment forecasts. This report summarizes the regional population and employment projections, identifies projected travel characteristics, and forecasts future roadway operations assuming there are no improvements made to the overall transportation network other than those already programmed.

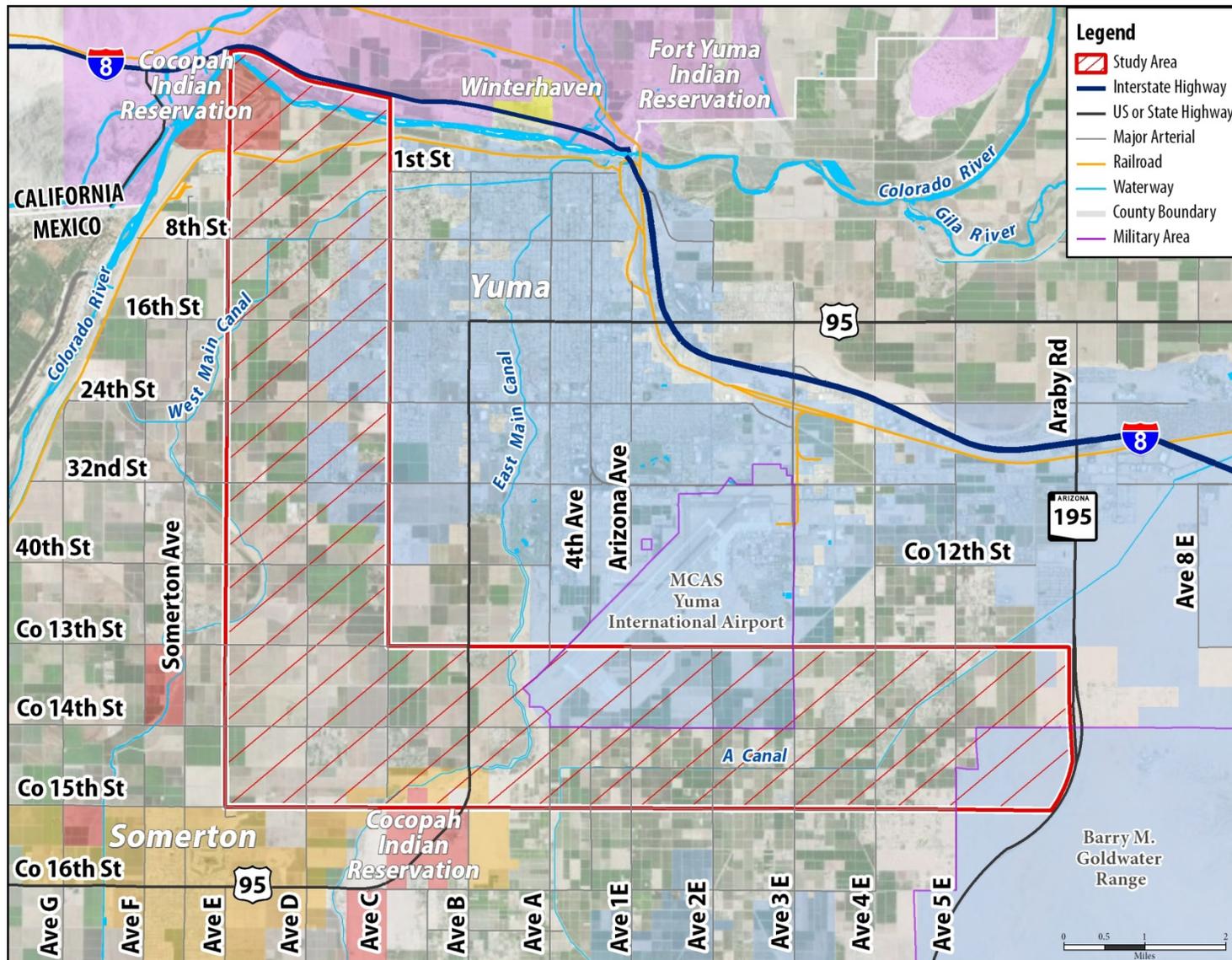
Chapter 4 presents the various alternatives and the method of evaluation for the preferred alternative. The alternatives consist of various corridors and multiple typical sections/roadway types. The alternatives were evaluated and presented to the TAC to ensure consensus with the methodology used to identify a preferred alternative.

Figure 1-1: Southwestern Yuma County



Source: YMPO, 2011; Parsons Brinckerhoff, 2012; Bing, 2012

Figure 1-2: Study Area



Source: YMPO, 2011; Parsons Brinckerhoff, 2012; Bing, 2012

2. Current Conditions

This chapter describes the current conditions within the Yuma Expressway study area and more generally its vicinity, where appropriate. Section 2.1 summarizes relevant studies to the study area, Section 2.2 discusses existing socio-economic conditions, Section 2.3 describes existing topographic features and utilities, and Section 2.4 describes transportation-related infrastructure and characteristics in the study area. Section 2.5 discusses environmental features in the study area and provides a preliminary environmental review.

2.1. Summary of Relevant Studies

2.1.1. Arizona Department of Transportation (ADOT), Interstate-8 (I-8)/US 95 Corridor Study (1988)

The I-8/US 95 Corridor Study, completed by ADOT in 1988, identified and evaluated options to meet short- and long-term transportation needs for the I-8 and US 95 corridors. Findings revealed that neither corridor had sufficient capacity to accommodate future traffic demands.

This study resulted in a recommendation to continue the planning process by performing a location study to identify potential alternative corridors. Based on subsequent studies, two corridors were selected: one, which is now the existing State Route (SR) 195, connecting the international border at San Luis, north to I-8; and a second that looped around the U.S. Marine Corps Air Station (MCAS)-Yuma and the Yuma International Airport connecting SR 195 to I-8, now referred to as the Yuma Expressway.

2.1.2. ADOT, SR 195 Yuma Area Service Highway (ASH) Design Concept Report (1998)

The 1998 Yuma ASH Design Concept Report addressed design issues and design alternatives for the proposed ASH in the Yuma Metropolitan Area. While the Yuma Expressway is not specifically mentioned in this document, it does reference the need for a major intersection, including the installation of traffic signals, at County 14th Street.

2.1.3. ADOT, Yuma ASH Environmental Assessment (2005)

ADOT, in conjunction with the Federal Highway Administration (FHWA) and the Yuma Metropolitan Planning Organization (YMPO), identified the need to provide a direct transportation route to the future commercial international port of entry (POE) (San Luis II) 5 miles east of San Luis, Arizona. While the Diplomatic Note creating this POE specified that only commercial traffic would utilize this port, it is master-planned for the possible future expansion to serve as a full-service Port to inspect privately-owned vehicles, pedestrians, as well as commercial vehicles.

An Environmental Assessment was completed in 2005 to evaluate alternative options for the approximately 24-mile long ASH that has been designated as SR 195 by the State Transportation Board. A preferred alternative was selected, and in 2007 a Finding of No



Significant Impact was issued and approved, completing the environmental process for this project. By 2009 the SR 195 corridor was designed and constructed.

2.1.4. City of Yuma, Major Roadways Plan (2005)

The purpose of the 2005 Major Roadways Plan is “to define policies for development of a roadway system that will adequately serve the City of Yuma and surrounding area when it is fully developed at densities shown/predicted in the Land Use Element.”

This plan includes a street classification system, development standards for improving existing roads and constructing new ones, as well as designated truck routes and scenic corridors that require special design attention. The Major Roadways Plan is also the policy guide for placing street improvement projects into the City’s Capital Improvement Program.

The Roadways Plan Map identifies the Yuma Expressway and defines it as a major, 4- to 6-lane carrier of regional and cross-town traffic with completely controlled access. Private property access would only occur if frontage roads were present. Intersections are typically at-grade, located at major streets with a preferred one-mile spacing.

2.1.5. City of Yuma, General Plan (2012)

According to the City of Yuma 2012 General Plan, “Yuma was one of the forty fastest growing Metropolitan Statistical Areas (MSA) of the United States from 2000 to 2009; and from 2008 to 2009, the fastest growing MSA in Arizona.” Measures have been taken by the City to address growth and implement priority roadway improvements, mainly in the form of traffic system management and operational enhancements.

Goals, objectives and policies in this plan specifically address the need for roadways that facilitate access to major commercial and industrial clusters in the area and/or facilitate movement of large trucks through the area. Most of the existing roadways used for cross-town travel were originally designed for property access rather than traffic efficiency. The Yuma Expressway, as identified in the General Plan would be constructed to accommodate more regional needs. This route would also be designated as a hazardous cargo route, as identified in the Yuma County Hazardous Materials Emergency Plan.

2.1.6. City of Yuma, Capital Improvement Program (CIP) (Fiscal Years 2012-2021)

The City of Yuma FY2012-FY2021 CIP is a 10-year schedule of public physical improvements to the City’s infrastructure. It serves as a guide for construction, development and funding for identified improvements.

The Yuma Expressway is included as a Priority III project for FY 2012. Construction of this facility, based on recommendations found in the 2005 Major Roadways Plan, would increase mobility as well as provide an expressway bypass around the southern and western sides of the City of Yuma that currently does not exist.



2.1.7. Yuma County, CIP (Fiscal Years 2010-2014)

The Capital Improvement Projects Quarterly Report: FY 2012 Second Quarter: July 2011 through December 2011 is the most recent report for 2012 for Yuma County. It does not mention the Yuma Expressway.

2.1.8. Yuma County, 2020 Comprehensive Plan (Circulation Element) (2012)

Effective as of March 2012, the Yuma County 2020 Comprehensive Plan is intended to guide development and growth of the unincorporated area of Yuma County over the next ten years. The conservation of natural resources as well as the efficient and appropriate utilization of public monies will both play major roles throughout this process.

Although the Yuma Expressway is not specifically mentioned, the Circulation Element identifies roadway improvements, not including additional lanes, to County 14th Street from Avenue 3E to SR 195. This element also states that “roadway segments that promote grid continuity, and provide a backbone to the overall transportation network” (such as County 14th Street and Avenue 3E) should be identified and utilized as a means to address unacceptable levels of service.

2.1.9. YMPO, Regional Transportation Plan (RTP) (2010)

The 2010-2033 RTP builds upon the findings and conclusions of the 2006-2029 RTP. The planning portion of the Yuma Expressway is listed as a recommended project for 2010-2014. This expressway is identified as two separate pieces: Avenue D to SR 195, and County 14th Street to I-8.

In addition, the Roadway Element section of the 2010-2033 YMPO RTP identifies the need for a 4-lane expressway along County 14th Street from SR 195 to Foothills Boulevard, a possible eastward extension of the Expressway. This report also indicates that the City of Yuma has included funding in its CIP to study two new corridors: an expressway corridor along County 14th Street and Avenue D from SR 195 to I-8 in California.

2.1.10. YMPO, Transportation Improvement Plan (TIP) (Fiscal Years 2012-2016)

The Yuma Expressway is mentioned in the TIP as part of the City of Yuma CIP, Transportation Projects, 2012-2016.

2.1.11. YMPO Travel Demand Model 2009 Update (2010)

The updated YMPO Travel Demand Model was calibrated using the 2008 transportation network and estimated 2008 socio-economic data for the YMPO planning area located mostly in the southwest corner of Yuma County.

This model represents YMPO transportation facilities and travel patterns using these facilities, ultimately accounting for travel demand generated by the surrounding communities.

2.1.12. MCAS-Yuma, Traffic Study (2008)

At the time this report was written, approximately 5,300 people worked at MCAS-Yuma, including personnel living off-base. It was estimated that a maximum addition of two squadrons could potentially be expected in the future, the equivalent of 800 personnel. As a result, peak hour traffic volumes on the base were expected to increase by about 15%. Three alternatives were considered to alleviate traffic congestion on the base, each one included plans to create a new entrance to the south of the base.

- Alternative 1 – New southern gate plus restricted access at the north gate.
- Alternative 2 – New southern gate plus delivery access only at north gate.
- Alternative 3 – New southern gate plus unrestricted access at north gate.

Alternative 1 was recommended as the most suitable option because not only does it provide the best average levels of service for the most congested intersection on the base, but it is also the most viable option in terms of security and levels of service.

2.1.13. MCAS-Yuma, Master Plan (2007)

MCAS-Yuma consists of approximately 4,800 acres. The station also maintains and manages airfield facilities used by Yuma International Airport via a 1956 Patent, which established MCAS-Yuma as a shared-used airfield.

The 2001 MCAS-Yuma Master Plan was updated in 2007. While the mission has not changed – managing a complex of unique training ranges, and providing facilities and services to enhance the combat capability of the Marine Corps and other military services nationwide – there have been notable developments in the physical and operational characteristics of the base. Key issues identified in the Master Plan include: air operations, aircraft maintenance, administration, public safety, medical, bachelor housing, community support, and utilities/circulation.

With regard to Circulation Facilities, the only project planned is the extension of O'Neill Street south to County 14th Street (P-532). This project is included in the list of Programmed Projects, which are all high priority CIP projects, supported by the basic facilities requirements, but which have not yet been approved or funded for construction. The O'Neill Street extension is currently programmed for Fiscal Year 2014 and will include construction of a Security Access Control Facility. Once completed, O'Neill Street will serve as the new Main Gate into the MCAS-Yuma facility.

2.1.14. Yuma International Airport, Master Plan (2009)

The Yuma International Airport focuses mainly on defense and military operations. Commercial operations include two Federal Express shipments arriving daily and passenger flights to Atlanta, Las Vegas, Los Angeles, New York City, and San Francisco. While no immediate plans have been made to increase the movement of commercial goods at the airport, it is something to move toward in the future. The 2009 Master Plan sets forth plans to improve the existing public airfield facilities, including further development of the passenger terminal area, an

expansion of the rental car section, and the addition of expanded facilities for both fixed base operators, as well as general aviation.

Lands within the existing airport boundaries will also be preserved to support supplementary aviation-related facilities. These improvements would be phased and completed based on demand.

2.1.15. City of Somerton, Small Area Transportation Study (2006)

This Transportation Study was developed by the City of Somerton, cooperatively with ADOT and the YMPO. It identifies roadway and transit improvements needed in order to meet the growing population and changing area land uses. The majority of improvements mentioned were focused along US 95 (Main Street) and Somerton Avenue, the two major perpendicular corridors in Somerton.

One transit goal set forth in this plan is to locate and reserve space for a Community Multimodal Center which could include a transfer terminal for use by the Yuma County Area Transit (YCAT) Yellow Line buses, which run north into the City of Yuma via US 95. In addition, the Cocopah Tribe has discussed expansion plans for the already popular casino located on Avenue B between County 15th and 16th streets, located on Reservation land near the northeast corner of Somerton.

2.1.16. Imperial County, Long Range Transportation Plan (LRTP) (2007)

The 2002 Imperial County LRTP was updated in 2007 to account for increases in population, housing, trade, as well as changes in land use developments. In order to accommodate this demand, short-, mid- and long-term transportation improvement projects were prioritized. Project 20 is the only project with any relation to the Yuma Expressway project because it addresses improvements to the SR 186 and I-8 interchange across the border in California.

SR 186 is a 2.1 mile long north-south route connecting Andrade, one of three ports of entry (POE) into Mexico within Imperial County, to I-8. The Andrade POE is located within the Fort Yuma Indian Reservation and mainly processes pedestrians and passenger vehicles. Only 1% of commercial/truck crossings from Imperial County into Mexico, occur at this location. However, California Department of Transportation travel forecasts show dramatic and increasing freight related border crossings at all three POEs through 2030. Project 20 is classified as a long-term project, with a construction horizon of 2025 or beyond.

2.1.17. Imperial Valley Association of Governments, San Diego-Imperial County I-8 Corridor Strategic Plan (2009)

This Strategic Plan is the first phase of a planning effort to improve mobility for people and goods along the I-8 freeway corridor in both San Diego and Imperial counties. The ultimate goal is to provide direction for future phases of this planning effort that will lead to detailed implementation plans.

General findings from the study illustrate that level of service along I-8, particularly in Imperial County, are generally satisfactory. However, as congestion increases in the future, San Diego County will be impacted the most due to higher population density and traffic volumes. Recommendations from this report were therefore mainly focused on changes in that area. There was nothing specific related to the Arizona border crossing as a part of the strategic plan.

2.1.18. California Department of Transportation (Caltrans)-District 11, I-8 Imperial County Transportation Concept Summary (2009)

This document discusses transportation issues related to the 79-mile Imperial County portion of I-8. Serving as the primary east-west route through the county, I-8 is a four-lane facility with complete grade separation at all intersections. Not only does it serve as an interregional route for the traveling public and goods movement carriers, it also provides an interstate connection to Arizona.

While short-term future growth in Imperial County is difficult to predict given the existing economic market conditions, longer-term growth due to a growing population will eventually have an impact on I-8. Additionally, the recent completion of a new hotel/casino near the Arizona border at the southwest corner of the I-8/SR 186 interchange is expected to generate approximately 8,000 average daily trips. This extra traffic will also impact SR 186 from I-8 south to the hotel/casino. Improvements to the I-8/SR 186 interchange are mentioned in this 2009 Concept Summary.

2.1.19. Caltrans, State Route 186 Transportation Concept Study (2010)

SR 186 traverses a lightly populated, rural, and predominantly agricultural environment. This two-lane conventional highway is used most during winter months when “snowbird” populations migrate to desert areas from colder climates. Attractions drawing these populations to the Andrade POE are the Quechan Tribe casino on the Fort Yuma Indian Reservation as well as medical services, entertainment, and shopping located across the border in Algodones, Mexico.

Safety is the primary reason to improve the Andrade POE. Due to the high volume of pedestrians, many of which are elderly with limited mobility, pedestrian access is not only unsafe, but the number of people walking around the area also impedes vehicle circulation and hinders vehicle inspection efficiency.

2.1.20. Lower Colorado Multi-Species Conservation Program: Yellow-billed Cuckoo Distribution, Abundance, and Habitat Use on the Lower Colorado River and Tributaries, 2010 Annual Report (2011)

With a focus on the distribution of the yellow-billed cuckoo, as well as its abundance and habitat use on the Lower Colorado, this report addresses the Yuma West Wetlands (YUWW) City Park which is located adjacent to the east bank of the Colorado River between Avenues A and B in Yuma. According to the 2010 Annual Report, this area has been restored, and consists of a variety of trees including the Fremont cottonwood, Goodding’s willow, and mesquite. Tree heights at the site range from 18 to 36 feet with an estimated 30% canopy cover. Smaller,



understory plants such as the arrowweed, saltbrush, seep willow mesquite, and tamarisk, as well as young naturally regenerating willow and cottonwood, are also found in this area. The Colorado River borders the northern edge of the site and residential areas border the southern, eastern, and western edges. During the 2010 survey, one cuckoo was observed in the YUWW. This area was subsequently identified as transient territory for the yellow-billed cuckoo.

2.1.21. Statewide Transportation Planning Framework Study (bqAZ) (2010)

This transportation planning framework study (bqAZ) was prepared by ADOT in 2010. The bqAZ study received input from communities throughout the state regarding the statewide long range plan. As a part of the Yuma Focus Area in bqAZ, Yuma Expressway was included from the projected intersection of I-8 and Avenue D, south along Avenue D to County 14th Street, then east along County 14th Street to Avenue 15E, once at Avenue 15E the Yuma Expressway would turn north along Avenue 15E and return to I-8. The Yuma Expressway corridor study area further analyzes the western portion of the alignment presented in bqAZ.

2.1.22. Flat-tailed Horned Lizard Rangewide Management Strategy (2003)

According to this report, the Yuma Expressway corridor study area is located within the Historical Distribution Boundary for the flat-tailed horned lizard. Two sites within close proximity to the study area were flagged due to the presence of this species of lizard. Near the intersection of County 14th Street and Avenue C, flat-tailed horned lizards were known to exist between 1950 and 1989. Prior to 1950, these lizards were also known to exist just south of I-8 and along the Colorado River near the 4th Avenue intersection.

2.2. Existing Socio-economic Conditions

2.2.1. Land Use

As shown in Table 2-1 and Figure 2-1 within the study area, 37.2% of land is used for agriculture and 30.4% is residential. Agriculture uses are located on the western part of the study area, west of Avenue A. Other land uses found within the study area include industrial and military areas, particularly portions of the Barry M. Goldwater Range and of the MCAS-Yuma. Even though the MCAS-Yuma is designated as military land use, part of the base is dedicated to residential use as detailed in Section 2.2.4. The Yuma International Airport is a military facility also used for civilian aviation activities. The study area also includes parts of the Cocopah and Fort Yuma Indian Reservations.

Table 2-1: Land Use within the Study Area

Land Use	Area (sq mile)	Percent of Study Area
Agriculture	13.0	37.2%
Residential	10.6	30.4%
Industrial	4.0	11.5%
Military	4.5	12.9%
Tribal Land	1.2	3.4%
Open Space	1.2	3.4%
Public / Quasi Public	0.3	0.9%
Commercial	0.1	0.3%
Total	34.9	100.0%
Source: Yuma County, 2011		

2.2.2. Land Ownership

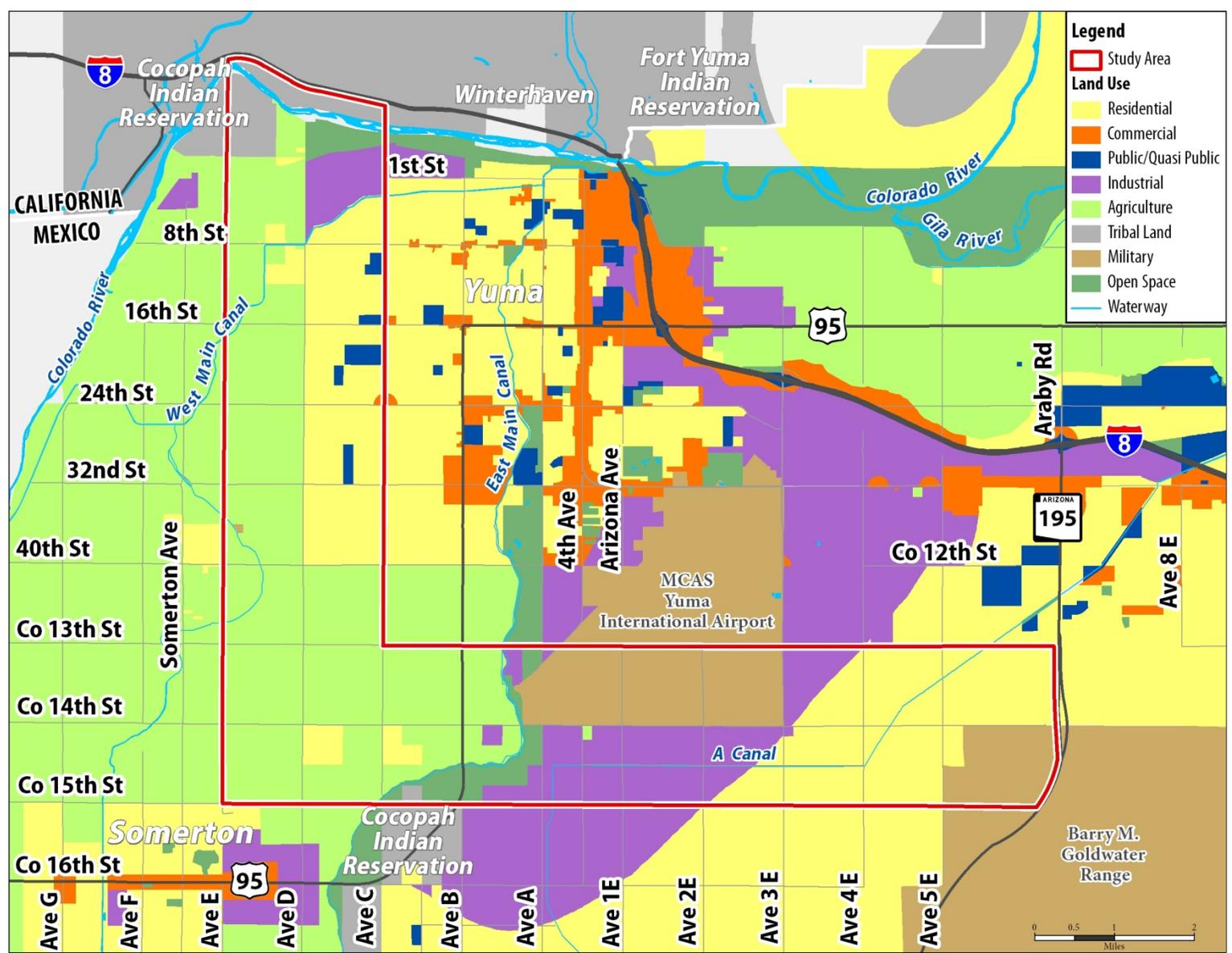
With the land uses being mainly residential and agricultural, most of the land within the study area (81.1%) is privately owned.

As shown in Table 2-2 and Figure 2-2, other landowners include the military, the Cocopah Indian Tribe, the Quechan Indian Tribe, the Bureau of Reclamation, the Bureau of Land Management (BLM), and the State Trust.

Table 2-2: Land Ownership within the Study Area

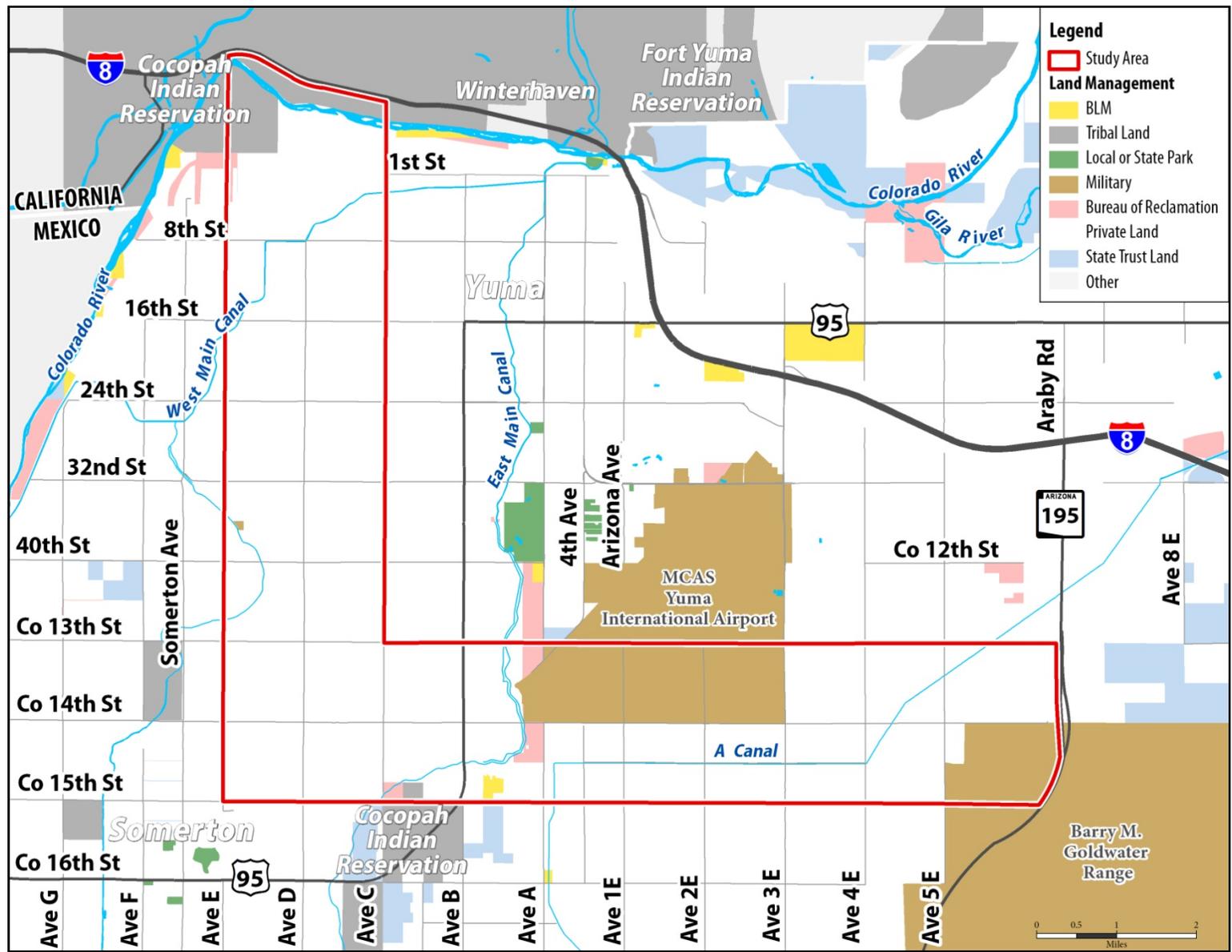
Land Ownership	Area (sq mile)	Percent of Study Area
Private Land	28.3	81.1%
Military	4.5	12.9%
Tribal Land	1.2	3.4%
Bureau of Reclamation	0.4	1.1%
BLM	0.5	1.4%
State Trust Land	0.1	0.2%
Total	34.9	100.0%
Source: Arizona State Land Department, 2008		

Figure 2-1: Existing Land Use



Source: Yuma County, 2011

Figure 2-2: Land Ownership



Source: Arizona State Land Department, 2008



2.2.3. Population and Demographics

Population Number and Density

Yuma County as a whole has experienced periods of rapid population growth over the past decade. According to the 2010 U.S. Census, the population of Yuma County is 195,751 residents, which represents a 22% increase from the 2000 Census. The City of Somerton, located southwest and adjacent to the study area, is the fastest-growing community in Yuma County. As shown in Table 2-3, between 2000 and 2010 the population of the City of Somerton increased by 97%. Total population increased by 20% within the City of Yuma. Both Indian reservations experienced a decrease in the number of residents.

Table 2-3: Percent Change in Population 2000-2010 by Jurisdiction

Jurisdiction	Total Population		Percent Change in Total Population 2000 - 2010
	2000 Census	2010 Census	
City of Somerton	7,266	14,287	Increase +96.6%
City of Yuma	77,515	93,064	Increase +20.1%
Cocopah Indian Reservation	1,025	817	Decrease -20.3%
Fort Yuma Indian Reservation	2,376	2,197	Decrease -7.5%
Unincorporated areas	54,693	56,999	Increase +4.2%
Yuma County	160,026	195,751	Increase +22.3%
Source: U.S. Census 2000 and 2010			

In Yuma County, the highest population densities are found in downtown areas of the Cities of Yuma, Somerton, and San Luis. Figure 2-3 illustrates the population density in the study area. Within the Yuma Expressway study area the population density is generally lower than 500 residents per square mile, except in the western area of downtown Yuma between 1st Street and 32nd Street where population densities can be higher than 8,000 residents per square mile. As shown in Table 2-4, 8.5% of Yuma County’s population is located within the Yuma Expressway study area. The 16,574 residents living within the study area are primarily located in the western portion of downtown Yuma (55.2%), as well as within unincorporated areas (42.2%). Several areas within the study area remain uninhabited.



Table 2-4: Population in the Study Area

Jurisdiction	Population in Study Area	Percent of Study Area's Population	Population in Jurisdiction	Percent of Jurisdiction's Population
City of Somerton	133	0.8%	14,287	0.9%
City of Yuma	9,155	55.2%	93,064	9.8%
Cocopah Indian Reservation	298	1.8%	817	36.5%
Fort Yuma Indian Reservation	5	0.03%	2,197	0.2%
Unincorporated Area	6,988	42.2%	59,196	11.8%
All Jurisdictions	16,574	100.0%	195,751 *	8.5%
* Population in Yuma County Source: 2010 U.S. Census				

Dwelling Units

As shown in Table 2-5, there are 5,704 housing units located within the Yuma Expressway study area. The majority of those housing units are within the City of Yuma (49.1%) and unincorporated areas (41.0%). As illustrated by Figure 2-4, housing units within the study area are generally located in the northern portion of the study area, west of downtown Yuma.

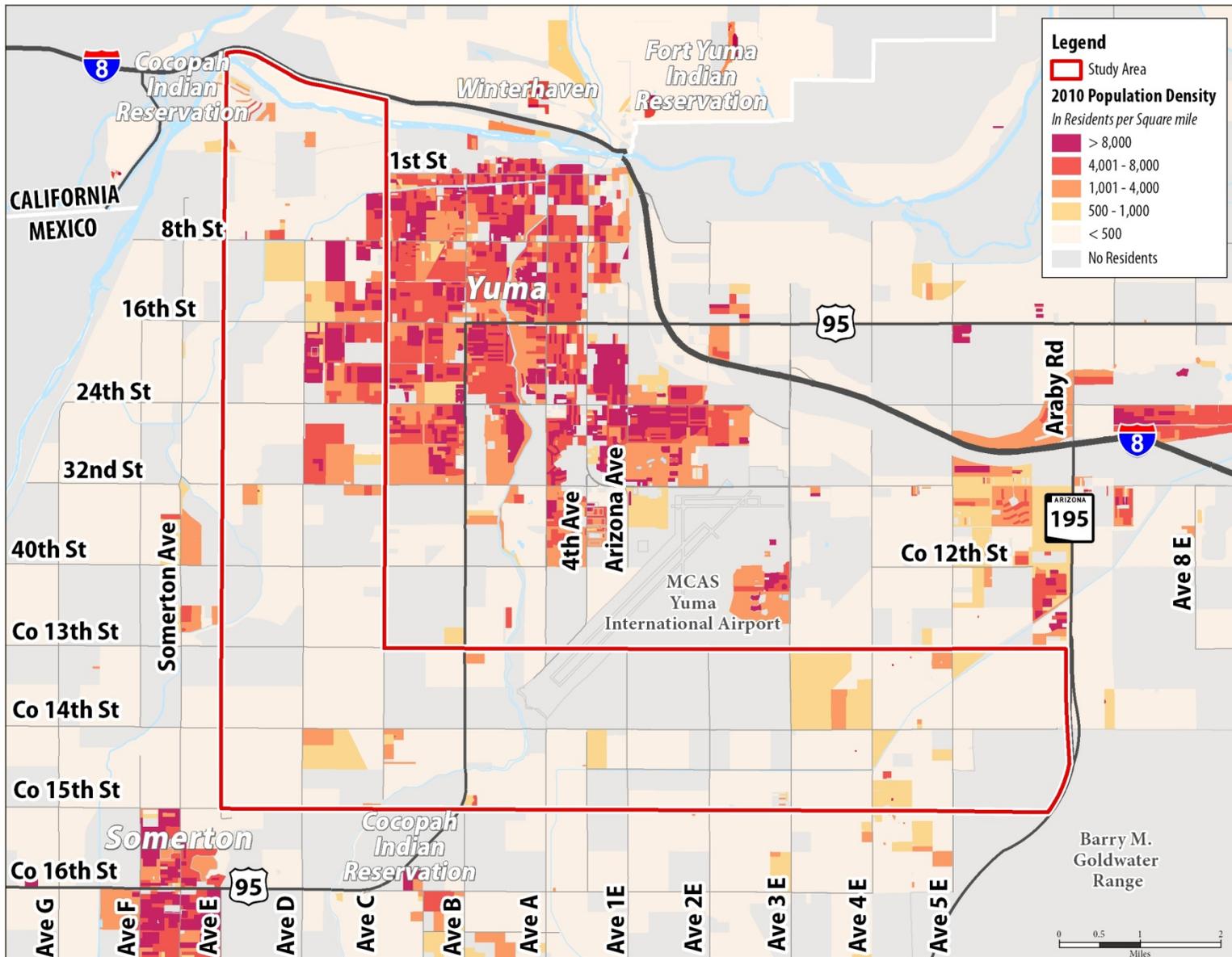
In Yuma County, there are 87,850 housing units of which only 26.3% are occupied. The Greater Yuma Area is generally a destination for seasonal visitors and workers and 70.7% of this vacancy is due to migratory workers, or seasonal and recreational users. However, less than 15% of housing units are vacant within the study area.

It can be noted that 69.1% of the Cocopah Indian Reservation's housing units are located within the study area and of those tribal dwelling units, 70.8% are vacant.

Table 2-5: Housing Occupancy Status within the Study Area

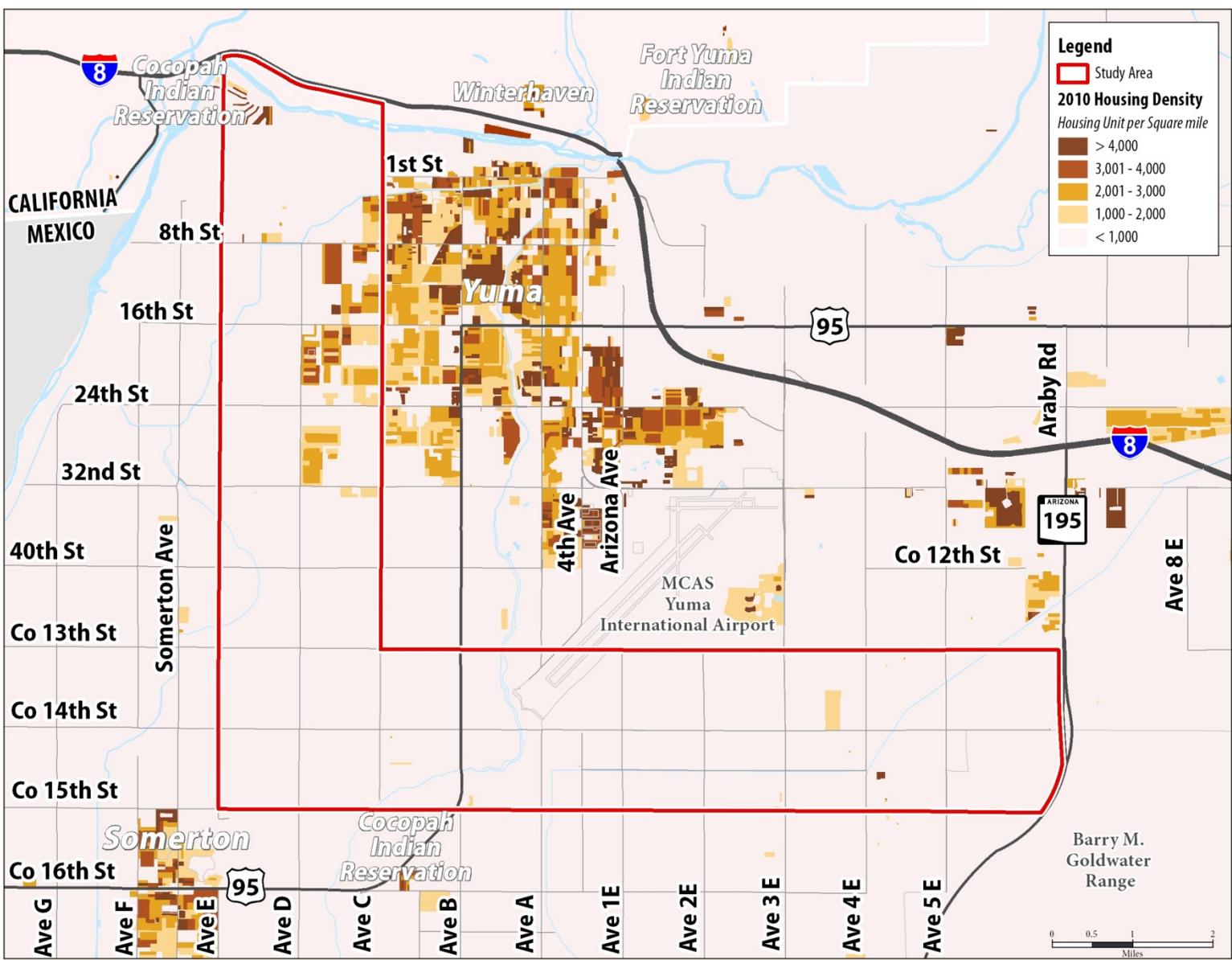
Jurisdiction	Total Housing Units			Vacant Housing	
	Housing in Study Area	Percent of Jurisdiction's Housing	Percent of Total Study Area's Housing	Vacant in Study Area	Percent of Vacant Housing
City of Somerton	46	1.1%	0.8%	4	8.7%
City of Yuma	2,802	7.3%	49.1%	202	7.2%
Cocopah Indian Reservation	520	69.1%	9.1%	368	70.8%
Fort Yuma Indian Reservation	5	0.6%	0.1%	0	0.0%
Unincorporated Area	2,336	6.5%	41.0%	248	10.6%
All Jurisdictions	5,704	6.5%*	100.0%	822	14.4%
* Compared to Housing in Yuma County Source: 2010 U.S. Census					

Figure 2-3: Population Density



Source: 2010 U.S. Census – By Census Blocks

Figure 2-4: Housing Density



Source: 2010 U.S. Census – By Census Blocks



2.2.4. Employment and Activity Centers

The majority of employment and activities in Yuma County are located in the southwestern portion of the county, specifically in the Cities of Yuma, San Luis, and Somerton. Activities and employment sectors are quite diverse in the vicinity of the study area. However, some characteristics such as the climate, topographic relief, and rural land use specific to southwestern Yuma County make this region particularly suitable for certain industries such as agriculture, tourism, and military activities.

Main Industries in the Vicinity of the Study Area

Southwestern Yuma County is a winter destination for an estimated 90,000 seasonal residents and visitors. Therefore, the tourism industry has a significant seasonal impact on the Greater Yuma area, particularly in the hospitality and food services sectors. Local streets are impacted as well, not only because of increased traffic, but also because many of these temporary residents drive large, heavy recreational vehicles (RVs) often with companion vehicles being towed behind.

Yuma County's agriculture industry is primarily dedicated to citrus, lettuce, and winter vegetable crops, along with meat and dairy production. Several major growers have plants and processing facilities in the region.

In addition to tourism and agricultural activities, two military bases (the MCAS-Yuma and the U.S. Army Yuma Proving Ground) are among the county's principal employment centers. Part of the MCAS-Yuma is located within the study area, in the City of Yuma. The total number of people working on the MCAS-Yuma base is 6,599. Including families and dependents, there are 14,248 people living on the base. This facility hosts military flight training and temporary military events, and throughout the year nearly 15,500 military personnel arrive in Yuma for an average three week stay to train.

MCAS-Yuma has expressed concerns with development along the future Yuma Expressway east of SR 195. Although this is outside of the study area it is important to note that development along the future Yuma Expressway could result in encroachment upon the Barry M. Goldwater Range. Within the Yuma Expressway study area MCAS-Yuma has concerns with development in the area of Avenue A and County 14th Street. There are several airfield safety surfaces located off the end of the MCAS-Yuma runway that need to be considered during the alternative analysis and planning for any future commercial/residential development.

Tertiary Activities

Tertiary employment activities are also present in the study area, and due to the influx of elderly residents during the winter months, these activities are often geared towards this demographic group. They include healthcare, retail, real estate, administrative services, senior services, as well as food and hospitality. Public administration and education represent additional tertiary activities in the area. As shown in Figure 2-5 these services are primarily located in the downtowns of Yuma and Somerton.



Significant commercial developments have also occurred over the past decades in these cities. Numerous car dealerships and retail centers are located along 32nd Street in the City of Yuma. Supermarkets and various small shopping and business centers can be found along 4th Avenue. In response to residential development, several neighborhood commercial centers have been built in these urbanized areas. The two newest commercial developments are the Yuma Palms regional shopping center located near I-8 and US 95 and the Cielo Verde commercial center located at Avenue 8E and 32nd Street.

Major Employment Locations in the Study Area

Table 2-6 identifies the largest employers that have one main employment site in the vicinity of the study area, based on the number of employees. The two major employers in the vicinity of the study area are the MCAS-Yuma and the Yuma Regional Medical Center.

Table 2-6: Major Employers in the Vicinity of the Study Area

Employer - With More than 300 Employees	Employees	Activity
MCAS-Yuma	6,599 ¹	Military
Yuma Regional Medical Center	2,080 ²	HealthCare
City of Yuma	1,388 ²	Government
Yuma County	1,350 ²	Government
US Border Patrol	920 ²	Government
Quechan Paradise Casino	800 ³	Casino
Arizona State Prison Complex Yuma	755 ³	Government
Arizona Western College	350 full-time; 657 part-time and student workers ⁴	Education
Datepac	500 ³	Agribusiness
Skyview Cooling Company	500 ³	Agribusiness
Wal-Mart - Avenue B	404 ³	Retail
Shaw Industries	358 ³	Manufacturing
Wal-Mart - Pacific Avenue	350 ³	Retail
Wal-Mart - Foothills	300 ³	Retail
Wal-Mart - San Luis	300 ³	Retail
Cocopah Bingo & Casino	300 ³	Casino
Grower's Company	260-300 ³	Agribusiness
Sources: 1. City of Yuma 2010 Comprehensive Annual Financial Report; MCAS-Yuma Website 2. Yuma County Chamber of Commerce 3. Greater Yuma Economic Development Corporation 4. Arizona Western College		

Activity Locations within the Study Area

As illustrated in Figure 2-5 and Figure 2-6, there are limited numbers of employment locations within the study area, and the employment density is generally less than 50 jobs per square mile. Higher employment densities can be found in downtown Yuma, at the Yuma desalting



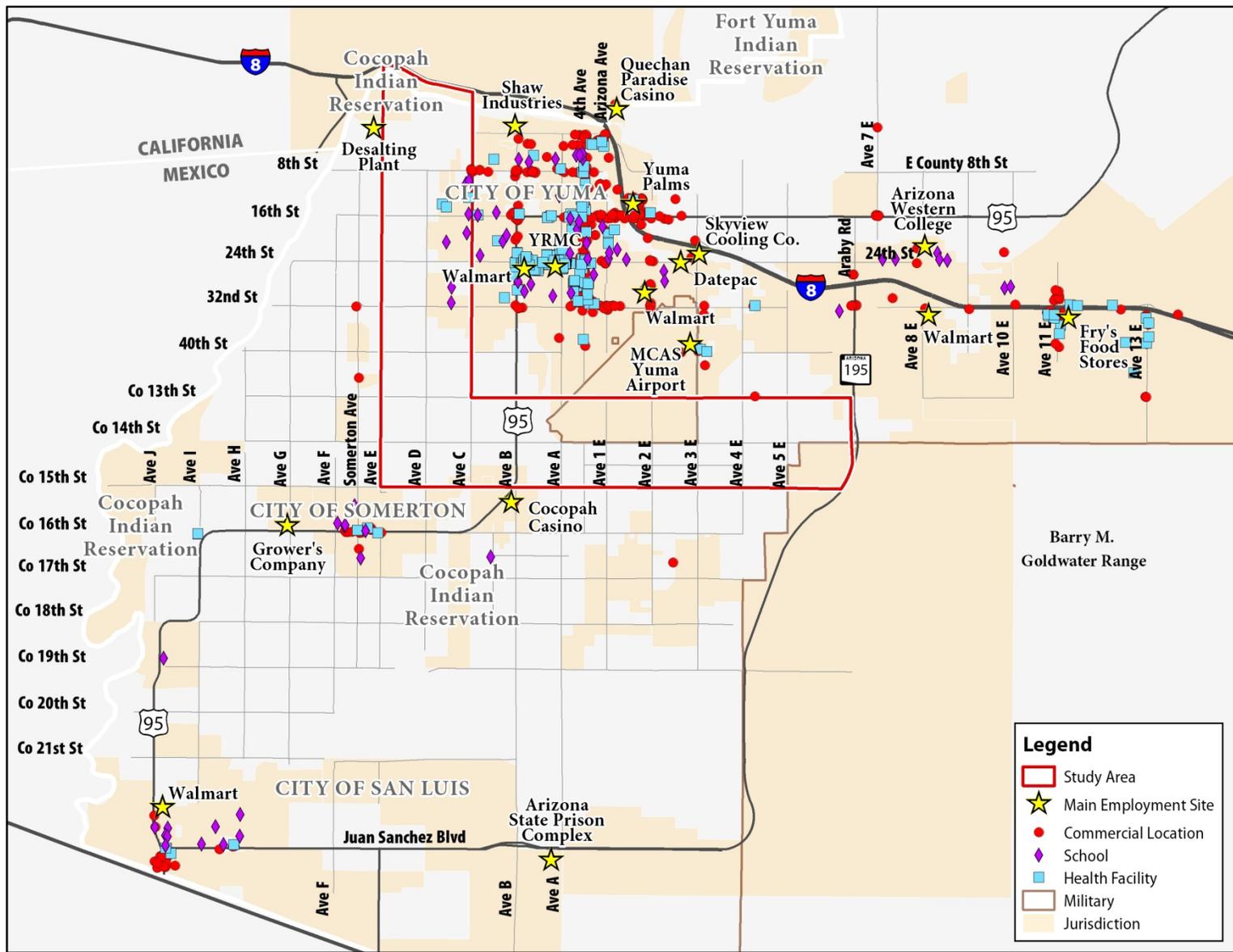
plant, and at the Arizona Public Service (APS) Yucca plant, as well as south of County 14th Street, between Avenue B and Avenue 1E.

The only businesses, health facilities and schools within the study area are located in the City of Yuma. They include:

- 2 restaurants,
- 2 gas stations,
- 3 health facilities or care homes, and
- 7 schools.

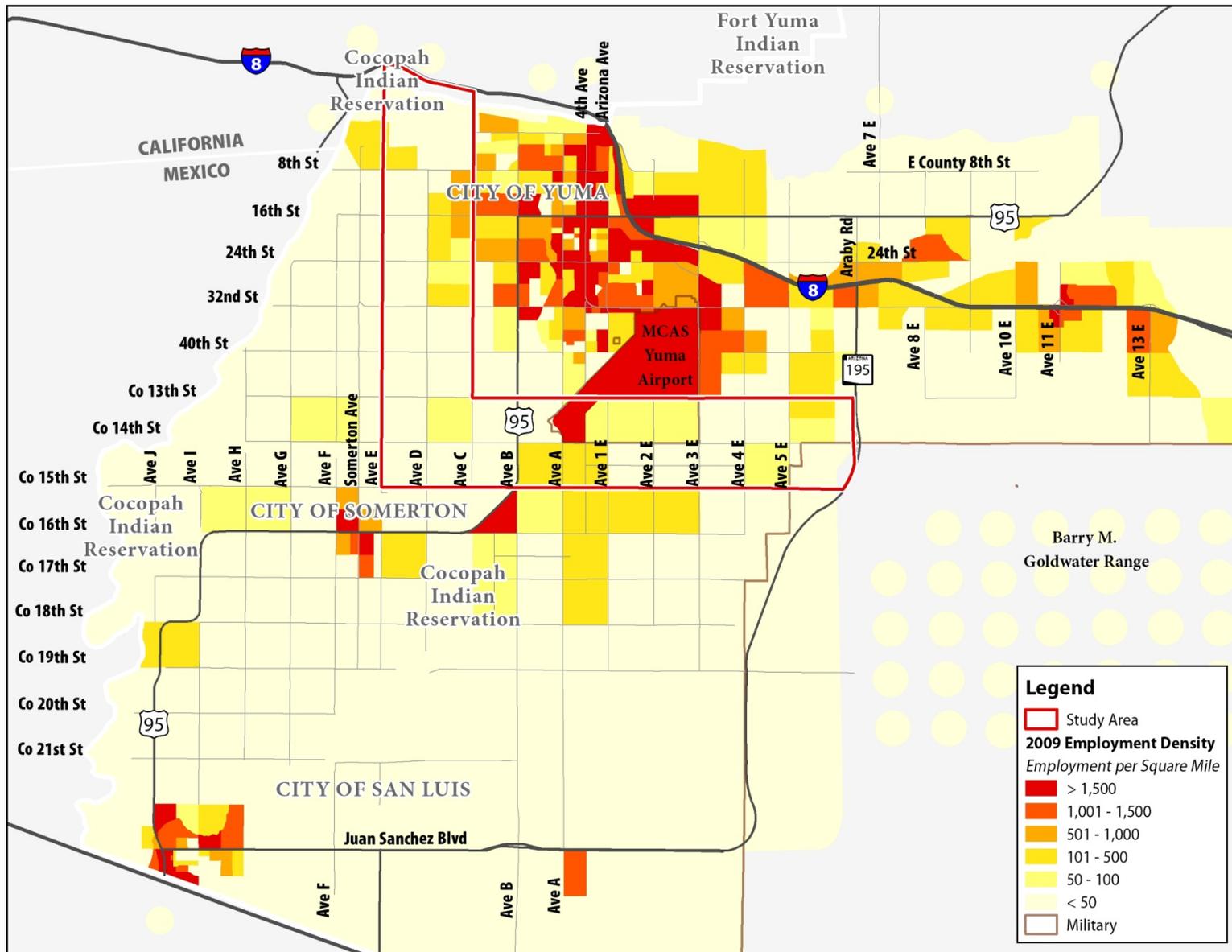
Portions of the MCAS-Yuma and Yuma International Airport are also located within the study area. Other major employment sites are located in close vicinity of the study area, including the Cocopah Casino and the Yuma desalting plant.

Figure 2-5: Main Employment Sites, Schools, Businesses, and Health Facilities



Source: YMPO, 2010 and Table 2-6 Sources

Figure 2-6: Employment Densities



Source: 2010 RTP Model – By TAZ



2.2.5. Commuting to Work

According to the 2010 U.S. Census data, within the study area, as well as within Yuma County, the primary transportation mode used for commuting is driving alone in a car, van, or truck. Within the study area, 76.2% of employed people drive alone to get to work, while 12.7% of those with a job carpool with others to get to their workplace. The third most used transportation mode within the study area is walking, with 4.1% of people walking to work. About the same percentage of people within the Yuma Expressway study area work at home (3.8%). The remaining workers use public transit or other transportation means such as taxicabs.

2.3. Existing Topographic Features and Utilities

2.3.1. Topography

The study area is located in the Yuma Valley. This region has relatively flat topography making it suitable for military, aviation, and agricultural activities. Elevations generally range between 110-ft and 210-ft. Along Avenue D elevations decrease from north to south and along County 14th Street elevations increase from west to east. However, southwestern Yuma County is surrounded by several mountain ranges, such as:

- The Gila Mountains, located east of the study area in Yuma County and crossing Fortuna Foothills. This 26-mile long mountain range has its highest point at 3,156 feet.
- The Laguna Mountain Range, located north of Fortuna Foothills in Yuma County. The highest point in these mountains is Boot Peak at 1,080 feet.
- The Chocolate Mountains, located north of the study area in California. The highest point along this 60-mile long mountain range is Mount Barrow at 2,475 feet.
- The Cargo Muchacho Mountains, located northwest of the study area in California. The highest point has been measured at 827 feet.

Pilot Knob rises to an elevation of 876-ft and is the nearest mountain to the study area. It is connected to the Cargo Muchacho Mountains located in Imperial County, at the border corner between Arizona, California, and Mexico.

The Barry M. Goldwater Range is located in the Yuma Desert region, south of the City of Yuma. Several sand hills and dunes are located in the Yuma Desert region, as well as in Imperial County.

2.3.2. Hydrology

Rivers

The study area is located in the Colorado River basin, which extends from Wyoming to Mexico. As illustrated in Figure 1-2 and Figure 2-7, the Colorado River runs through the northern region of the study area and crosses the Yuma Expressway study area along the border between California and Yuma County. East of the study area, the Gila River is confluent with the Colorado River. No washes are present in the study area.



Irrigation Facilities

In order to sustain the year-round agricultural activities of Imperial County and Yuma County, irrigation infrastructure diverts the Colorado River's flow, through the use of dams, as it runs from Colorado to the Gulf of California (Sea of Cortez). Imperial Dam, located about 18 miles northeast of the study area, diverts most of the Colorado River's flow into two irrigation canals: the All-American Canal irrigating the Imperial Valley in California and the Gila Gravity Main Canal irrigating southwestern Arizona.

A system of canals was developed to provide irrigation in southwestern Yuma County, which is shown in a map of hydrology features of southwestern Yuma County in Appendix A. Several canals run through the Yuma Expressway study area, shown in Figure 2-7. As shown in Figure 2-7 and in Appendix A, they include the Yuma Main Canal that diverges into the West Main Canal and the East Main Canal, which both flow south. Secondary canals such as the A Canal and the Central Canal also run through the study area. Several drains and laterals also support the irrigation system in the study area. In addition to the various canals and irrigation facilities, there is an eight inch diameter USBR pipeline that carries sludge from the USBR Desalting Plant to a facility south of the study area. The pipeline is located underneath the existing Avenue D and County 14th Street from County 10th Street to approximately Avenue B ½ .

Wells

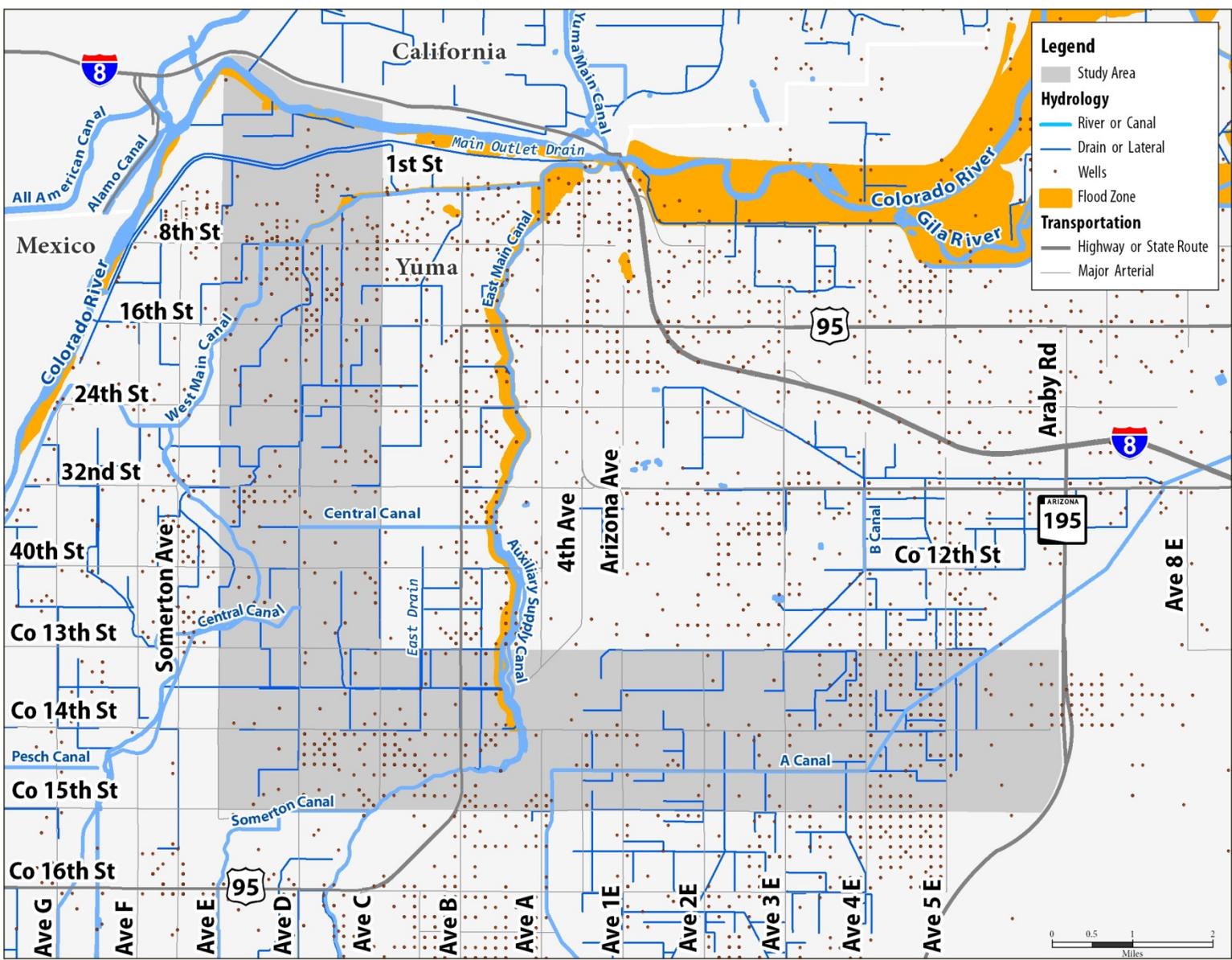
As illustrated in Figure 2-7, 1,089 wells are located within the Yuma Expressway study area. Their geographic distribution is relatively spread throughout the study area. However, data received from the Arizona Department of Water Resources does not distinguish between active or inactive wells.

Floodplains

Several portions of the study area are subject to flooding as illustrated in Figure 2-7. Potential flood areas are located along the Colorado River and the Gila River, as well as along the East and West Main Canals.

Less than 1% of the Yuma Expressway study area lies within a flood hazard zone.

Figure 2-7: Hydrology and Irrigation Features



Source: Arizona Department of Water Resources, 2012



2.3.3. Utilities and Drainage

The Yuma Expressway study area is located within urban residential areas, as well as military and airport facilities. These urban developments require the establishment of utilities and drainage infrastructures.

Domestic Water Distribution System

The Colorado River is the primary source of water for the study area. Its water is diverted to the study area through several facilities, such as the All American Canal and Yuma County Water Users Association facilities, including the Yuma Main Canal. Domestic water to be distributed throughout the study area is transported to the Yuma Main Street Water Treatment Plant in downtown Yuma. This facility is located northeast of the study area, on 1st Street and Main Street.

Along the Yuma Expressway study area, the demand for domestic water is primarily driven by residential use, which represents 60% of the demand in the City of Yuma and 93% of the demand in the City of Somerton.

In the City of Somerton, groundwater is pumped from three wells and the City is not interconnected to any other systems, as confirmed by the Arizona Department of Water Resources (May 2012). There are no major tribal water utilities on the Cocopah Indian Reservation.

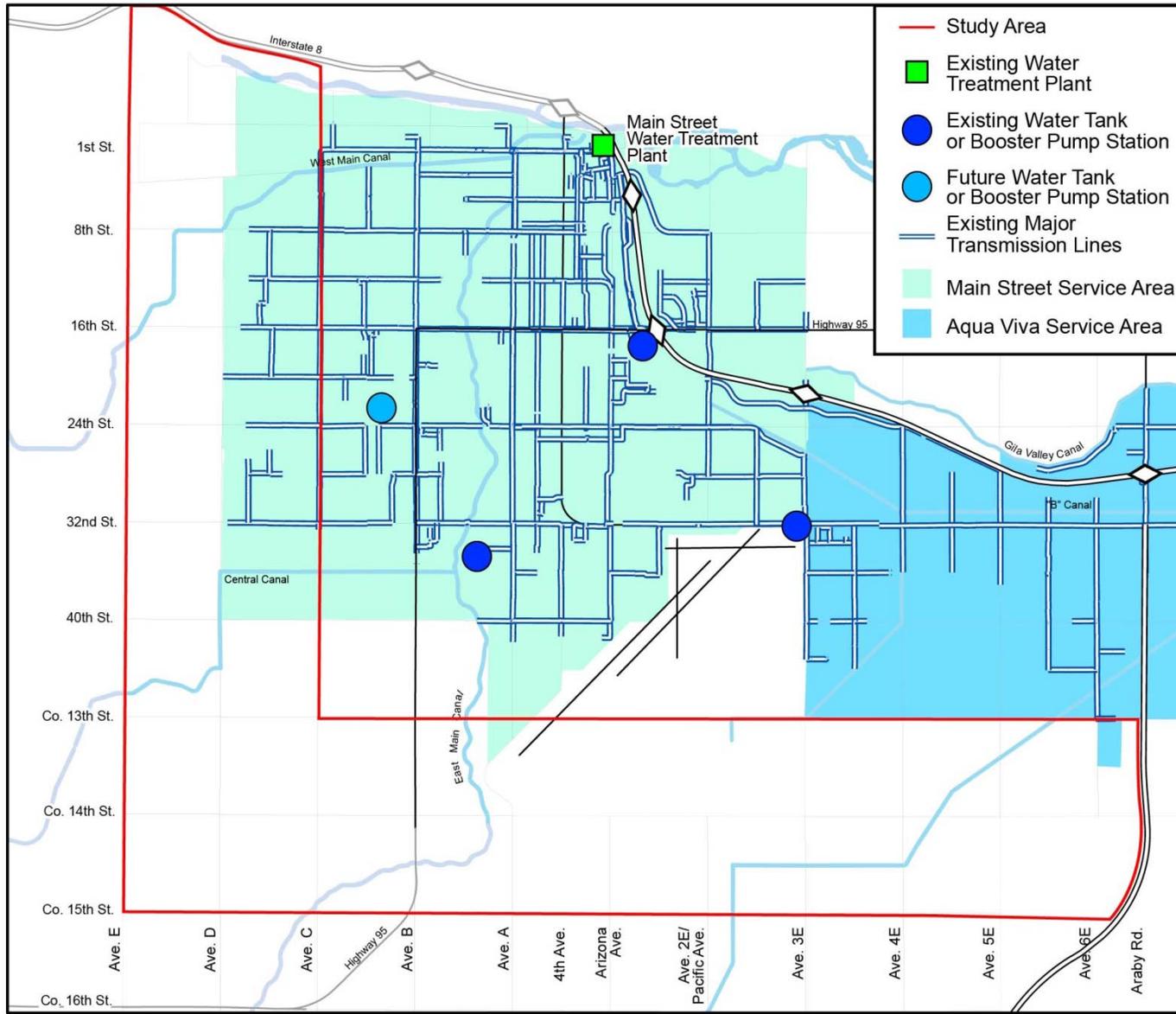
The Bureau of Reclamation's Yuma desalting plant is located west of the Yuma Expressway study area, north of Avenue E. This facility was constructed to desalt and salvage drainage water for inclusion in water deliveries to Mexico, in the event of a water shortage from the Colorado River. As stated by the Bureau of Reclamation (May 2012), the plant has not operated due to surplus in the normal water supply conditions of the Colorado River.

Within the Yuma Expressway study area there are no major domestic water distribution features, with the exception of a portion of the Yuma desalting plant, and transmission lines in downtown Yuma, as shown on Figure 2-8. In the City of Yuma¹, within the study area, most domestic water distribution utilities are designed to serve residential neighborhoods with typical pipe diameters of 6" to 12".

There is a 12" diameter PVC water distribution line within Avenue D, from 32nd Street to 24th Street. No data was found concerning the domestic water distribution system located on County 14th Street.

¹ The only detailed information concerning utilities and drainages available for this study are those managed by the City of Yuma. The utilities and drainage features described below are based on the 2005 Water, Sewer & Storm Atlas from the City of Yuma Department of Public Works.

Figure 2-8: City of Yuma Domestic Water Distribution Facilities



Source: City of Yuma 2012 General Plan



Sanitary Sewer Collection System

A number of wastewater treatment plants treat sewage in the Greater Yuma area. The largest is the Figueroa Avenue Water Pollution Control Facility, located northeast of the study area, near 1st Street and Figueroa Avenue. Additionally, a number of smaller treatment plants have been built to meet individual development needs in the County.

As illustrated in Figure 2-9, there are no major sanitary sewer collection facilities within the Yuma Expressway study area. Within the City of Yuma, most of these utilities serve neighborhoods. Typical pipe diameters range from 8" to 42" along the study area. To face the rapid development of the Greater Yuma area, private sewer facilities have also been installed in certain neighborhoods. Near downtown Yuma, those systems are generally connected to the network operated by the City of Yuma.

There are no sanitary sewer collection features on Avenue D within the study area, and no data was found regarding the sanitary sewer collection system located on County 14th Street.

Storm Water Collection System

In the Greater Yuma area, storm water control is accomplished through a network of basins providing temporary holding of water for discharge into the Colorado River. Discharge into the Colorado River can be through direct storm sewer outfalls or indirectly to a canal or drain, such as the West Main Canal, with eventual discharge into the Colorado River. As illustrated on Figure 2-10, three major basins are located within the Yuma Expressway study area:

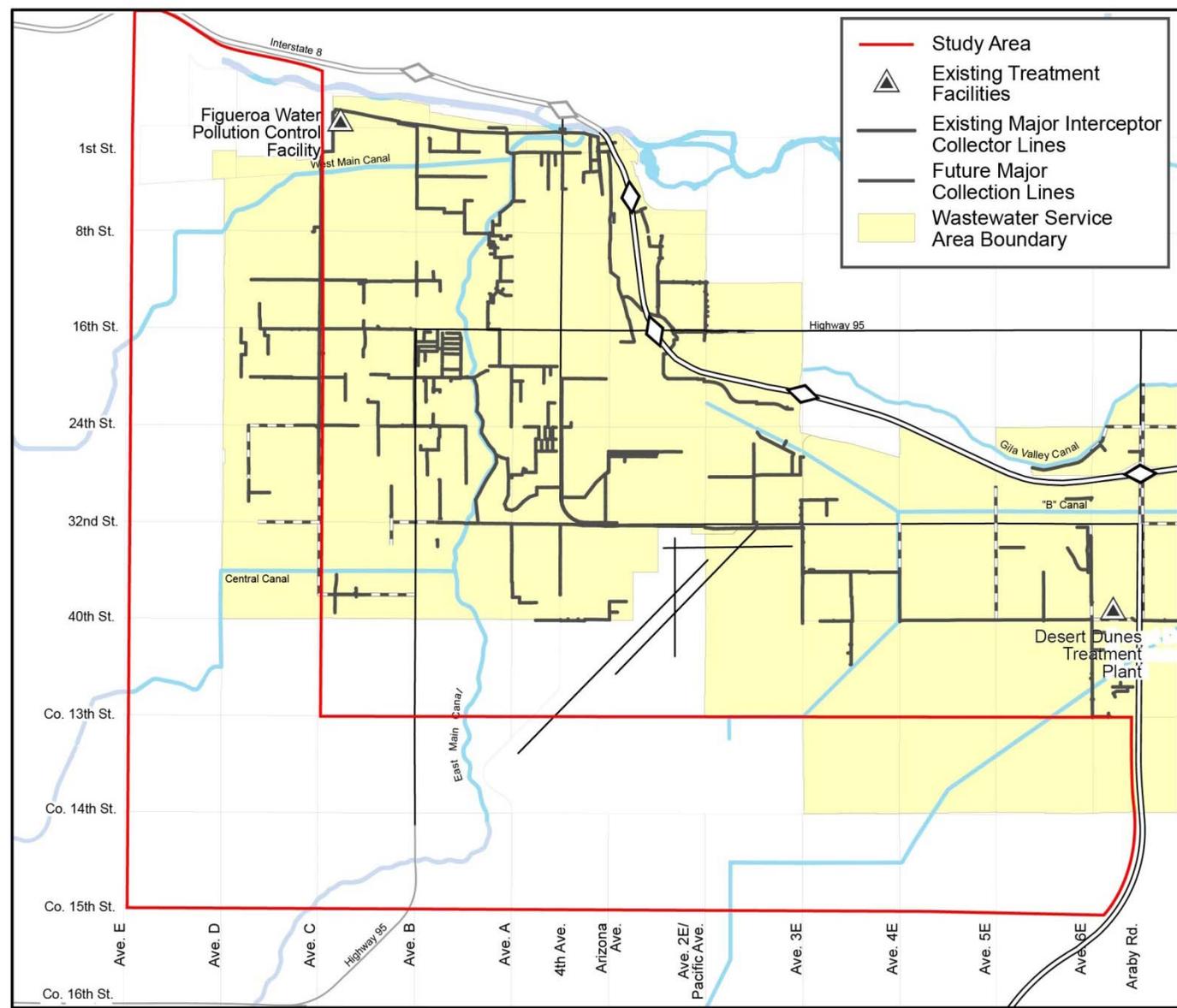
- The Sierra Sunset No. 5 Basin (#1),
- The Cibola Heights 1 Basin (#2), and
- The Valle Serreno Basin (#5).

The primary mode for discharge of storm water within the Yuma Valley system is the U.S. Bureau of Reclamation Yuma Mesa Conduit. This 7-mile, 66-inch pipeline is located primarily along Avenue B½ and transports water pumped from groundwater wells for discharge to the Colorado River.

As stated in the City of Yuma 2012 General Plan, three other pipelines in the Yuma Valley provide storm water conveyance to the Colorado River. These are located within the alignments of 19th Avenue, 17th Avenue and Avenue C.

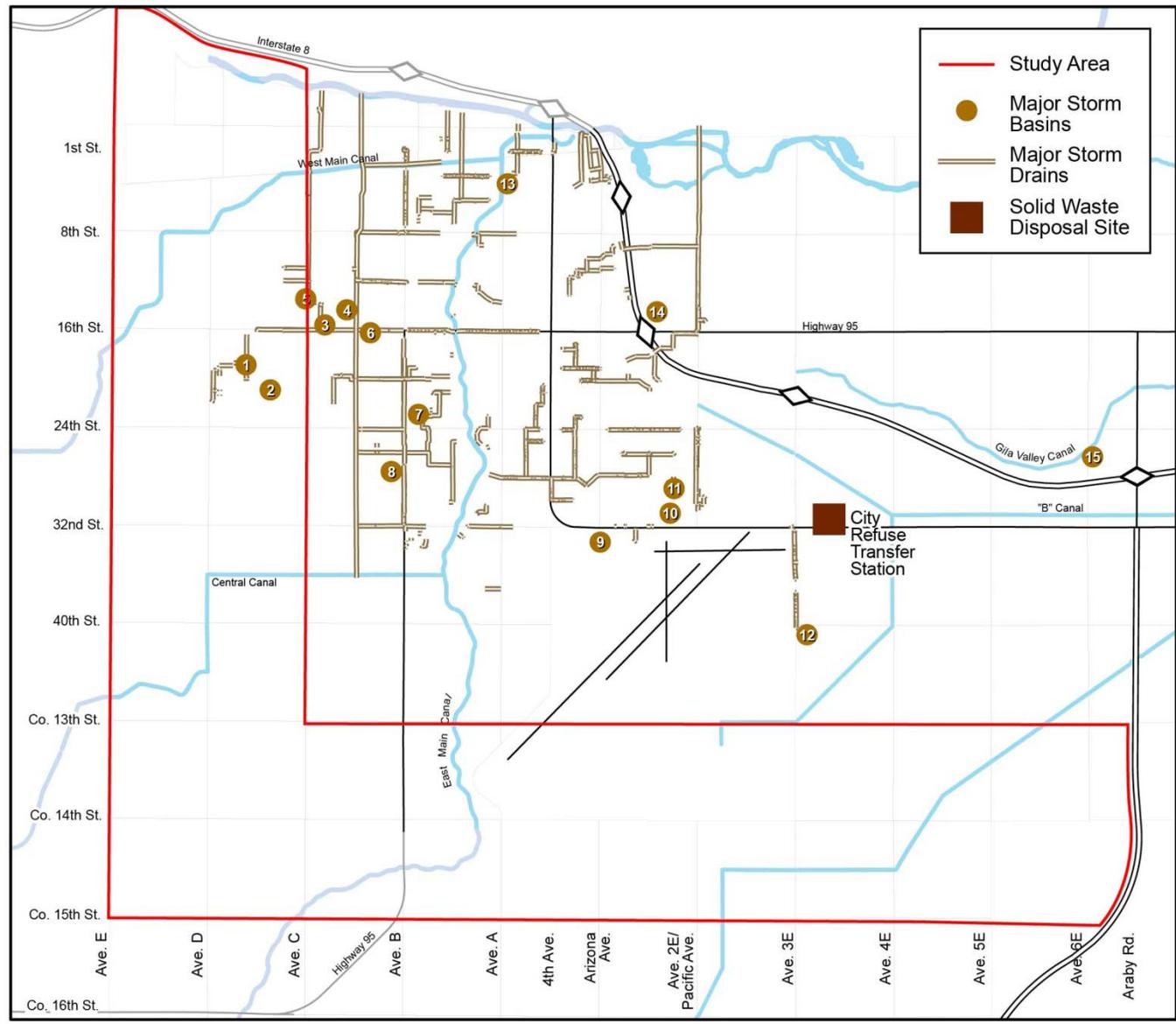
Within the Yuma Expressway study area, catch basins and other collection infrastructure exists on some roadways such as Avenue C, as well as on certain segments of 8th Street or 16th Street. However, there are generally no storm water collection features installed within the Yuma Expressway study area.

Figure 2-9: City of Yuma Waste Water Facilities



Source: City of Yuma 2012 General Plan

Figure 2-10: City of Yuma Storm Water Facilities



Source: City of Yuma 2012 General Plan



Private Utilities

In Yuma County, private utility companies provide electricity, telephone service, cable access, satellite television, internet service, and natural gas.

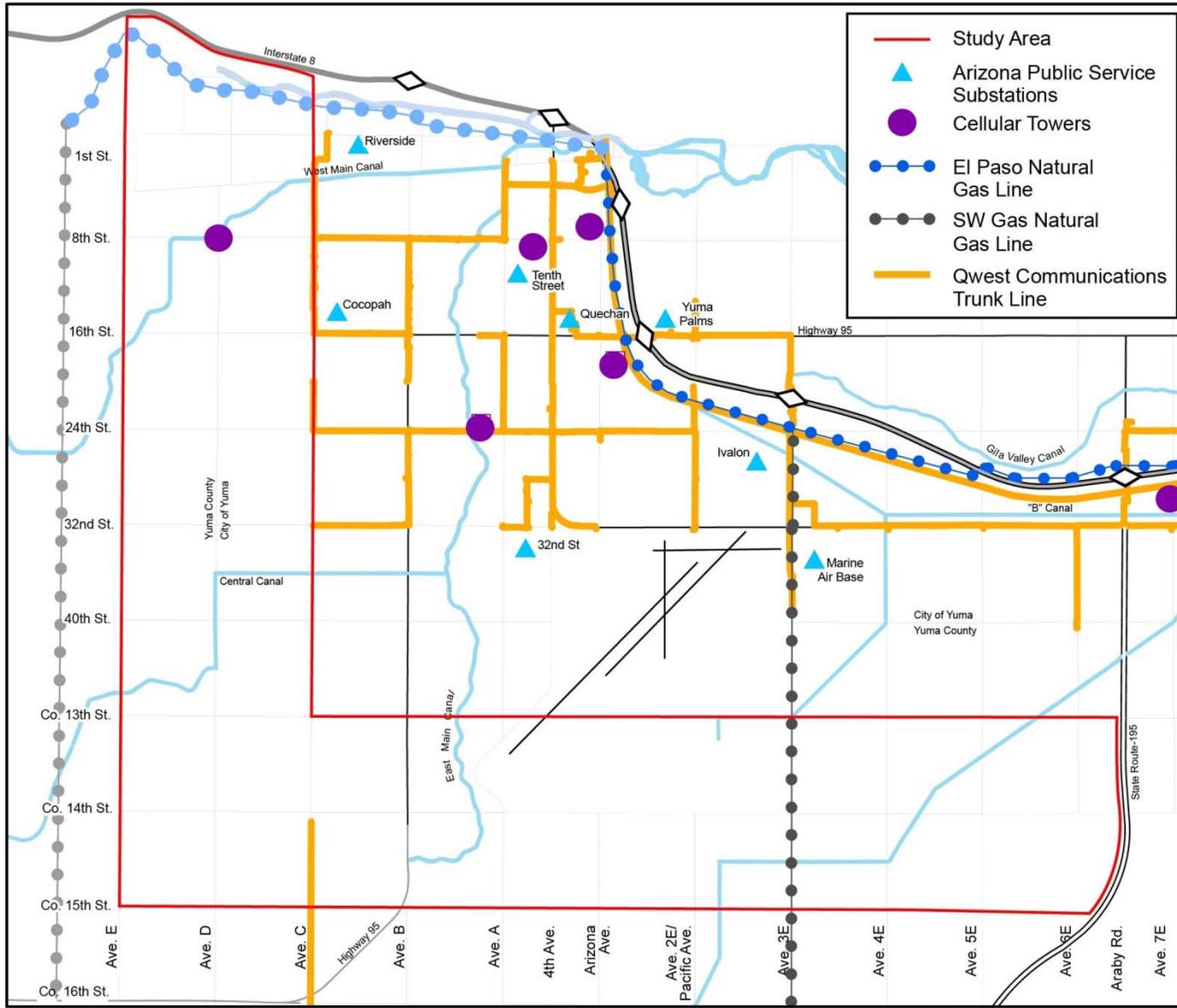
Arizona Public Service (APS) provides power, including solar power technology to most areas of the southwestern County. Two APS substations are located east of the Yuma Expressway study area, near 1st Street and Avenue C and near 16th Street and Avenue C, as shown in Figure 2-11.

APS also operates the natural gas-fueled Yucca Power Plant located east of the study area, on Somerton Avenue. The plant provides power on an as needed basis, particularly during the summer months (APS 2007). As stated in the City of Yuma 2012 General Plan, in the future this power plant will require additional natural gas pipeline infrastructure from outside the immediate area. The Yuma Expressway study area crosses the El Paso natural gas line that runs along the Colorado River, north of the study area, as well as the Southwest Gas natural gas line that runs on Avenue 3E.

Several communication trunk lines are located in the vicinity of the Yuma Expressway study area as shown in Figure 2-11. Some of those run along Avenue C and are located within the study area or along its northeastern boundary.

One cellular tower is located within the Yuma Expressway study area at the intersection of Avenue D and 8th Street.

Figure 2-11: Private Utilities



Source: City of Yuma 2012 General Plan



2.4. Existing Transportation Infrastructure

2.4.1. Roadway Network

Functional Classification

As illustrated in Figure 2-12, the roadway network in the study area is mainly comprised of rural major collectors, rural minor collectors and local roads. Other functional classifications found in the study area include:

- A rural principal arterial, US 95 connecting the City of Yuma with the Cities of San Luis, Somerton, and extending north to Las Vegas, Nevada,
- Rural or urban minor arterials, such as 8th Street and Avenue 3E, and
- An urban collector, on a segment of Avenue A.

Some important roadways are located along the edges of the study area. They include the rural interstate I-8, connecting Yuma County with Imperial County in California, and the rural minor arterial SR 195, connecting the City of San Luis to I-8 in the City of Yuma.

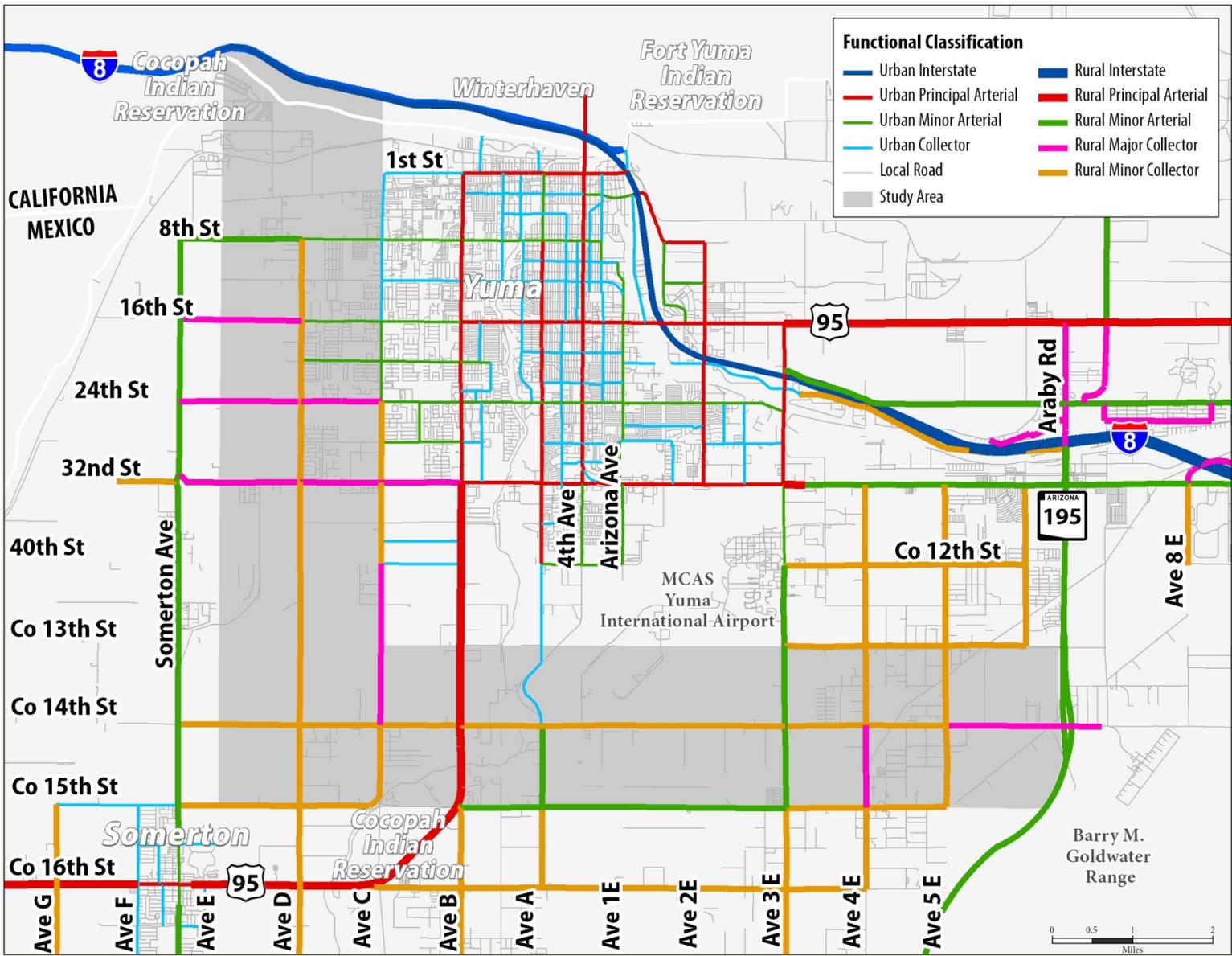
Avenue D and County 14th Street, which constitute the main axes for the Yuma Expressway, are both rural minor collectors throughout most of the study area. County 14th Street is classified as a rural major collector between Avenue 5E and SR 195. The northern area of the study area, located north of 8th Street is only serviced by local streets.

Table 2-7 details the roadway functional classification and mileage within the Yuma Expressway study area.

Table 2-7: Functional Classification and Mileage within the Study Area

Functional Classification	Mileage in the Study Area
Urban Interstate	-
Urban Principal Arterial	-
Urban Minor Arterial	3.0
Urban Collector	1.2
Rural Interstate	-
Rural Principal Arterial	2.0
Rural Minor Arterial	4.0
Rural Major Collector	8.4
Rural Minor Collector	20.1
Local Road	134.2
Total	172.9
Note: Roadways located on the boundary of the study area were not included.	
Source: 2010 Regional Transportation Plan Model	

Figure 2-12: Functional Roadway Classifications



Source: 2010 RTP Model



Roadway Lane Configuration

Figure 2-13 illustrates the number of lanes on each road in the study area. Within the study area, most roadways have 2 lanes, except some segments of 16th Street, 32nd Street, and US 95.

In the vicinity of the study area, highways, principal arterials, minor arterials and some major collectors have 4 lanes. Some roadway segments have 5 or 6 lanes, such as 32nd Street between 4th Avenue and Avenue 3E, and Avenue 3E between 32nd Street and the MCAS-Yuma entrance. Most of the local streets not included in the transportation model used for this analysis have 2 lanes.

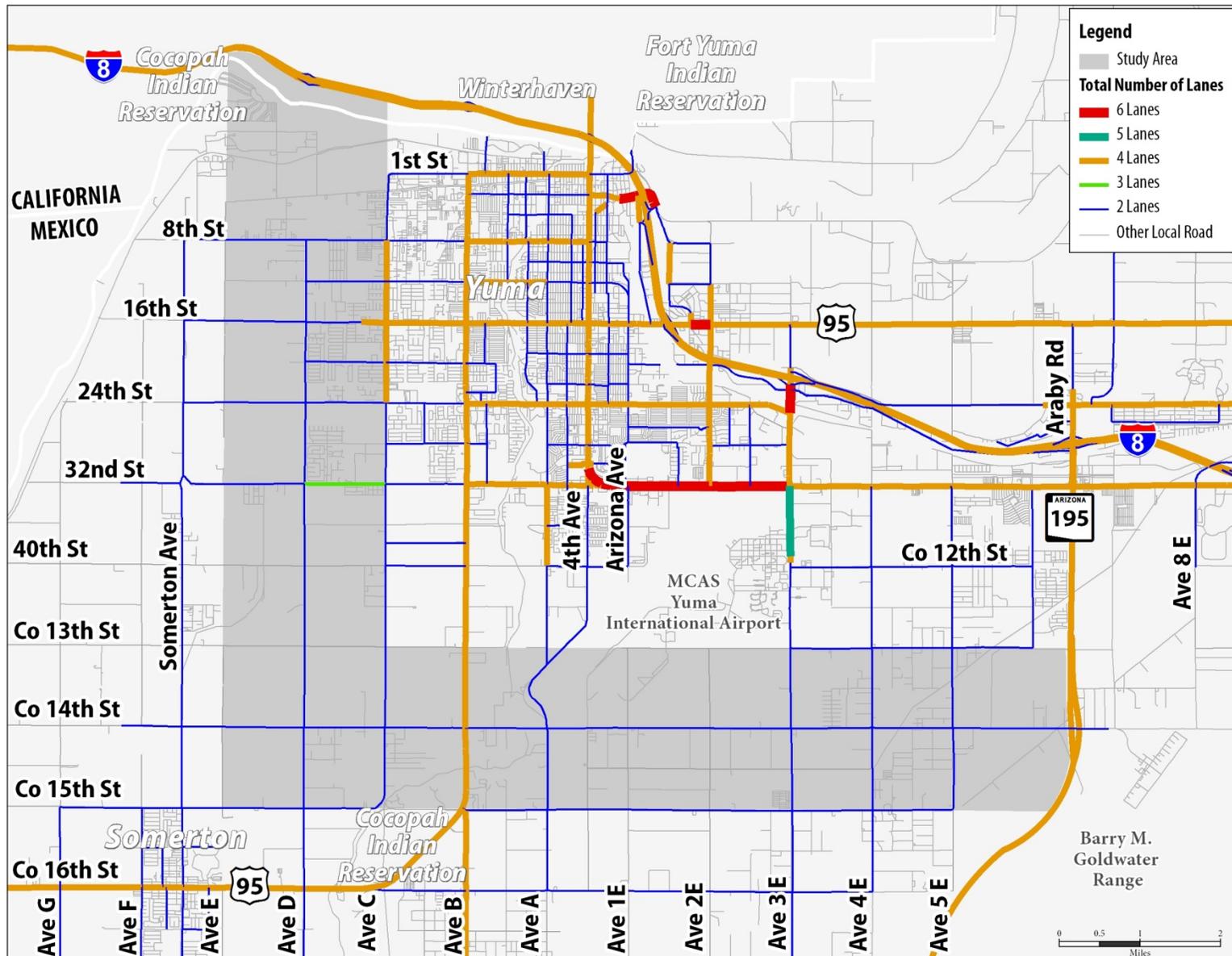
Speed Limits

In the vicinity of the study area, posted speed limits range from 20 miles per hour (mph) to 65 mph. Urban speeds lower than 35 mph are mainly found in the core areas of downtown Yuma and downtown Somerton. Highways and arterials such as US 95, I-8, SR 195, and 32nd Street have the highest speed limits.

Within the Yuma Expressway study area, rural major and minor collectors generally have posted speeds equal to 50 mph. Other speed limits found within the study area are 40 mph or less in downtown Yuma and 55 mph on US 95.

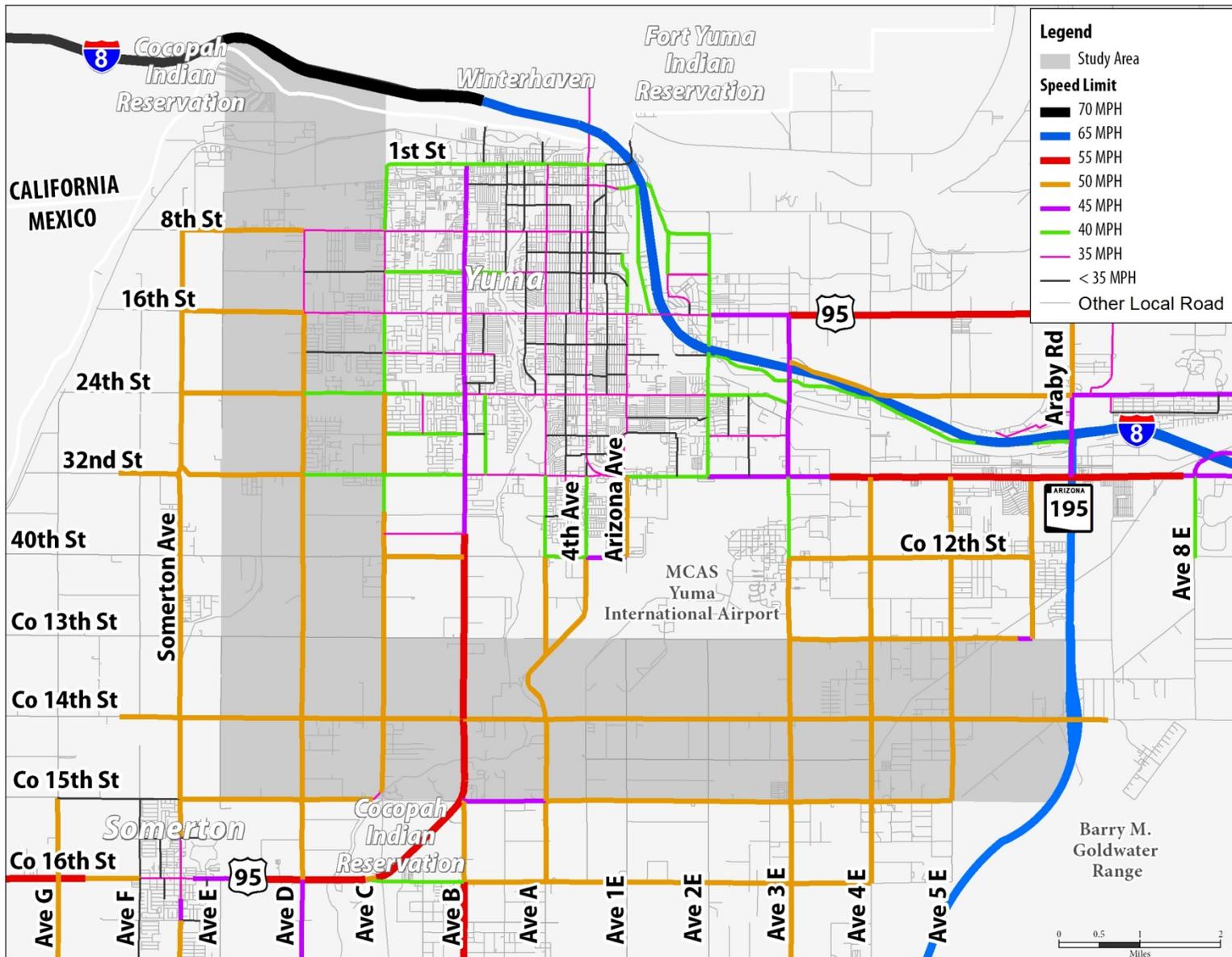
Figure 2-14 illustrates posted speed limits in the study area.

Figure 2-13: Number of Lanes



Source: 2010 RTP Model

Figure 2-14: Speed Limits



Source: 2010 RTP Model



Right-of-Way

Table 2-8 presents typical Right-of-Way (ROW) widths for each roadway functional classification within the Yuma Expressway study area. The higher classified roads generally have more ROW available than the lower classified roads. On Avenue D and County 14th Street, typical ROW width measured within the study area range from 33 feet to 88 feet.

Table 2-8: Right of Way Available for Typical Roadways within the Study Area

Functional Classification	ROW Width
Urban Minor Arterial	66 ft – 135 ft
Urban Collector	66 ft – 100 ft
Rural Principal Arterial	100 ft – 130 ft
Rural Minor Arterial	66 ft – 82 ft
Rural Major Collector	66 ft – 82 ft
Rural Minor Collector	33 ft – 100 ft
Local Street	20 ft – 66 ft
Source: Field Review, 2011	

Access Management Conditions

Within the study area, most roadway segments are 2-lane facilities without a median. Center two-way left turn lanes are provided for on US 95 and County 11th Street between Avenue D and Avenue C. All the major cross roads are connected with at-grade intersections. No specific access management such as right-in and right-out are implemented within the Yuma Expressway study area.

Traffic Control

Within the Yuma Expressway study area, the main traffic control types encountered are stop signs. Those stop signs are either two-way stops or four-way stops. As shown in Figure 2-15, there are 4 signalized intersections within the study area. Traffic signals are located on County 14th Street, at the intersections with US 95, Avenue A, Avenue 3E, and SR195. Table 2-9 presents traffic control types at major intersections within the study area.



Table 2-9: Traffic Control Type for Major Intersections within the Study Area

Route	Cross Road	Control Type
Avenue D	8 th Street	Stop Sign on Avenue D
Avenue D	16 th Street	Stop Sign on 16th Street
Avenue D	24 th Street	Stop Sign on Avenue D
Avenue D	32 nd Street	Stop Sign on Avenue D
County 14th Street	Avenue D	Four-way Stop Control
County 14th Street	Avenue C	Stop Sign on Avenue C
County 14th Street	US 95	Signal
County 14th Street	Avenue A	Signal
County 14th Street	Avenue 3E	Signal
County 14th Street	Avenue 4E	Stop Sign on Avenue 4E
County 14th Street	Avenue 5E	Stop Sign on Avenue 5E
County 14th Street	SR 195	Signal
Source: Field Review, 2011		

2.4.2. Traffic Counts

Traffic volumes along Avenue D and County 14th Street as well as the cross roads within the study area were obtained from the YMPO 2011 Average Annual Daily Traffic (AADT) and ADOT 2011 AADT archived in the Traffic Data Management System (TDMS). Table 2-10 summarizes the range of two-way average annual daily traffic volumes for the roadway sections within the study area. The daily traffic volumes are illustrated on Figure 2-15.

As shown in Table 2-10, Avenue D carries relatively low traffic volumes, 2,000 to 3,000 vehicles per day. The cross roads located east of Avenue D between 8th Street and 32nd Street exhibit higher traffic volumes compared to intersections on Avenue D. Avenue C north of 32nd Street carries 7,000 to 8,000 vehicles per day. The segment between 24th Street and 16th Street shows higher daily traffic at 12,000 to 13,000 vehicles per day.

Traffic volumes on County 14th Street range from 5,000 to 5,500 vehicles per day for most sections between US 95 and SR 195. SR 195 carries 2,500 to 3,500 vehicles per day where it crosses County 14th Street.

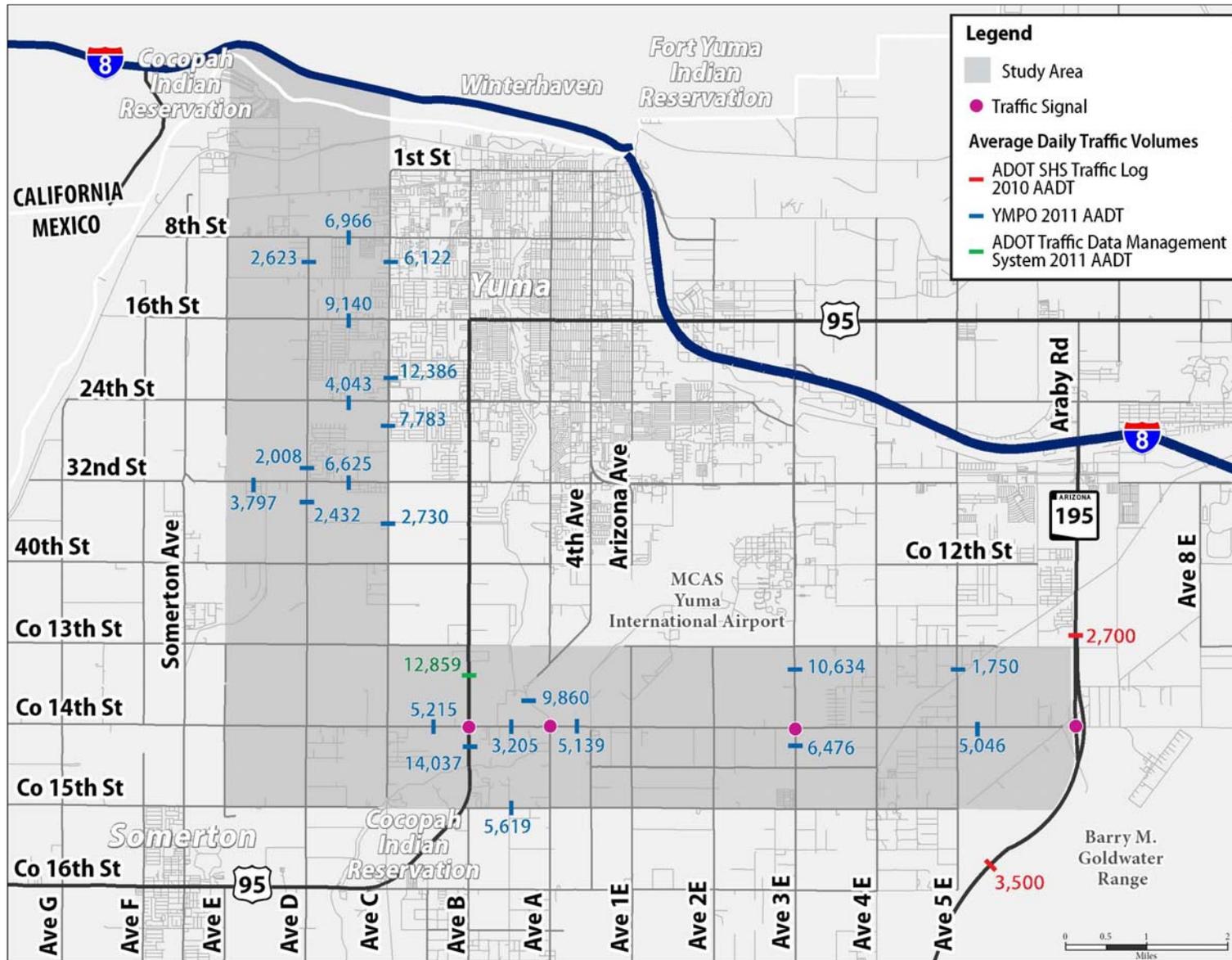
As the principal arterial, US 95 carries heavy traffic with 12,000 to 14,000 vehicles per day crossing County 14th Street. Avenue A north of County 14th Street also shows high traffic volumes with approximately 10,000 vehicles per day. The AADT volume for the northern section of Avenue 3E, between County 14th Street and County 13th Street is approximately 10,000 vehicles per day. South of County 14th Street, the AADT volumes on Avenue 3E range from 6,000 to 6,500 vehicles per day.



Table 2-10: Existing AADT Volumes in the Study Area

Route	Section	2011 AADT (in Vehicles per Day)
Avenue. D	8th Street – 40th Street	2,000-3,000
8th Street	East of Avenue D	7,000
16th Street	East of Avenue D	9,000-9,500
24th Street	East of Avenue D	4,000-4,500
32nd Street	East of Avenue D	6,500-7,000
32nd Street	West of Avenue D	3,500-4,000
Avenue C	South of 8th Street	6,000-6,500
Avenue C	North of 24th Street	12,000-13,000
Avenue C	South of 24th Street	7,500-8,000
Avenue C	South of 32nd Street	2,500-3,000
US 95	County 13th Street - County 15th Street	12,000-14,000
Avenue A	North of County 14th Street	10,000
Avenue 3E	North of County 14th Street	10,500-11,000
Avenue 3E	South of County 14th Street	6,000-6,500
County 14th Street	Avenue C – Avenue B	5,000-5,500
County 14th Street	Avenue B – Avenue A	3,000-3,500
County 14th Street	Avenue A – Avenue 1E	5,000-5,500
County 14th Street	Avenue 5E – SR 195	5,000-5,500
Source: YMPO 2011 Counts		

Figure 2-15: Average Daily Traffic Volumes and Signalized Intersections



2.4.3. Crash History

Crash data for Avenue D and County 14th Street within the study area, between November 1st, 2006 and November 30th, 2011, was provided by ADOT Multimodal Planning Division. The crash locations and year of occurrence are summarized in Table 2-11 and illustrated in Figure 2-17. A total of 216 crashes were reported on the main axes of the study area from 2007 to 2011. On average, about 43 crashes were reported on these streets each year. However, it can be noted that the number of crashes has generally diminished over the years.

Along Avenue D, data show a total of 70 reported crashes over the five-year period. 11 to 13 crashes were reported each year, except in 2007. Over the 5-year period, twice as many crashes were reported on County 14th Street, compared to Avenue D. Along County 14th Street, 146 crashes were reported within the study area from 2007 to 2011. 2008 shows the highest number of crashes on County 14th Street for the reported time period with 45 crashes. As shown in Figure 2-17, the safety at the intersection of County 14th Street and Avenue 3E is critical as 30 crashes of low severity occurred between 2007 and 2011. Other intersections with a high number of crashes between 2007 and 2011 include County 14th Street and Avenue A, County 14th Street and US 95, County 14th Street and Avenue D, Avenue D and 40th Street, Avenue D and 32nd Street, Avenue D and 16th Street, and Avenue D and 8th Street.

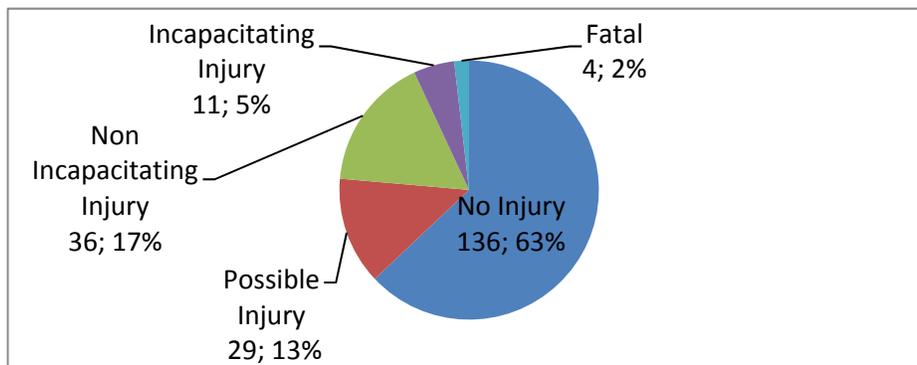
Table 2-11: Number of Crashes by Year in the Study Area

Route	2007	2008	2009	2010	2011	Total Over 5 Years
Avenue D	23	11	11	12	13	70
County 14th Street	35	45	22	27	17	146
Total	58	56	33	39	30	216

Source: ADOT Multimodal Planning Division, 2012

Figure 2-16 shows the number of crashes and their severity on Avenue D and County 14th Street between 2007 and 2011. The majority of crashes (63.0%) were non-injury crashes. Over the 5 years, there were 76 crashes with different levels of injury. 4 fatal crashes were reported, which represents 1.9% of all crashes. As shown in Figure 2-17, most crashes with fatal and incapacitating injuries occurred on Avenue D, County 14th Street, and County 15th Street within the study area.

Figure 2-16: Crash Summary by Injury Severity for Avenue D and County 14th Street

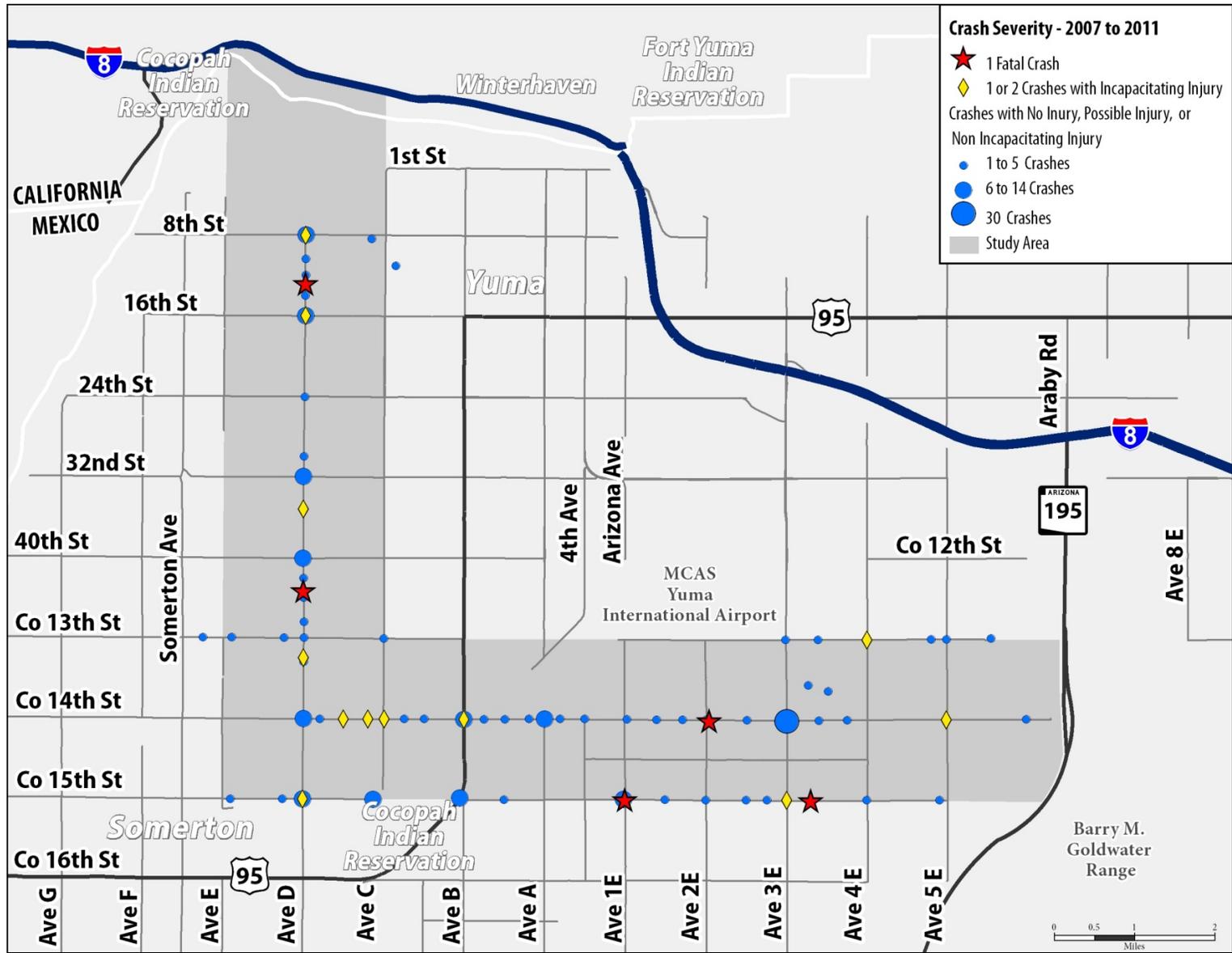


Source: ADOT Multimodal Planning Division, 2012



95

Figure 2-17: Crash History – 2007 to 2011

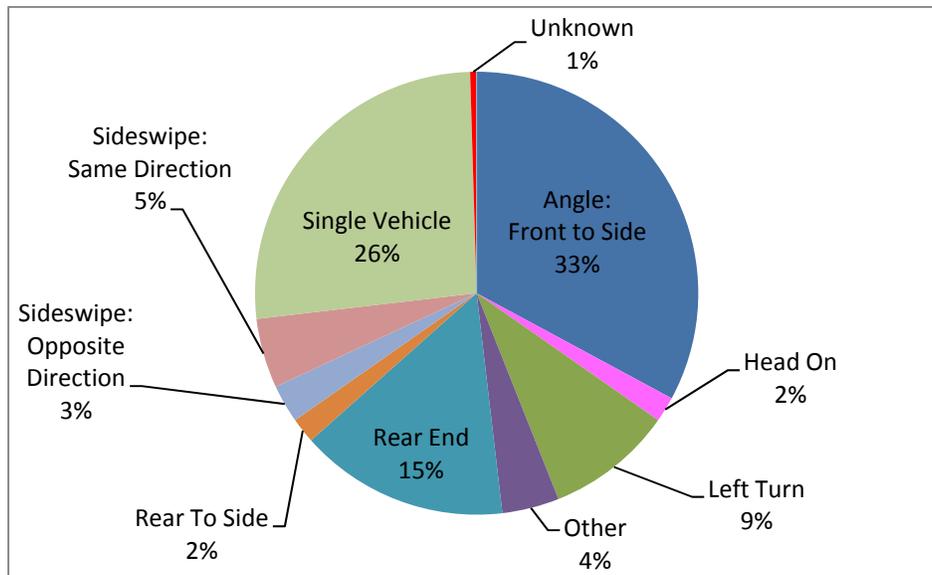


Source: ADOT Multimodal Planning Division, 2012

On Avenue D and County 14th Street, there were 137 day time crashes and 79 night time crashes between 2007 and 2011.

Figure 2-18 summarizes the manner of collision for crashes reported between 2007 and 2011 on Avenue D and County 14th Street. The majority of crashes were angle hit collisions (front to side), single vehicle collisions, and rear end collisions.

Figure 2-18: Crash Summary by Manner of Collision for Avenue D and County 14th Street



Source: ADOT Multimodal Planning Division, 2012

2.4.4. Alternative Transportation Modes

Transit System

The Yuma County Intergovernmental Public Transportation Authority (YCIPTA) provides fixed route and demand responsive bus services throughout Yuma County, as well as in Winterhaven and the portion of the Fort Yuma Indian Reservation located in California. As of January 2013, the fixed route transit system in Yuma County has 11 main bus routes, as well as a holiday service and a night service.

Most bus routes serve the City of Yuma and meet at the Del Sol Hotel at Gila Street and 3rd Street, which is the main transfer hub. A second transfer hub is located at Wal-Mart on 26th Street and Avenue B in the City of Yuma.

The Purple Route 6/6A is the main bus service provided within the Yuma Expressway study area. This Purple Route primarily serves the Cocopah Indian Reservation. It connects the Cocopah North Indian Reservation with the City of Yuma, the Cocopah Casino, the City of Somerton, and the Cocopah East and West Indian Reservations. The Purple Route 6 service is only provided during weekdays and runs along Riverside Drive, Avenue C, and US 95, within



the study area. On Saturdays, the Purple Route 6A service is provided. It runs as a loop, going east on 8th Street and south on Avenue D, within the study area.

The Yellow Route 95 also runs through the Yuma Expressway study area. This route mainly operates on US 95 and connects the Cities of Yuma, Somerton, and San Luis.

Two other routes operate along the boundaries of the study area, on Avenue C and SR 195. The Green Route 4 is a loop exclusively serving downtown Yuma. It runs adjacent to the study area on Avenue C, between 16th Street and 24th Street. The Silver Route 9 runs along SR 195 connecting the City of San Luis with the Arizona Western College.

A map of the bus network operated by YCIPTA is provided in Appendix B.

Rail Network

As shown in Figure 2-19, the Yuma Expressway study area crosses what used to be the Yuma Valley Railroad, but is now owned by the Bureau of Reclamation. These tracks are an inactive facility running from west to east in the northwestern portion of the study area. The Bureau of Reclamation tracks were originally constructed in the early 1900s to aid in the construction of the levees along the Colorado River. The railroad tracks were last used as a tourist railroad to transport winter visitors from downtown Yuma to an area west of the City of Somerton and back. Although the tracks are inactive the Bureau of Reclamation has not formally abandoned them. It is anticipated that any future Yuma Expressway Corridor will have to address the crossing of the Bureau of Reclamation tracks.

Other rail facilities are located in the vicinity of the study area as described below.

- A main railroad owned and operated by Union Pacific (UP). This UP mainline connects California to southern Arizona. The UP railroad runs parallel to I-8 and does not cross the Yuma Expressway study area.
- Several UP railroad spur lines are located near the study area. They include the facility serving the MCAS-Yuma. The facility serving MCAS-Yuma is currently discontinuous at 32nd Street. The 32nd Street crossing would have to be re-established, as would the Avenue 3E crossing further south, for the spur line to function.

An Amtrak station served by the UP mainline is located in the City of Yuma, on Gila Street.

Ports of Entry (POE)

There are three land POEs within relative close proximity to the study area: San Luis I and San Luis II in Arizona and Andrade in California. Regional road access to San Luis I is provided by US 95. This land POE only processes non-commercial vehicles and pedestrians. San Luis II, located five miles east of San Luis I and accessed via the ASH (SR 195), was recently completed and has taken over all commercial border operations in the area. Andrade is located in the southeast corner of California within the Fort Yuma Indian Reservation near the Arizona border. Passenger vehicles and pedestrians constitute the majority of current traffic at this POE, which is connected to I-8 by SR 186.

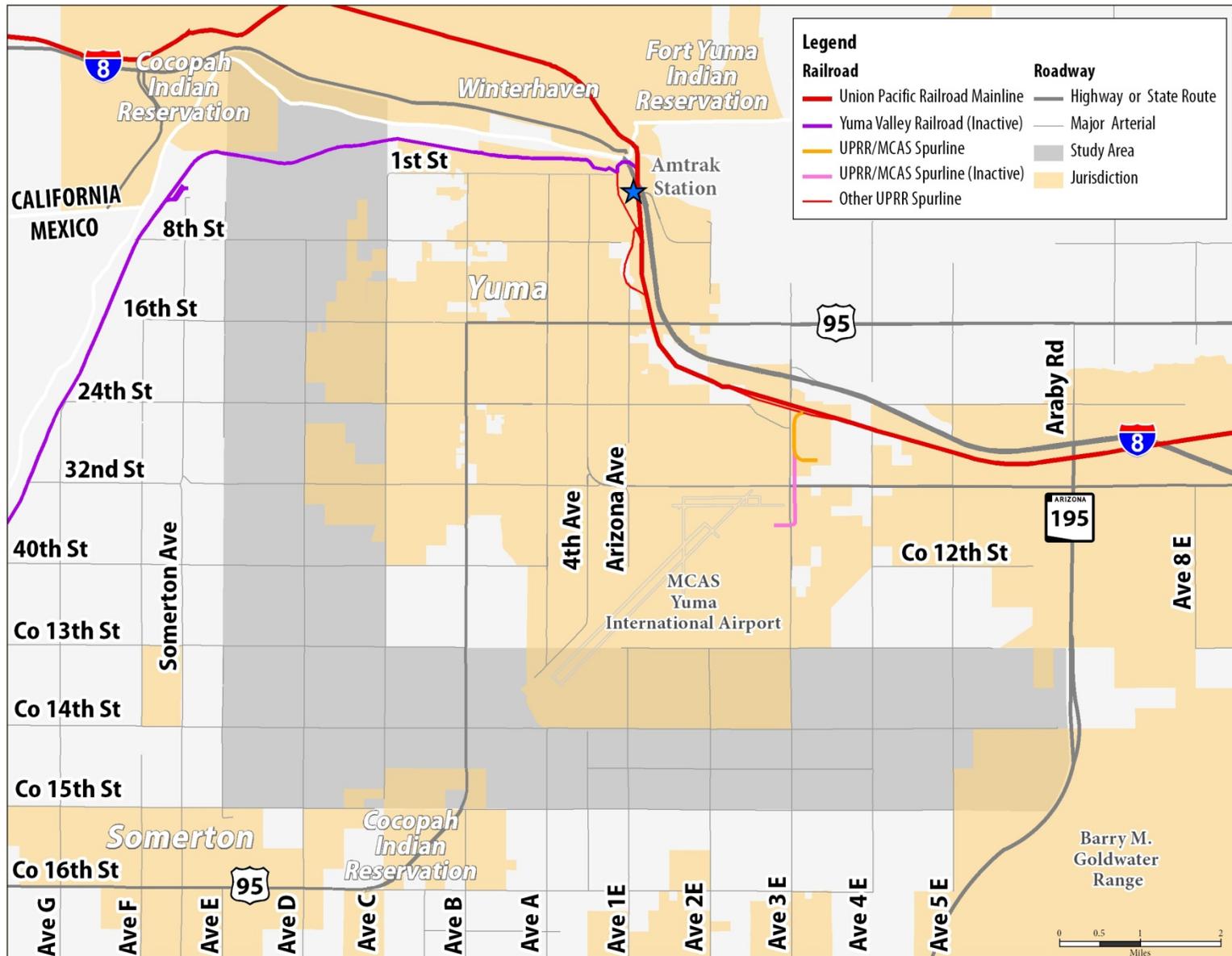


Bicycle and Pedestrian Facilities

There are a limited number of bicycle facilities in Yuma County. There are no bikeways or other bicycle facilities in the study area. All buses are equipped with front bike racks to allow bicyclists to use public transit.

Pedestrian facilities are limited throughout the Yuma Expressway study area. For instance, there are no sidewalks along some segments of Avenue D. Pedestrian-friendly facilities such as sidewalks, traffic lights, and crosswalks are generally provided only in urbanized residential areas.

Figure 2-19: Rail Facilities



Source: Parsons Brinckerhoff, 2011



2.5. Preliminary Environmental Review

2.5.1. Title VI and Environmental Justice

Title VI of the Civil Rights Act of 1964 and related statutes ensure that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, and disability. Executive Order 12898 “Federal Actions to Address Environmental Justice (EJ) in Minority Populations and Low-Income Populations” directs that programs, policies, and activities identify and address as appropriate, disproportionately high and adverse human health and environmental effects on minority and low-income populations.

Population characteristics within the study area were analyzed to identify any high concentrations of racial or ethnic minority, low-income, elderly, or disabled populations.

Racial and Ethnic Minorities

Race and ethnicity are separate and distinct. Racial minority statistics are a total of the number of people who identify themselves as any race other than white: Black or African American, Native American, Asian, Pacific Islander, Other, and Two or More Races. The U.S. Census asks about ‘Hispanic or Latino’ origin as a separate ethnicity-related question. Thus, U.S. Census respondents not only choose the race or races with which they most closely identify, they are also categorized by membership in one of two ethnicities: ‘Hispanic or Latino; and ‘Not Hispanic or Latino’.

As shown in Table 2-12 through Table 2-14, the population in the study area has an overall racial and ethnic composition similar to that of Yuma County. None of the jurisdictions included in the analysis have a significantly higher ethnic or racial minority population than the county.

Figure 2-20 illustrates the distribution and percentage of minority populations in the area (by U.S. Census Block). On average, ethnic and racial minority populations comprise less than 30% of the total population of the study area. However, there are two areas with relatively higher concentrations of residents identifying themselves as minorities: part of the North Cocopah Indian Reservation to the north near the Colorado River and a neighborhood west of the intersection at Avenue D and County 14th Street.

The City of Somerton and unincorporated areas throughout the County have much larger populations of Hispanic or Latino residents than the rest of the County. However, within the study area the proportion of residents with Hispanic or Latino ethnic origins is comparable to the proportion found in Yuma County. Figure 2-21 illustrates this distribution.

Table 2-12: Racial Minorities

Jurisdiction	Study Area	Yuma County
City of Somerton	23.3%	35.6%
City of Yuma	30.5%	31.2%
Cocopah Indian Reservation	28.5%	70.1%
Fort Yuma Indian Reservation	<1%	77.4%
Unincorporated Area	31.2%	32.6%
All Jurisdictions	30.7%¹	29.6%²

¹Percentage of non white residents within the study area
²Percentage of non white residents in Yuma County
 Source: 2010 U.S. Census

Table 2-13: Racial Demographics and Hispanic Origins in the Study Area

Jurisdiction	White	Black or African American	Native American	Asian	Pacific Islander	Other	Two or More Races	Hispanic Origin
City of Somerton	75.9%	<1%	2.3%	<1%	<1%	16.5%	4.5%	60.2%
City of Yuma	69.5%	1.9%	<1%	2.8%	<1%	21.3%	3.4%	64.7%
Cocopah Indian Reservation	77.5%	<1%	21.8%	<1%	<1%	4.4%	2.3%	8.1%
Fort Yuma Indian Reservation	80.0%	<1%	<1%	<1%	<1%	20.0%	<1%	20.0%
Unincorporated Area	68.7%	1.1%	1.2%	<1%	<1%	23.4%	4.6%	62.4%
Study Area	69.3%	1.5%	1.4%	1.8%	<1%	21.8%	3.9%	62.7%

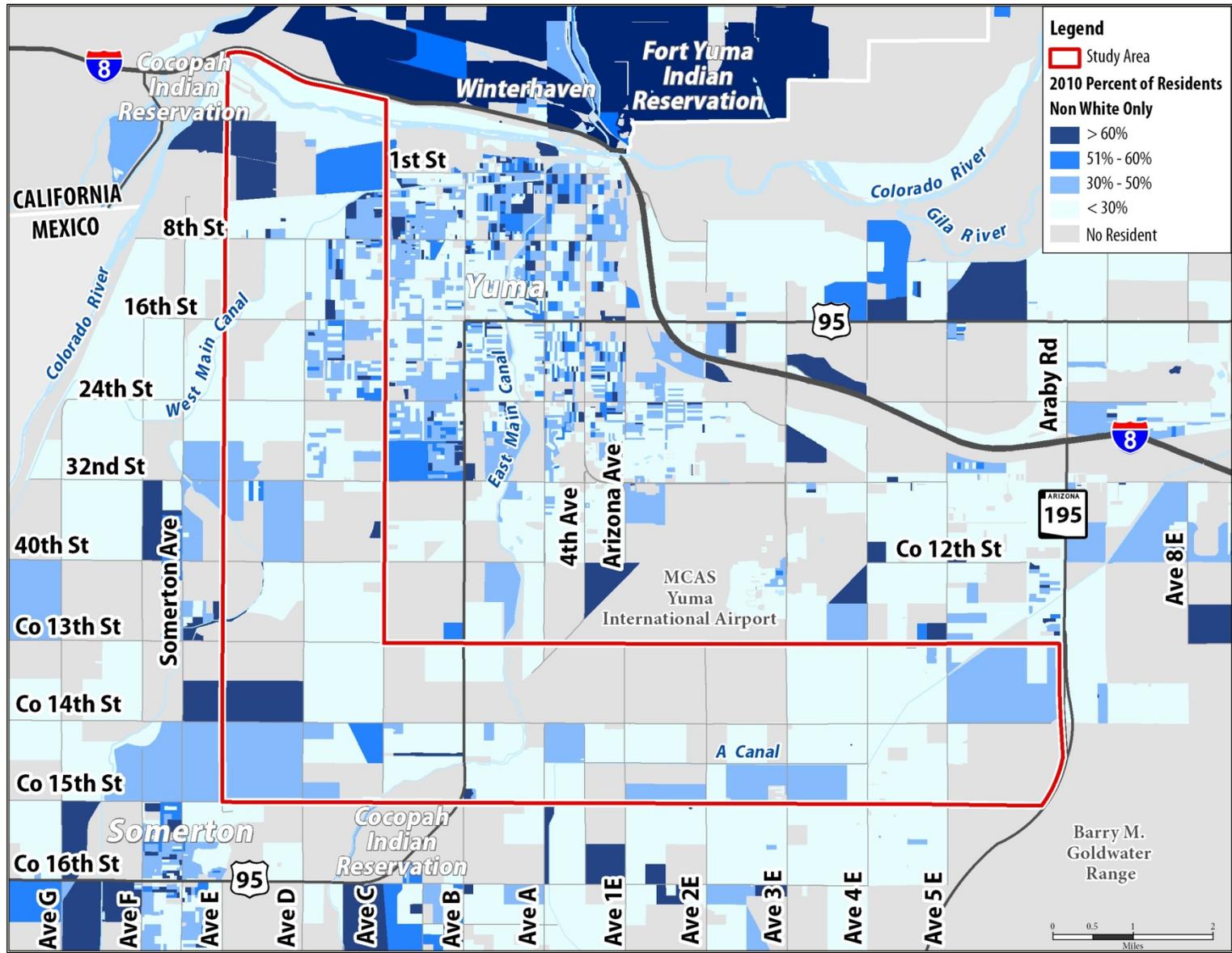
Source: 2010 U.S. Census

Table 2-14: Racial Demographics and Hispanic Origins in Yuma County Jurisdictions

Jurisdiction	White	Black or African American	Native American	Asian	Pacific Islander	Other	Two or More Races	Hispanic Origin
City of Somerton	64.4%	<1%	<1%	<1%	<1%	31.1%	2.4%	95.9%
City of Yuma	68.8%	3.2%	1.8%	1.9%	<1%	19.6%	4.5%	54.8%
Cocopah Indian Reservation	29.9%	<1%	63.6%	<1%	<1%	3.5%	2.3%	11.5%
Fort Yuma Indian Reservation	22.6%	1.5%	61.3%	<1%	<1%	7.6%	6.4%	32.0%
Unincorporated Area	67.4%	<1%	<1%	<1%	<1%	27.1%	3.4%	75.6%
Yuma County	70.4%	2.0%	1.6%	1.2%	<1%	20.8%	3.8%	59.7%

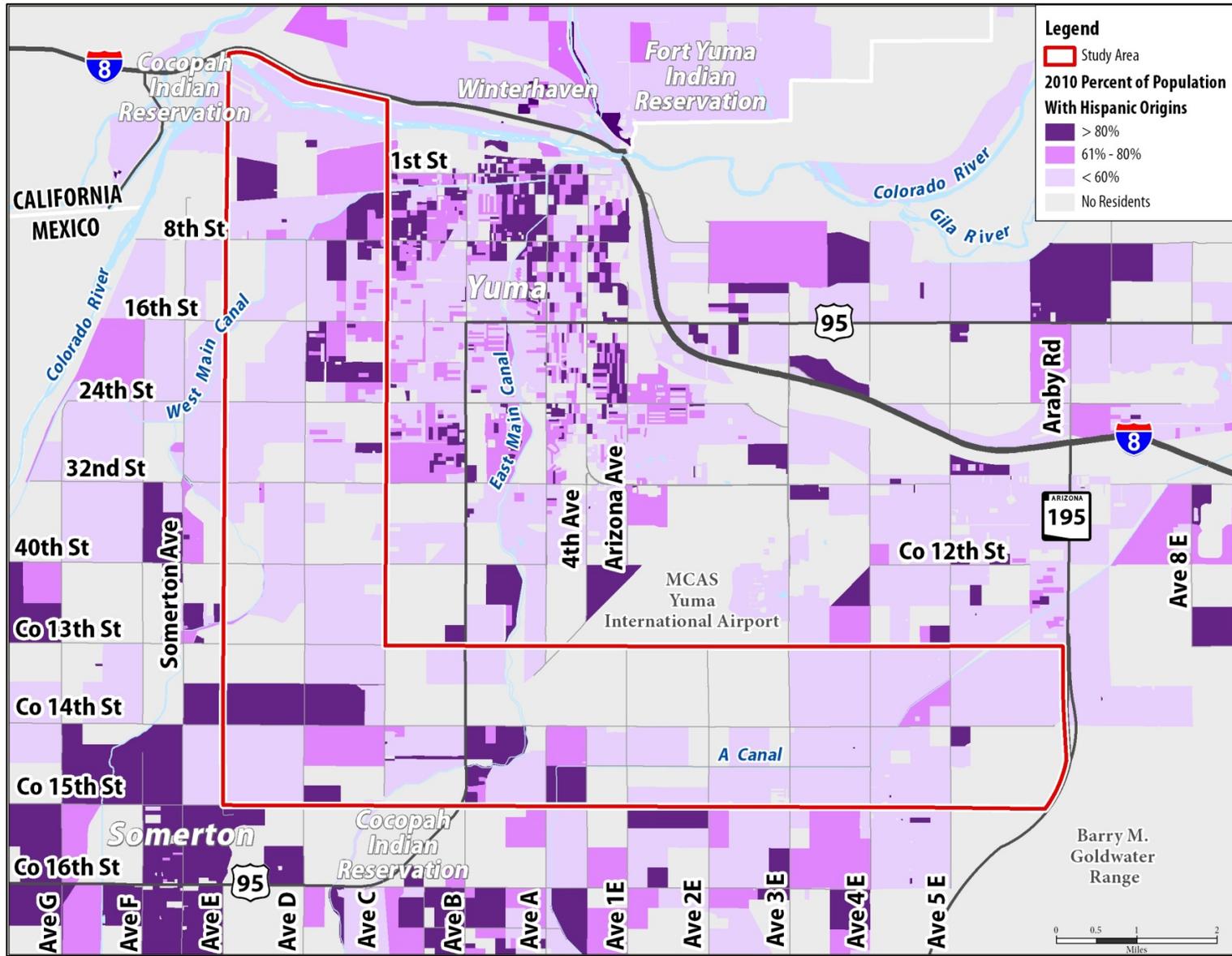
Source: 2010 U.S. Census

Figure 2-20: Minority Populations



Source: 2010 U.S. Census – by Census Block

Figure 2-21: Populations with Hispanic Origins



Source: 2010 U.S. Census— by Census Block



Low-Income Population

Following the Office of Management and Budget’s Directive 14, the U.S. Census Bureau uses a set of income thresholds that vary by family size and composition to identify low-income persons. If the total income for a household falls below the relevant poverty threshold, then the household is classified as being “below the poverty level”.

According to the U.S. Census 2010 American Community Survey (ACS) 5-year estimates, 15.7% of the population within the Yuma Expressway study area is identified as being low-income. This is less than Yuma County’s average, where approximately 20% of the County’s population was identified as low-income in 2010.

As shown on Figure 2-22, the largest low-income population within the study area is located east of Avenue D and north of 16th Street. The Indian Tribes have a particularly high proportion of low-income residents compared to the rest of the County. It can be noted that the neighborhood of downtown Yuma east, and adjacent to the study area between Avenue C and Avenue A, have more than 40% of low-income residents.

Disabled

The Americans with Disabilities Act defines disability as a “physical or mental impairment that substantially limits a major life activity”. The 2010 U.S. Census was reformatted and changes in overall content meant that questions regarding disability status were no longer included. Therefore, this information is only available from the 2000 Census. Due to the outdated nature of this information, we have only considered data at the county, city and Indian Reservation levels. Table 2-15 shows disabled population distribution throughout Yuma County.

Percentages of disabled populations throughout Yuma County jurisdictions are not disproportionately high compared to county statistics. Unincorporated areas of Yuma County have a disabled population percentage of 33.5%, which is slightly more than then entire Yuma County (20.8%) as a whole.

Table 2-15: Disabled Populations

Jurisdiction	Percent of Disabled Population
City of Somerton	15.8%
City of Yuma	20.4%
Cocopah Indian Reservation	26.3%
Fort Yuma Indian Reservation	25.8%
Unincorporated Area	33.5%
Yuma County	20.8%
Note: Data was not available in a format that would allow analysis to be done on the percentage of disabled residents within the study area. Source: 2000 U.S. Census	



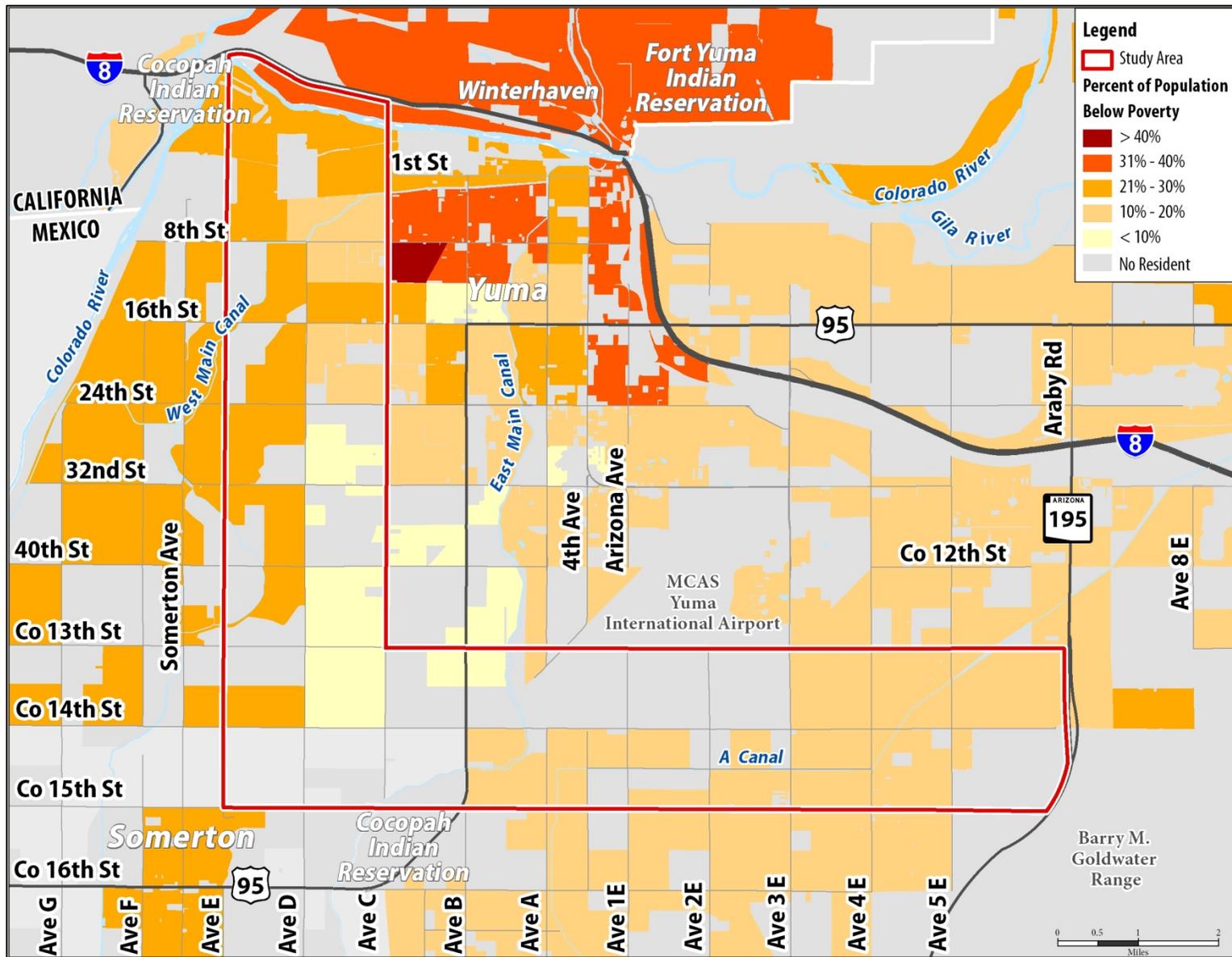
Elderly

Elderly residents are defined as age 60 and older. Overall, the study area has a considerably lower percentage of elderly residents than Yuma County, as shown in Table 2-16 and Figure 2-23. However, those portions of Somerton and the Cocopah Indian Reservation within the study area boundaries have larger elderly populations than the jurisdictions as a whole. Areas where elderly residents are prevalent are located in small, disjointed pockets throughout the study area.

Table 2-16: Elderly Populations

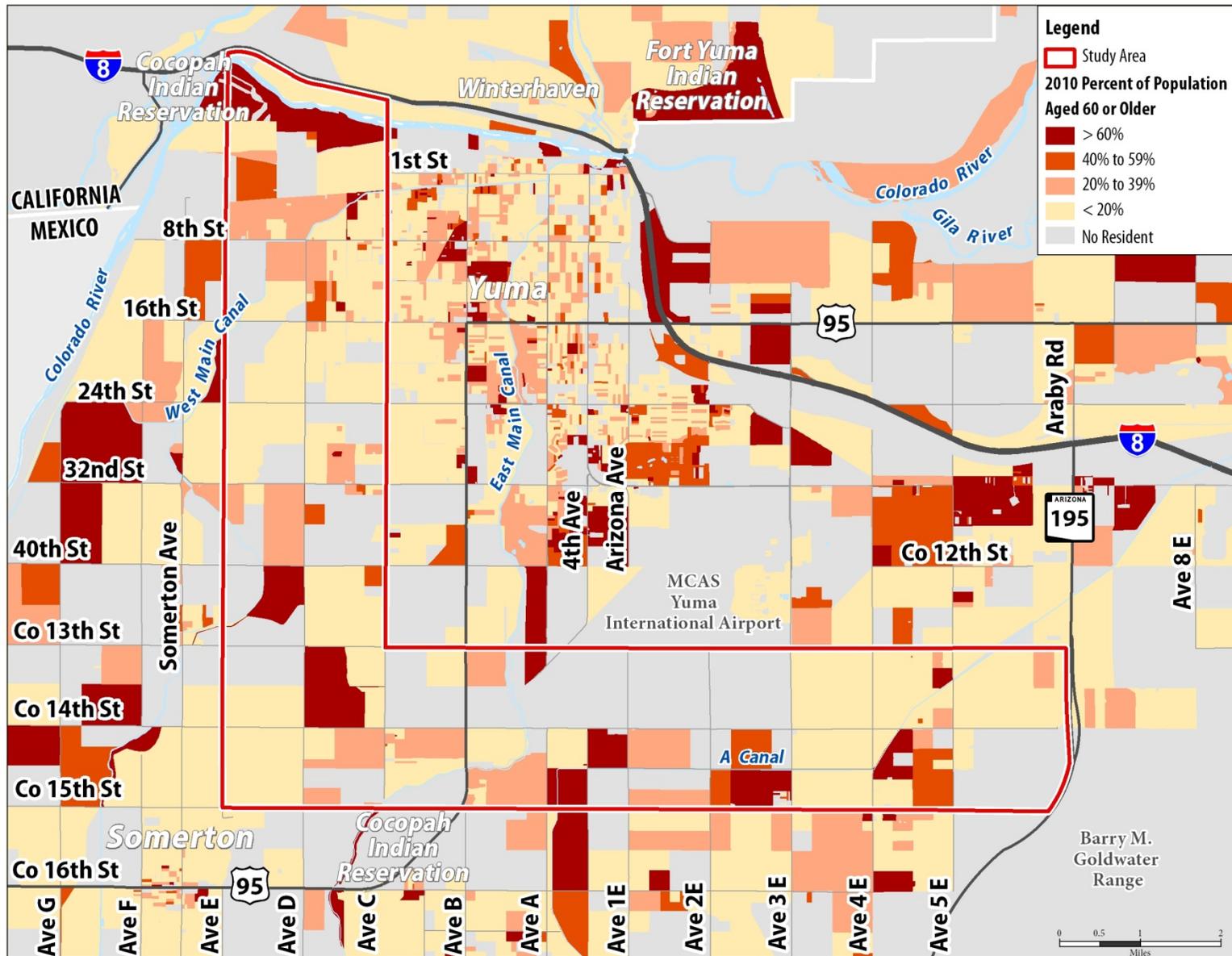
Jurisdiction	Study Area	Yuma County
City of Somerton	17.3%	9.4%
City of Yuma	8.5%	16.9%
Cocopah Indian Reservation	67.24%	33.0%
Fort Yuma Indian Reservation	0.0%	17.0%
Unincorporated Area	17.0%	33.5%
All Jurisdictions	13.2%¹	55.7%²
¹ Percentage of elderly residents within the study area		
² Percentage of elderly residents in Yuma County		
Source: 2010 U.S. Census		

Figure 2-22: Low-Income Populations



Source: 2010 U.S. Census 5-year Estimates – by Census Tracts

Figure 2-23: Populations Aged 60 or Older



Source: 2010 U.S. Census – by Census Tracts



Compliance with Title VI and Environmental Justice Requirements

The assessment of demographic characteristics of the population within the Yuma Expressway study area and its vicinity showed that certain areas have higher numbers of residents identified as minorities and/or low-income. The largest of these areas are detailed in Table 2-17.

Table 2-17: Main Areas With Populations Sensitive to Environmental Justice

Area Within the Yuma Expressway Study Area	High Percentage of Population		
	From Racial Minorities	With Hispanic Origins	Below Poverty Level
North Cocopah Indian Reservation	X		X
Fort Yuma Indian Reservation	X		X
County 14th Street between Avenue E and Avenue D	X	X	X
Downtown Yuma – East of Avenue D from 24th Street to 8th Street	X	X	
East of Avenue D, north of 8th Street	X	X	X

Source: 2010 U.S. Census

In order to comply with Title VI and Environmental Justice requirements, recommendations made by this study will ensure that impacts from alternatives developed do not have disproportionately high and adverse health and environmental impacts on these populations.

2.5.2. Endangered Species and Protected Habitats

As shown in Table 2-18, according to the Arizona Game and Fish Department’s Heritage Data Management System, eight special status species were listed as potentially occurring within or near the proposed project location.

The Western Burrowing Owl, Flat-tailed Horned Lizard, and Yuma Hispid Cotton rat are all listed as “species of concern” by the U.S. Fish and Wildlife Service (USFWS). This informal term refers to species within a specific region that are thought to be in need of concentrated conservation actions. These actions may vary depending on the health of the populations and degree and types of threats they face. The Western Burrowing Owl is also listed as a sensitive species by the BLM.

Both the Southwestern Willow Flycatcher and the Yuma Clapper Rail are “Listed Endangered” by the USFWS. This classification is given to any species in danger of extinction throughout all or a significant portion of its range.



Table 2-18: Special Status Species Potentially Occurring within Study Area

Name	Common Name	Status			
		U.S. Fish & Wildlife Service	Bureau of Land Management	State	Migratory Bird Treaty Act
<i>Ardea alba</i>	Great Egret			WSC	X
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC	S		
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo	PS:C		WSC	X
<i>Egretta thula</i>	Snowy Egret			WSC	X
<i>Empidonax traillii extimus</i>	Southwestern Willow Flycatcher	LE		WSC	
<i>Phrynosoma mcallii</i>	Flat-tailed Horned Lizard	SC		WSC	
<i>Rallus longirostris yumanensis</i>	Yuma Clapper Rail	LE		WSC	X
<i>Sigmodon hispidus eremicus</i>	Yuma Hispid Cotton Rat	SC			

SC = Species of Concern; PS:C = Partial Status: Candidate; LE = Listed Endangered; S = Sensitive Species; WSC = Wildlife of Special Concern
 Source: Arizona Game and Fish Department (Heritage Data Management System), Online Migratory Bird Treaty Act (List of Protected Species), U.S. Fish and Wildlife Service (Online County Search)

The Yellow-billed Cuckoo was designated a “Partial Status: Candidate” by the USFWS. Candidate species are those for which the USFWS has sufficient information on biological vulnerability and threats to support proposals of listing as endangered or threatened under the Endangered Species Act. However, proposed rules have not yet been issued because such actions are precluded at present by other listing activity.

Six of the eight species (Great Egret, Yellow-billed Cuckoo, Snowy Egret, Southwestern-willow Flycatcher, Flat-tailed Horned Lizard, and the Yuma Clapper Rail) are listed as “wildlife of special concern” by the State of Arizona. This listing is given to those species whose occurrence in Arizona is, or may be in jeopardy, or species with known or perceived threats or population declines. In addition, the Great Egret, Yellow-billed Cuckoo, Snowy Egret and Yuma Clapper Rail are also listed as birds protected by the Migratory Bird Treaty Act.

Most of the identified species of concern such as the Great Egret, Snowy Egret, Southwestern-Willow Flycatcher, Yellow-billed Cuckoo, Yuma Clapper Rail, and the Yuma Hispid Cotton Rat utilize riparian and wetland habitat that is commonly found along the Colorado River and is within close proximity to the study area. The Western Burrowing Owl has adapted to live in urban and agricultural areas and will likely be found within close proximity to most of the study area and the Flat-tailed Horned Lizard is found east of SR 195, as well as north and south of County 14th Street.

2.5.3. Prime and Unique Farmlands

Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance. Prime farmland, as defined by the U.S. Department of Agriculture, is land that



has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. The land must have the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed (including water management) according to acceptable farming methods. Unique farmland is defined as land other than prime farmland used for the production of specific high-value food and fiber crops. Examples of such crops include citrus, tree nuts, olives, cranberries, fruits and vegetables.

The Farmland Protection Policy Act regulates Federal actions that have the potential to convert farmland to non-agricultural uses. Data obtained from the United States Department of Agriculture National Resources Conservation Services Online Web Soil Survey, indicate that a majority of the Yuma Expressway study area traverses lands that, if not already developed, would be considered prime and/or unique farmland. These classifications include:

- Gadsden clay, Holtville clay, and Indio silt loam which are considered prime farmland “if irrigated and reclaimed of excess salts and sodium”;
- Kofa clay and Ripley silt loam which are both prime farmland “if irrigated”; and
- Rositas sand and Superstition sand which are both identified as “farmland of unique importance”.

2.5.4. Potential Environmental Challenges of Crossing the Colorado River

Several environmental challenges would be encountered to connect the Yuma Expressway to I-8, by crossing the Colorado River. The Colorado River is considered a jurisdictional water of the United States, as regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. A Section 404 Permit would need to be obtained from the USACE regarding a new bridge crossing the river. The California Environmental Quality Act (CEQA) would need to be addressed due to the fact that the proposed northern terminus of the project at I-8 would occur in California.

3. Future Conditions

This chapter presents the future conditions of the region, including a forecast of future land use and socio-economic conditions, planned transportation infrastructure, and summaries of current studies in Section 3.1. The anticipated traffic operations within and around the Yuma Expressway study area is discussed in Section 3.2. This analysis assumes there are no improvements made to the overall transportation network other than those already programmed and is based upon Yuma Metropolitan Planning Organization (YMPO) travel forecasts, which in turn are dependent upon regional population and employment forecasts.

3.1. Forecast of Future Conditions

The assessment of future conditions forms the basis for analyzing the need of the Yuma Expressway. Future land use and development plans, projected population and employment data, as well as forecasted travel demand in Yuma County, are summarized in the following sections.

3.1.1. Future Land Use and Development

As described in Chapter 2, Current Conditions, the Yuma Expressway study area includes portions of the City of Yuma, the City of Somerton, Cocopah Indian Reservation, Fort Yuma Indian Reservation and Unincorporated Yuma County. An analysis of future land use and development for each jurisdiction was conducted and documented below. This analysis primarily consisted of inventorying adopted General and Comprehensive Plans. Directly south of the Yuma Expressway study area is the City of San Luis. While the City of San Luis is not included within the study area, population and employment growth close to the Mexico border may still impact the study area. Therefore, the City of San Luis was also included in this analysis.

City of Yuma

The updated City of Yuma 2012 General Plan identifies several subareas within the planning area for extensive evaluation, planning, and redevelopment. These zones are mainly located in and around downtown Yuma bordered to the west by Avenue B, to the south by 40th Street, and to the east and north by I-8 (Figure 3-1). None of the redevelopment areas occur within the Yuma Expressway study area.

The City of Yuma 2012 General Plan also identifies several future commercial and residential developments. Two of the newest are the Yuma Palms Regional Center located near I-8 and US 95, and the Cielo Verde Commercial Center at Avenue 8E and 32nd Street, as shown in Figure 3-2. It is anticipated that the City will continue to be the retail and employment center for the region.



Two mixed-use, master-planned communities are also planned:

- The Laurel Development located south of 24th Street in the South Gila Valley, near the Araby Road and I-8 interchange. This community will incorporate a mix of land uses including over 1,000 dwelling units, as well as some retail, a business park, a hotel, and a farm on approximately 240 acres.
- The Estancia Development located on the South Mesa, west of Avenue 4E, east of Avenue A, south of County 15½ Street and north of County 19th Street. This community is intended to include nearly 4,000 acres of agricultural land, shops, services, parks, schools, and utilities. About 20,000 new homes are anticipated to serve a future population of 50,000. However, initial stages are not expected to begin for 10 to 15 years.

According to the City of Yuma 2012 General Plan, the two fastest growing residential areas are the South Yuma Valley and East Mesa. In addition, five existing Growth Areas and one future Growth Area were identified within the planning boundaries of the City of Yuma but outside of the Yuma Expressway study area, as shown in Figure 3-3. Of the six, three are large expanses of undeveloped land representing emerging development areas and are designated on the Land Use Element map as having a wide variety of land uses surrounding a major commercial corridor:

- The Crossroads of Avenue B and 32nd Street;
- Araby Road from 24th Street to 32nd Street in the East Mesa; and
- Pacific Avenue and 8th Street north of Yuma Palms.

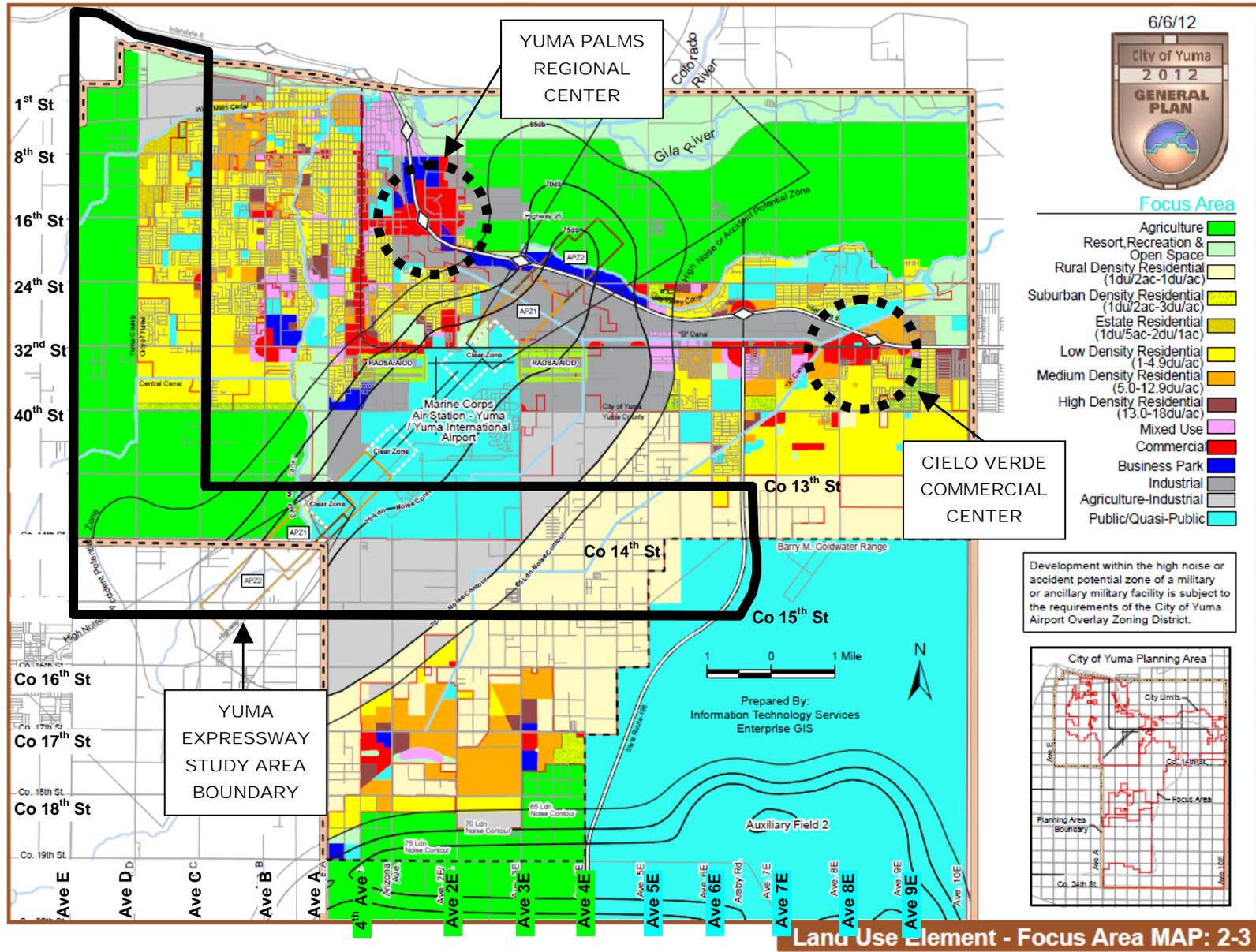
The Crossroads is closest to the study area. A mix of land uses is planned along the south side of 32nd Street, and the remainder of the area is dedicated to low-density residential uses.

Two other areas, the North End and 16th Street from 4th Avenue to Redondo Center Drive, are underdeveloped with a mix of commercial, cultural, governmental, and residential uses. These areas, targeted as infill Growth Areas, are located in the Yuma city center. Not only is a significant amount of infrastructure already in place, but the City believes these areas are ideal locations for high-density residential development.

Figure 3-3 also shows the Estancia Future Growth Area, which is the same mixed-use development mentioned above as a master-planned community.

The Growth Area Element of the City of Yuma 2012 General Plan also mentions two major expressway corridors that the City of Yuma is considering. The first is the Yuma Expressway, which this report addresses. The other is a continuation of SR 195 north to US 95, listing several alternative alignments.

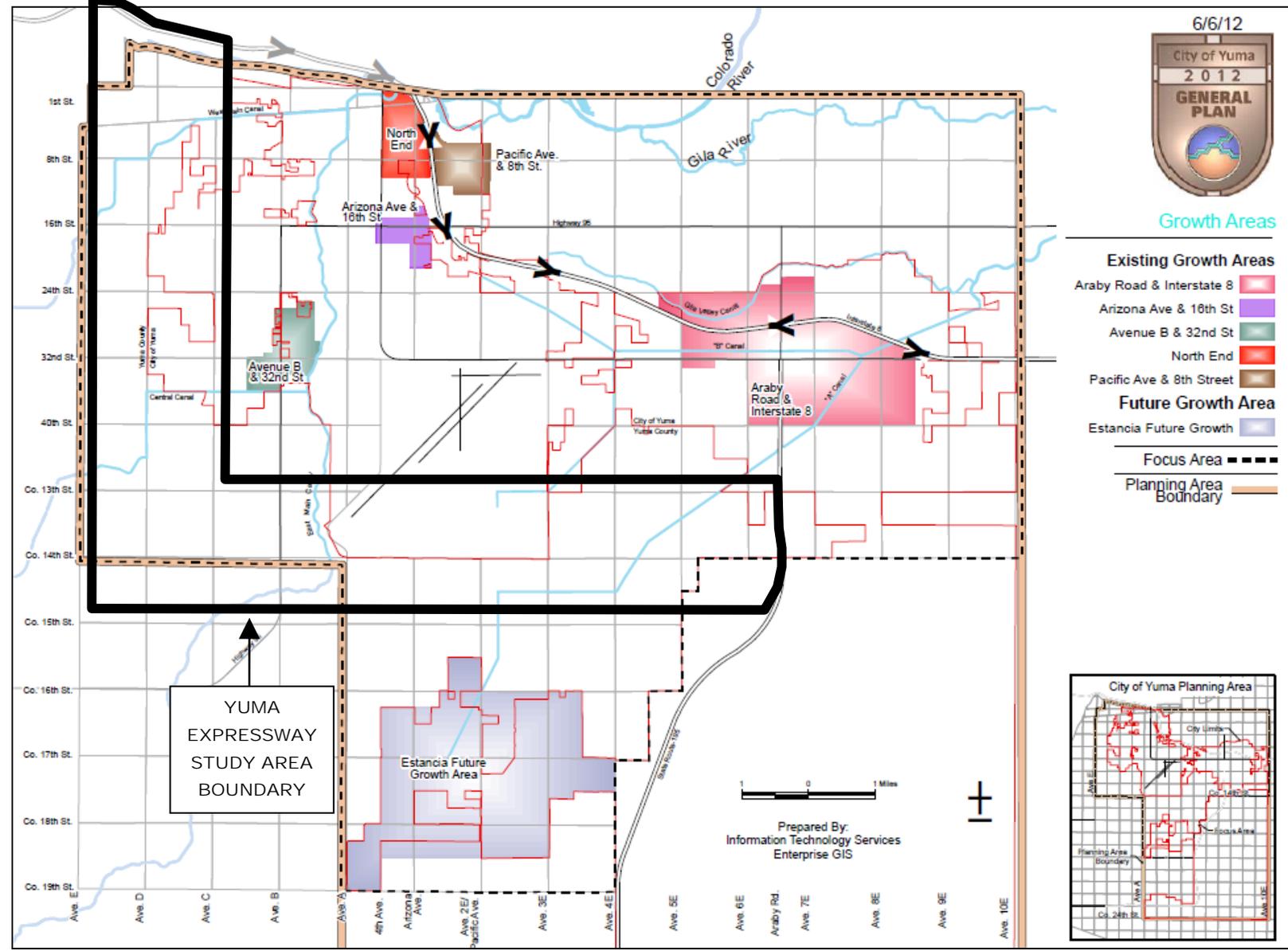
Figure 3-2: Land Use Element: Focus Area Map for the City of Yuma



Land Use Element - Focus Area MAP: 2-3

Source: City of Yuma 2012 General Plan, 2012

Figure 3-3: Growth Area Element: Growth Areas Map for the City of Yuma



Source: City of Yuma 2012 General Plan, 2012



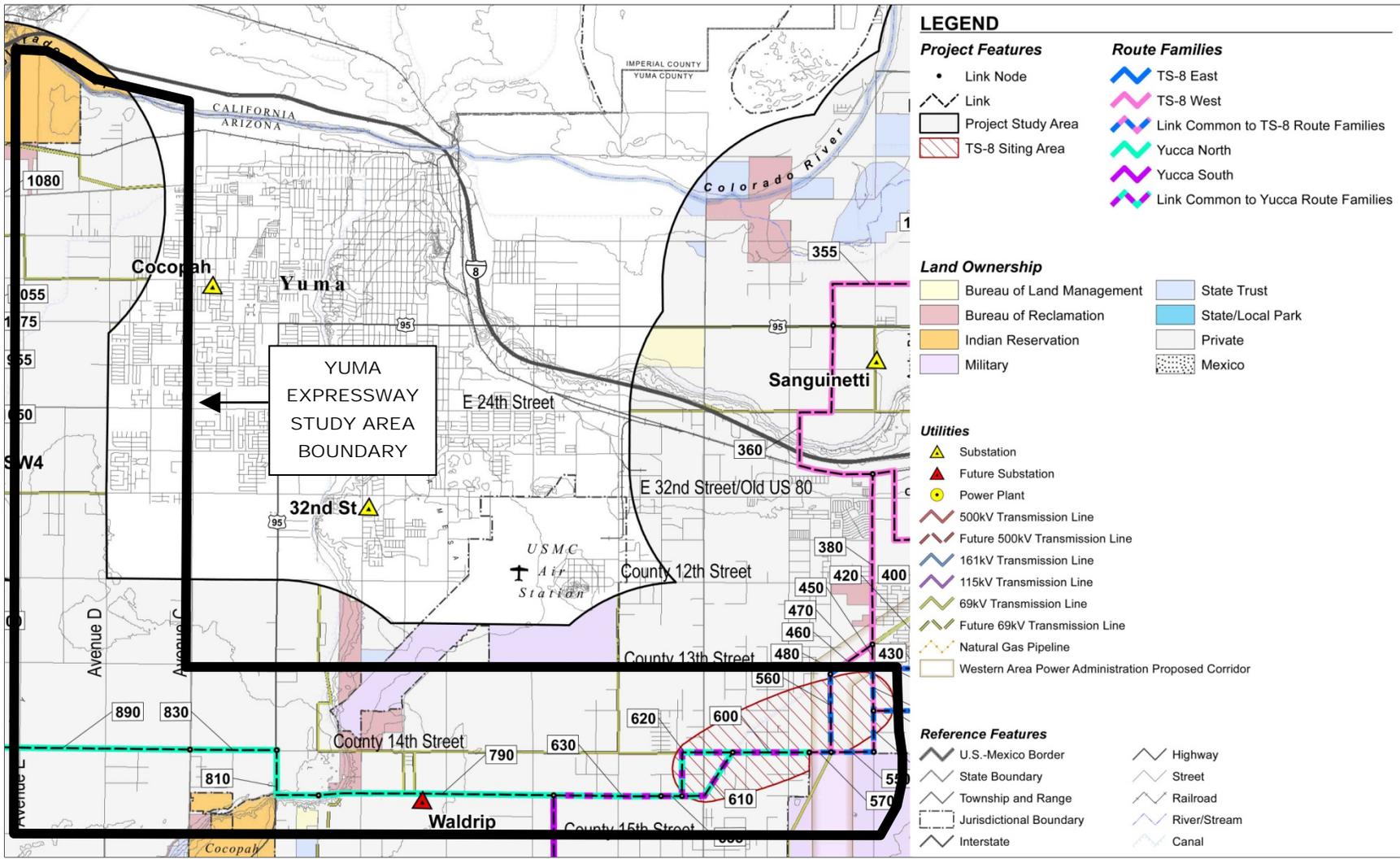
Arizona Public Service (APS) Transmission Line

The North Gila to TS-8 to Yucca 230kV Transmission Line Siting Study was recently completed, ending with approval of a Certificate of Environmental Compatibility by the Arizona Corporation Commission on February 2, 2012. This project determined a route for a new 230 kilovolt (kV) transmission line, which will be completed in two phases, as illustrated in Figure 3-4. The first phase, with a completion date of 2015, is approximately 13 miles in length. It would begin at the existing North Gila Substation northeast of the City of Yuma near the Laguna Mountains at East County 6th Street and Avenue 8E. A future TS-8 Substation would be constructed to the southwest of the City near County 14½ Street, between Avenue A and Avenue 1E. According to APS' website, the first phase of this transmission line project would terminate at this new Substation, located within the Yuma Expressway study area. "The second phase of the project is approximately 19 miles in length, with a "To Be Determined" in-service date as that phase of the project is currently beyond APS' ten-year planning horizon." This phase would connect the TS-8 Substation to the Yucca Power Plant Switchyard in the northwest quadrant of the Yuma Area just east of where the California, Mexico and Arizona borders converge.

Marine Corps Air Station (MCAS)-Yuma Main Gate Relocation

As previously mentioned in Section 2.1.13, the main gate/entrance for MCAS-Yuma is programmed to be moved in Fiscal Year 2014. Currently access is along the east side of the facility from Avenue 3E. The 2007 MCAS-Yuma Master Plan indicates the new entrance would connect south to County 14th Street.

Figure 3-4: North Gila to TS-8 to Yucca 230kV Transmission Line Project (APS)



Note: This map does not accurately depict the MCAS-Yuma property extending south to County 14th Street.
 Source: APS website http://www.aps.com/general_info/siting/siting_37.html



City of Somerton

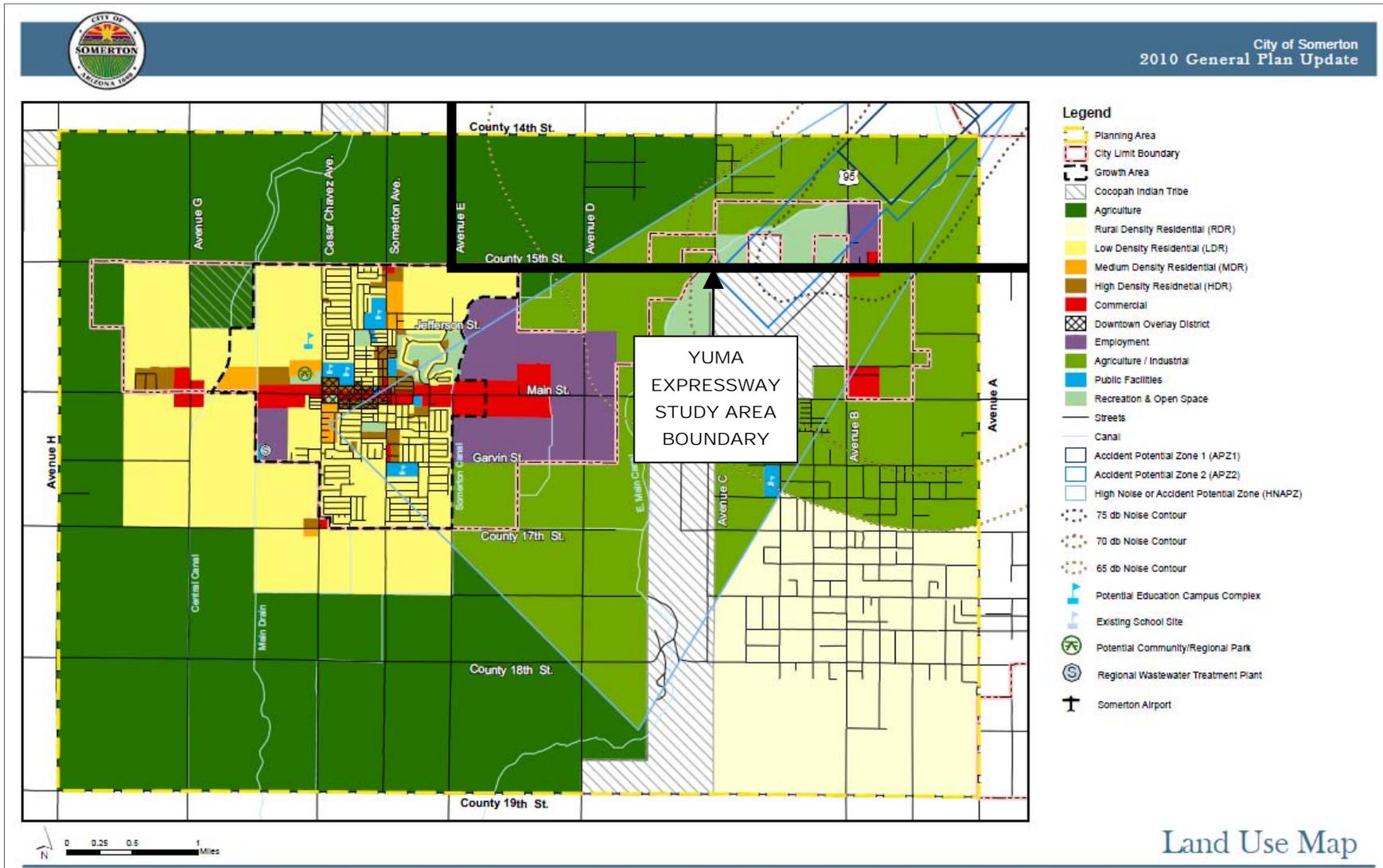
Over the last decade, the City of Somerton has experienced significant growth that strained existing community services, as well as the transportation network. In response, the City identified and implemented many of the most important infrastructure projects. Growth rates in the immediate future are expected to slow to more historic levels, placing greater importance on maintaining the area's quality of life through prioritizing future community needs.

Based on feedback during development of the City of Somerton 2010 General Plan, residents prefer the City remain a predominantly rural- and agricultural-based community. Accounting for this preference, while still accommodating growth and diversifying the local economy, is a significant challenge for the future. To reflect current residents' desire to maintain the City of Somerton's small-town feel, the City has identified a downtown growth area, roughly between County 15th Street and County 17th Street and between Avenue E and the Central Canal. The City of Somerton will focus its development in this area over the next 10 to 20 years as the population grows.

Operations of the MCAS-Yuma, and the resulting High Noise or Accident Potential Zone (HNAPZ) which extends partially over the City of Somerton, creates an abundance of land that is unsuitable for residential development but is available for commercial and employment uses as shown in Figure 3-5.

A challenge mentioned in the Community Vision chapter of the General Plan, was the City's unique location in the "South West County", between two much larger communities: Yuma the economic hub of the region; and the City of San Luis, a growing border town located adjacent to Mexico. In relation to the overall area transportation network, the City of Somerton is in a less than optimal location, with no rail connection, no easy access to I-8, as well as no direct connection to the newly built SR 195 (ASH Highway) or the newly constructed commercial port of entry (POE) in San Luis.

Figure 3-5: City of Somerton Land Use Map



Source: City of Somerton 2010 General Plan, 2010



City of San Luis

During the last decade, the City of San Luis was one of the fastest-growing communities in Yuma County. The City is expected to experience further residential, commercial, and industrial growth. This growth will generally be directed along two primary transportation corridors: north along US 95 towards Gadsden and east along Juan Sanchez Boulevard, also referred to as the ASH. As identified in the City of San Luis 2010 General Plan, short-term growth is predicted to occur around the San Luis I and San Luis II POEs at the Mexican border, as well as within the city center of San Luis. San Luis I is a full-service U.S. POE and San Luis II, which only processes commercial vehicles, is a new POE built east of the city.

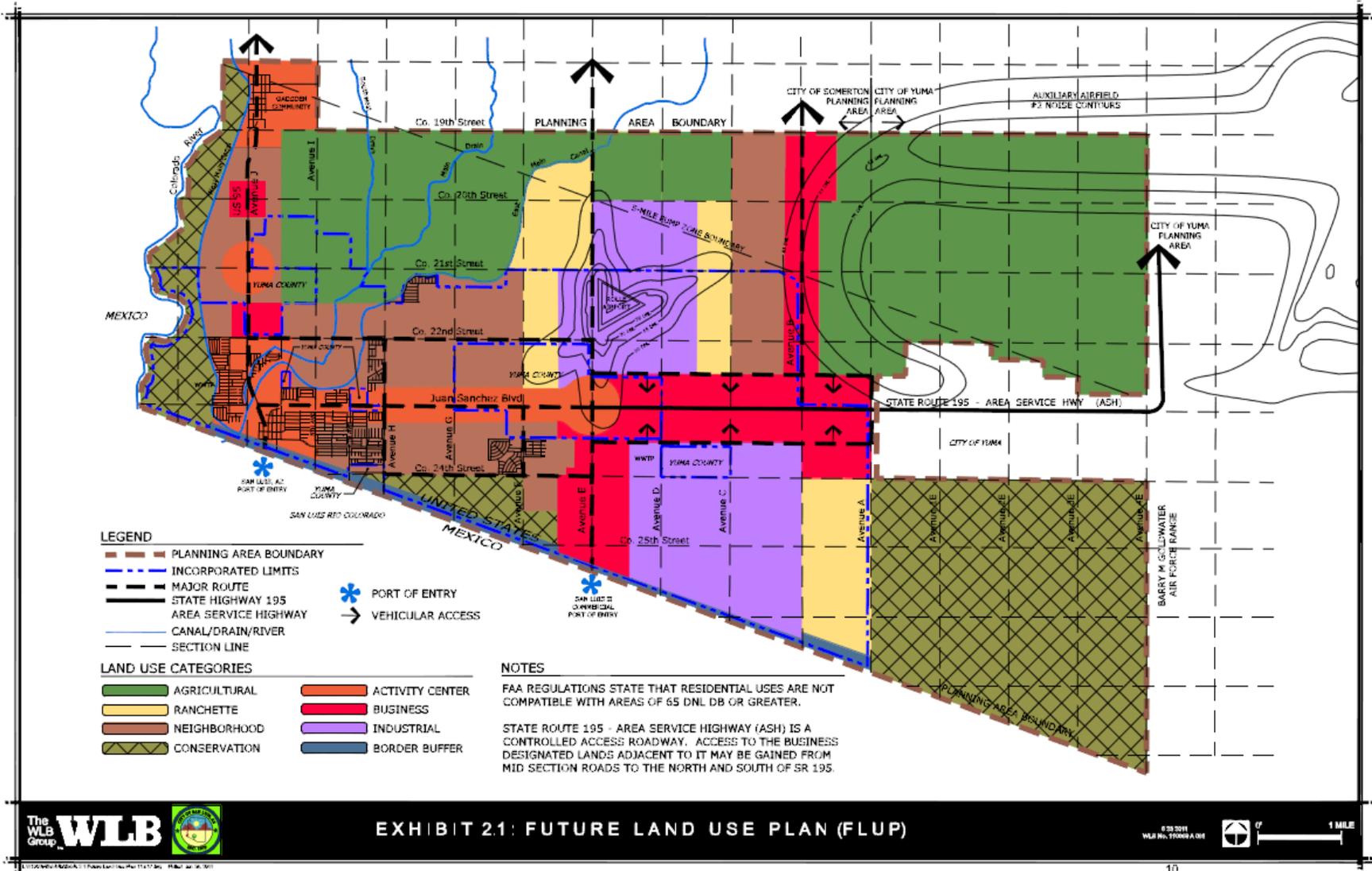
Prior to the construction of the San Luis II POE, San Luis I had experienced a dramatic increase in traffic volumes including commercial traffic, privately owned vehicles, and pedestrians. While facility expansion was necessary to keep up with demand, existing city infrastructure prevented this from occurring. San Luis II was constructed to take over commercial traffic inspections, thereby increasing the capacity of San Luis I to process pedestrians and privately owned vehicles, while also eliminating congestion in the city center.

New commercial/business development will largely be centered in the vicinity of the new POE, San Luis II; along the ASH between Avenue E and Avenue A; and along Avenue B from the ASH to the planning area boundary, as identified in Figure 3-6 from the San Luis General Plan.

Corridors such as Avenue J, Avenue E, and Avenue B are identified as activity and business centers because they are continuations of the POEs and also provide access to agricultural production areas and to the communities of Somerton and Yuma. More intense land uses, including higher density residential and mixed-use development, are generally planned at key intersections and along these corridors.

According to the City of San Luis 2010 General Plan, Yuma County exports the most agricultural products of any other county in Arizona. "Because agriculture is historically important to the area for economic and employment reasons, it is critical that these areas be protected and maintained." This goal is shared by the City of Yuma, whose General Plan includes similar sentiments as one of seven overriding goals for the entire plan, stating that "by promoting concentrated urban development, the resulting urban pattern minimizes encroachment on the prime agricultural lands in the Gila and Yuma Valleys." Agricultural land use accounts for a large portion of the study area, particularly west of Avenue D (Figure 3-6); therefore protection of these lands should be considered when alternatives for the Yuma Expressway are being considered.

Figure 3-6: City of San Luis Future Land Use Plan



Source: City of San Luis General Plan, 2011



Cocopah Indian Reservation

The Cocopah Indian Tribe created an independent organization called the Cocopah Indian Housing and Development (CIHAD) in 2006, to help increase the amount of home ownership throughout the reservation. Funding from U.S. Department of Agriculture (USDA), U.S. Department of Housing and Urban Development (HUD), bank loans, among others, has made it possible for CIHAD to introduce new housing development to all three sections of the Reservation: North, West, and East. Most recently, a 24-unit multi-family low-income apartment complex was completed with the help of USDA, and another 40 units are in the development process using HUD's Section 184 Mortgage Guarantee Program.

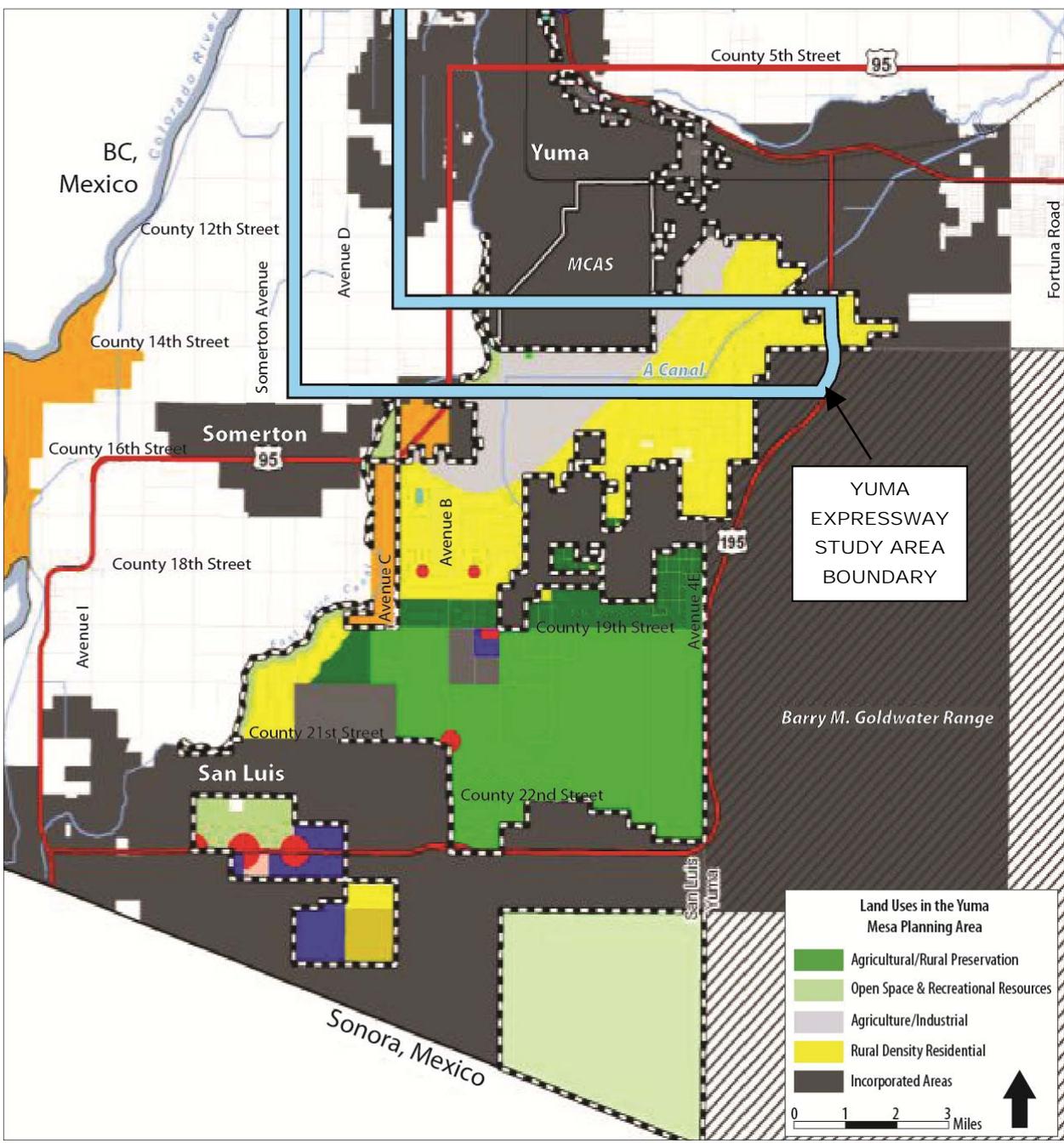
Yuma County

The Yuma County 2020 Comprehensive Plan, completed in 2012, acknowledges the uncertainty of future population and housing growth due to the current unstable economy. However, the plan does identify a series of planning areas where future development may occur. Unincorporated land uses within the study area are defined within three of these designated planning areas: Yuma Mesa, Yuma Valley, and Northwest (NW) Yuma, as shown in Figure 3-7 and Figure 3-8.

Lands above County 18th Street, including those within the Yuma Expressway study area, are almost entirely privately held land with the most prevalent uses including Agricultural/Rural Preservation, Rural Density Residential, Agriculture/Industrial, and Low Density Residential. Avenue D is almost completely surrounded by the land use designation Agricultural/Rural Preservation. Land uses east of Avenue D, between County 12th Street and the Colorado River include both Low Density and Estate Density Residential (Figure 3-8). There are a few older, higher density subdivisions located in this planning area; however future development trends are expected to maintain the rural character that currently dominates the local housing market.

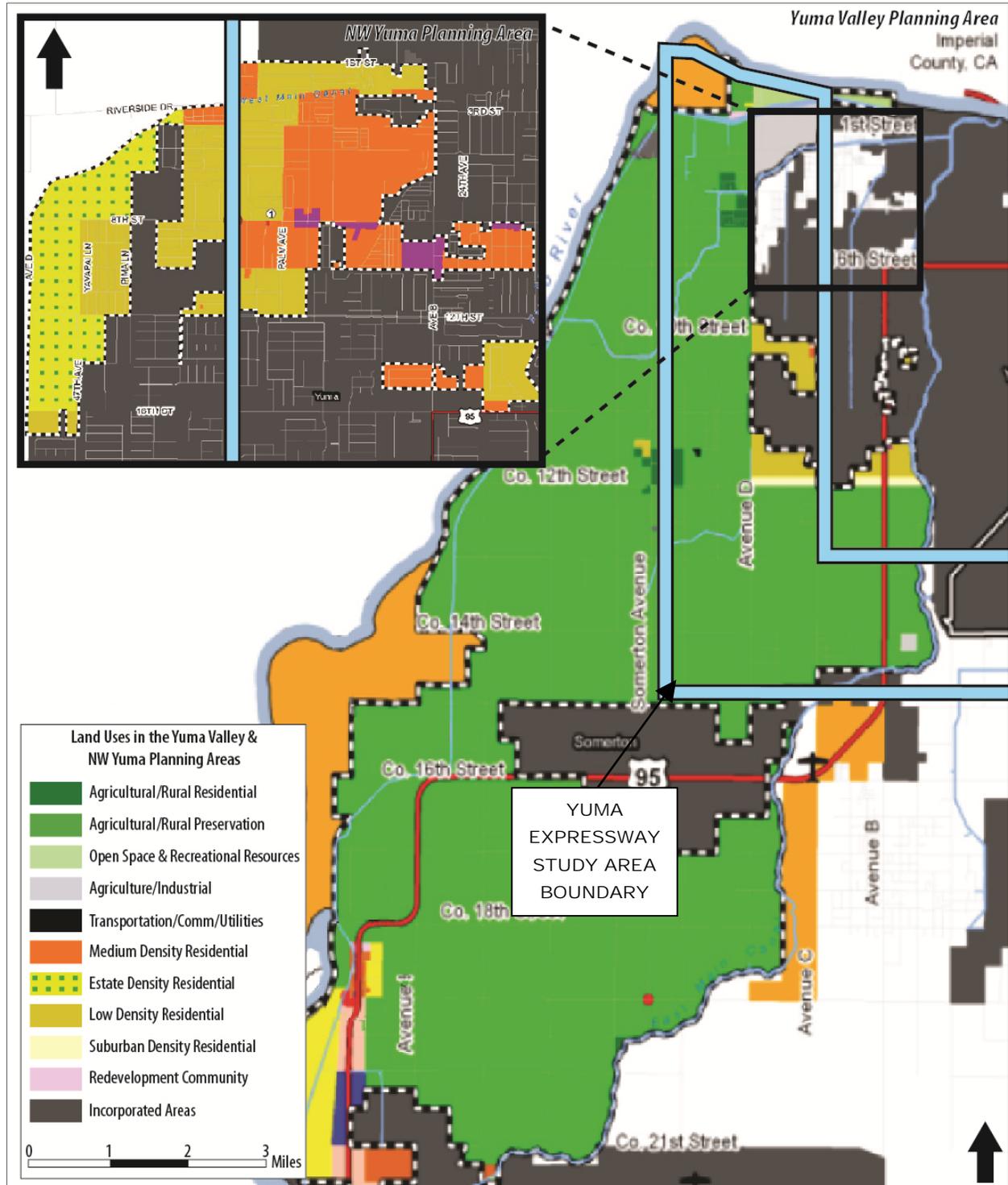
Agriculture/Industrial land uses are concentrated along County 14th Street, directly south of the MCAS-Yuma. The majority of Rural Density Residential is located on either side of County 14th Street, towards the Barry M. Goldwater Range, between Avenue 3E and SR 195 (Figure 3-7). The close proximity of the MCAS-Yuma airfield and the boundary of the Barry M. Goldwater Range both limit the amount of development that can occur within the Noise Exposure and Compatibility Overlay.

Figure 3-7: Yuma County: Yuma Mesa Planning Area Land Use Map



Source: Yuma County 2020 Comprehensive Plan

Figure 3-8: Yuma County: Yuma Valley & NW Yuma Planning Areas Land Use Map



Source: Yuma County 2020 Comprehensive Plan



Imperial County

According to the Land Use Element of the Imperial County General Plan, population in the unincorporated areas of Imperial County tends to concentrate in agricultural areas and in recreation/retirement communities such as Winterhaven. Winterhaven is a Census Designated Place (CDP), located in the southeastern corner of the county, where I-8 crosses over the Colorado River and into Arizona. The Imperial County Land Use Map designates nearly the entire surrounding area as agricultural. During the winter months, this community experiences a significant population increase, as visitors, often referred to as 'snowbirds', converge to the area to avoid cold, wet winters in other parts of the country.

3.1.2. Current Ongoing Studies

In addition to the general plans produced by each jurisdiction, there are various other ongoing studies that may impact the Yuma Expressway Corridor Study. All of the studies listed below are in the initial stages of examining current conditions and future conditions. There is minimal information that can be incorporated in the Yuma Expressway Corridor Study.

Yuma County Rail Corridor Study

The overall purpose of the Yuma County Rail Corridor Study currently being conducted is “to evaluate if there is any interest and supporting economic benefit for a rail and commodity logistics center in the Yuma Region.” Recently momentum for this type of transportation has been generated from discussions on a potential deep sea port at Punta Colonet, Baja California, Mexico. This study will evaluate potential based on both short- and long-term opportunities. Short-term opportunities look into identifying economic drivers that could sustain short-rail options with expansion capabilities in the future. Long-term opportunities look at the logistics and cost/benefits of creating a major rail line with an inland port option.

Arizona-Sonora Border Master Plan

In 2010, more than 23 million people were processed through Arizona's six border crossings. At each port of entry, heavy congestion and security issues affect daily pedestrian, commercial, and vehicular traffic traveling across the border. In response, Arizona Department of Transportation (ADOT) and the Federal Highway Administration (FHWA) are collaborating with the State of Sonora, Mexico, the Ministry of Communications and Transport (Secretaria de Comunicaciones y Transportes) and several other local, state and federal agencies to develop the Arizona-Sonora Border Master Plan, an integrated transportation master plan aimed at improving efficiency and effectiveness at the border crossings.

Avenue E: SR 195 to County 18th Street Design Concept Report (South County Connection)

Yuma County is in the early stages of assembling information for the Avenue E Design Concept Report (DCR) to provide access from County 18th Street and Avenue D to County 23rd Street and Avenue E. It is anticipated that the study will provide an environmental document as well as 30% plans in the final deliverable. At this time there are no plans or ongoing studies in place to connect the Avenue E DCR to the Yuma Expressway.



Binational San Luis Transportation Study

ADOT is currently conducting the Binational San Luis Transportation Study. The study area covers Ambos San Luis and incorporated portions of San Luis, Arizona and San Luis Rio Colorado, Mexico. Both the San Luis I and San Luis II POE are within the study area. Major routes include U.S. 95 and SR 195 in the U.S., as well as Federal 2 and Sonora 40 and 3 in Mexico. The purpose of this study is to “develop an integrated Long-Range Multi-Modal Transportation Plan, which includes evaluating and identifying infrastructure and improvements at San Luis POE I.” To date, existing and future conditions have been documented, and an Origin-Destination Survey was completed to better understand the daily travel characteristics and patterns between the two cities, to surrounding communities (i.e. Somerton and Yuma), and even to the region (i.e. Phoenix).

Imperial County Draft 2012 Long Range Transportation Plan Update

Imperial County is in the process of updating the 2007 Imperial County Long Range Transportation Plan (LRTP) to account for changes in population, housing, trade as well as changes in land use developments. The Draft version of the LRTP was available for comment in January of 2013, comments were due January 25, 2013 and anticipated approval in February of 2013. A complete update to Imperial County's LRTP is scheduled for FY 2013-14. The improvements to the I-8/SR 86 Transportation Interchange (TI) are expected to be included in the Imperial County LRTP.

East Cocopah Reservation Circulation Plan

The Cocopah Tribe and ADOT are conducting a study to develop a Circulation Plan for the East Cocopah Reservation in Yuma County. The Circulation Plan will include multimodal recommendations for bicycle, pedestrian, equestrian, public transportation and roadway projects. The final report will recommend multimodal transportation improvement projects for the East Cocopah Reservation.

City of Somerton Road Diet Evaluation

The City of Somerton is currently conducting a study to evaluate the conditions of the existing roadways along with the changes that will be needed for the future within the city limits. The information will be used to help update the YMPO Regional Transportation Plan.

3.1.3. Future Socio-Economic Conditions

This section documents the socio-economic assumptions of the 2010-2033 YMPO Regional Transportation Plan (RTP) and provides updated population details based on the 2010 Census. Future socio-economic conditions in YMPO planning area were assessed by analyzing population and employment projections for the years 2010 and 2033 based on the growth rate utilized in the RTP. These socio-economic projections provide the basis for the following chapter which addresses future traffic conditions and the deficiencies in the network which may justify the proposed Yuma Expressway.



Due to recent fluctuations in development and growth, the assumed regional population and employment in the future year will be provided as threshold values identifying when improvements may be justified. This approach allows for correction. Should the actual growth rate be different from that assumed in the model (detailed below), the recommended improvements may be needed earlier or later than the projected year.

Future Demographic Conditions

The most recent RTP model was developed prior to the publication of the 2010 Census information. Therefore, it is important to update the future socio-economic conditions reflecting any changes in population and employment.

Table 3-1 documents the model’s estimated 2009 population, the model’s estimated 2010 population, and the actual 2010 population.

Table 3-1: Existing Population Data

Area	Population			2010 Percent Difference
	2009 ¹ (Model)	2010 ² (Model)	2010 ³ (Census)	
City of San Luis	27,387	28,322	25,505	-11.0%
City of Somerton	10,236	10,532	14,287	26.3%
City of Yuma	100,703	102,286	93,064	-9.9%
Other Incorporated Areas within YMPO Planning Area ⁴	4,595	4,652	5,896	21.1%
Unincorporated Areas within YMPO Planning Area	59,241	60,254	56,999	-5.7%
Total YMPO Planning Area	202,162	206,154	195,751	-5.3%

¹ 2010-2033 YMPO Regional Transportation Plan (RTP)
² Calculated
³ 2010 U.S. Census
⁴ Includes: Town of Wellton, Fort Yuma Indian Reservation, and Cocopah Indian Reservation
Source: 2010 U.S. Census, RTP

As detailed in this table, there are slight discrepancies in the projected versus actual 2010. In order to normalize the future data for this study, the growth rate from the model is applied to the actual 2010 population in order to calculate the future population. Table 3-2, shows estimated 2033 population and the annual growth rate from the 2010-2033 YMPO Regional Transportation Plan.



Table 3-2: Annual Population Projections and Growth Rates

Area	Population		Annual GR ³	Percent Increase
	2010 ¹	2033 ²		
City of San Luis	25,505	55,209	3.4%	116%
City of Somerton	14,287	27,552	2.9%	93%
City of Yuma	93,064	133,227	1.6%	43%
Other Incorporated Areas within YMPO Planning Area ⁴	5,896	7,844	1.2%	33%
Unincorporated Areas within YMPO Planning Area	56,999	84,200	1.7%	48%
Total YMPO Planning Area	195,751	306,937	1.9%	57%

¹ 2010 U.S. Census
² Calculated using 2010-2033 YMPO (RTP) Growth Rate and 2010 U.S. Census Population Data
³ 2010-2033 YMPO Regional Transportation Plan (RTP)
⁴ Includes: Town of Wellton, Fort Yuma Indian Reservation, and Cocopah Indian Reservation
Source: 2010 U.S. Census, RTP

By 2033, the population of Yuma County is projected to grow to over 300,000 people, a 57.0% increase from 2010. A large portion of projected growth will occur in the cities of San Luis and Somerton. The City of San Luis’s population is projected to increase the most by more than 115%; the City of Somerton’s by nearly 93%.

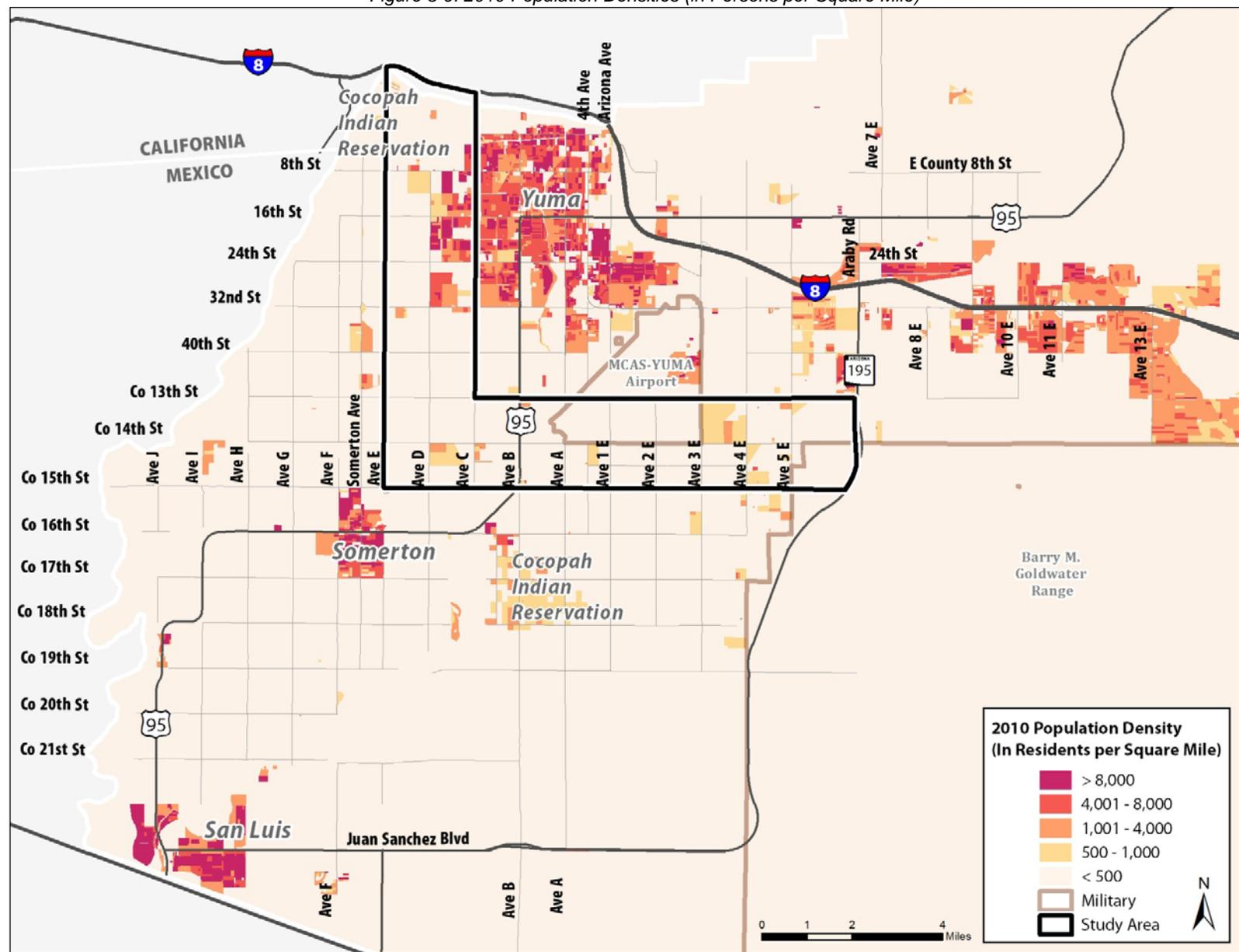
Because Yuma County is a popular winter destination for ‘snowbirds,’ or people who migrate to desert areas from colder climates, local population counts fluctuate seasonally. Significantly higher populations are found throughout this area during the winter months than the summer months. Calculations in Table 3-2 account for these higher populations. In addition, ‘snowbirds’ are predominantly elderly, and therefore it will be necessary for jurisdictions to continue to provide supporting infrastructure and services relating to health care, education, and recreation in the future.

Figure 3-9 and Figure 3-10 illustrate the population densities, by 2010 U.S. Census Block, for 2010 and 2033, respectively. Growth is concentrated in the city centers of San Luis, Somerton and Yuma. In all three locations, the number of census blocks predicted to exceed 8,000 residents per square mile increases. According to the 2010 Census, this population density is much higher than the averages for all three jurisdictions:

- Yuma → 773.7 persons per square mile
- Somerton → 1,959.8 persons per square mile
- San Luis → 796.3 persons per square mile

It is important to note that there is a linear limitation to this model. By using a growth rate to extrapolate population growth, areas throughout Yuma County with no recorded residents as of 2010 will remain empty through the calculation; therefore “new-growth” census blocks are not accounted for.

Figure 3-9: 2010 Population Densities (in Persons per Square Mile)

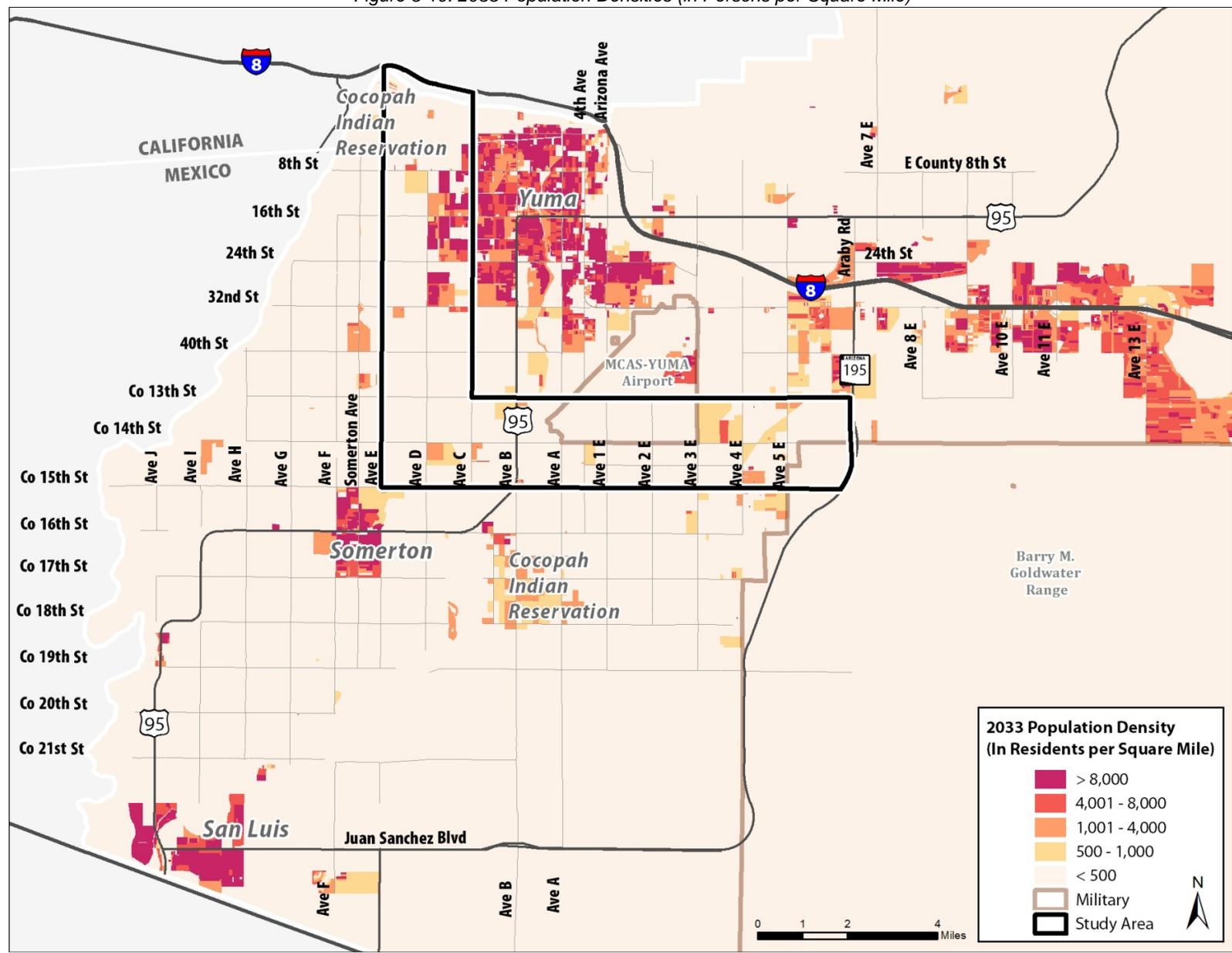


Source: Parsons Brinckerhoff, 2010; Arizona State Land Department (ASLD), 2008; US Census 2010



95

Figure 3-10: 2033 Population Densities (in Persons per Square Mile)



Source: Parsons Brinckerhoff, 2010; ASLD, 2008; US Census 2010



Future Employment Conditions

The YMPO planning area employment estimates for the year 2033 were extrapolated based on the 2009 and 2033 employment data from the RTP. Table 3-3 presents employment projections for 2033, as well as 2009 employment data from the RTP model.

Table 3-3: Employment Projections and Growth Rates

Area	Employment		Annual GR ²	Percent Increase
	2009 ¹	2033 ¹		
City of San Luis	4,857	9,488	2.83%	95.3%
City of Somerton	1,984	3,949	2.91%	99.0%
City of Yuma	46,050	68,316	1.66%	48.4%
Other Incorporated Areas in the YMPO Planning Area	2,186	3,581	2.08%	63.8%
Unincorporated Areas in the YMPO Planning Area	14,465	32,917	3.49%	127.6%
Total YMPO Planning Area	69,542	118,252	2.24%	70.0%

¹ 2010-2033 YMPO Regional Transportation Plan Final Report

² Calculated

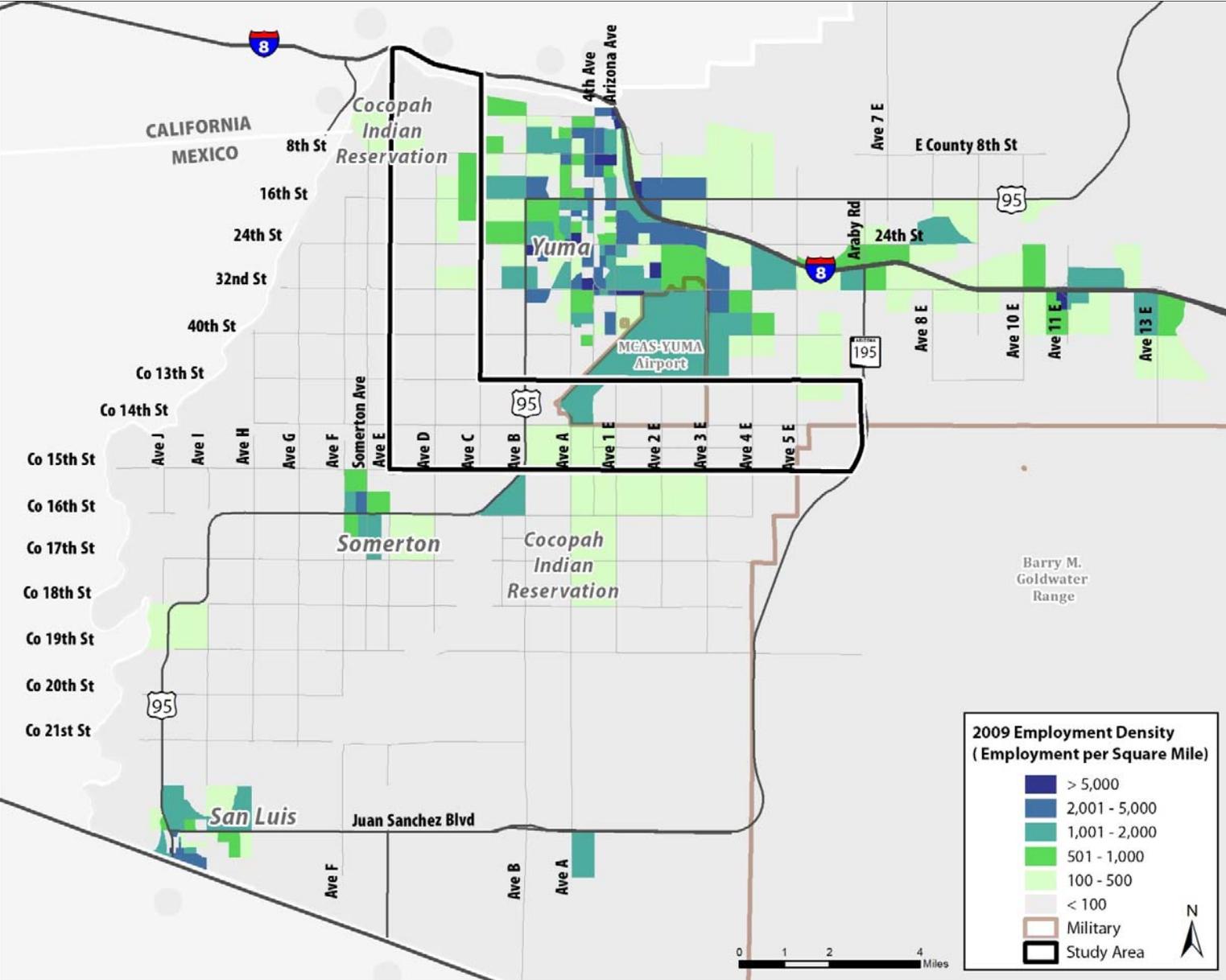
Source: RTP

Employment projections in San Luis and Somerton show a percent increase of greater than 90% by 2033. This growth is the highest by a large margin compared to the City of Yuma and other incorporated areas in the YMPO planning area as shown in Table 3-3.

Figure 3-11 and Figure 3-12 illustrate employment densities by Traffic Analysis Zone (TAZ) for the years 2009 and 2033, respectively. Employment densities are clustered in the cities of Yuma, San Luis and Somerton.

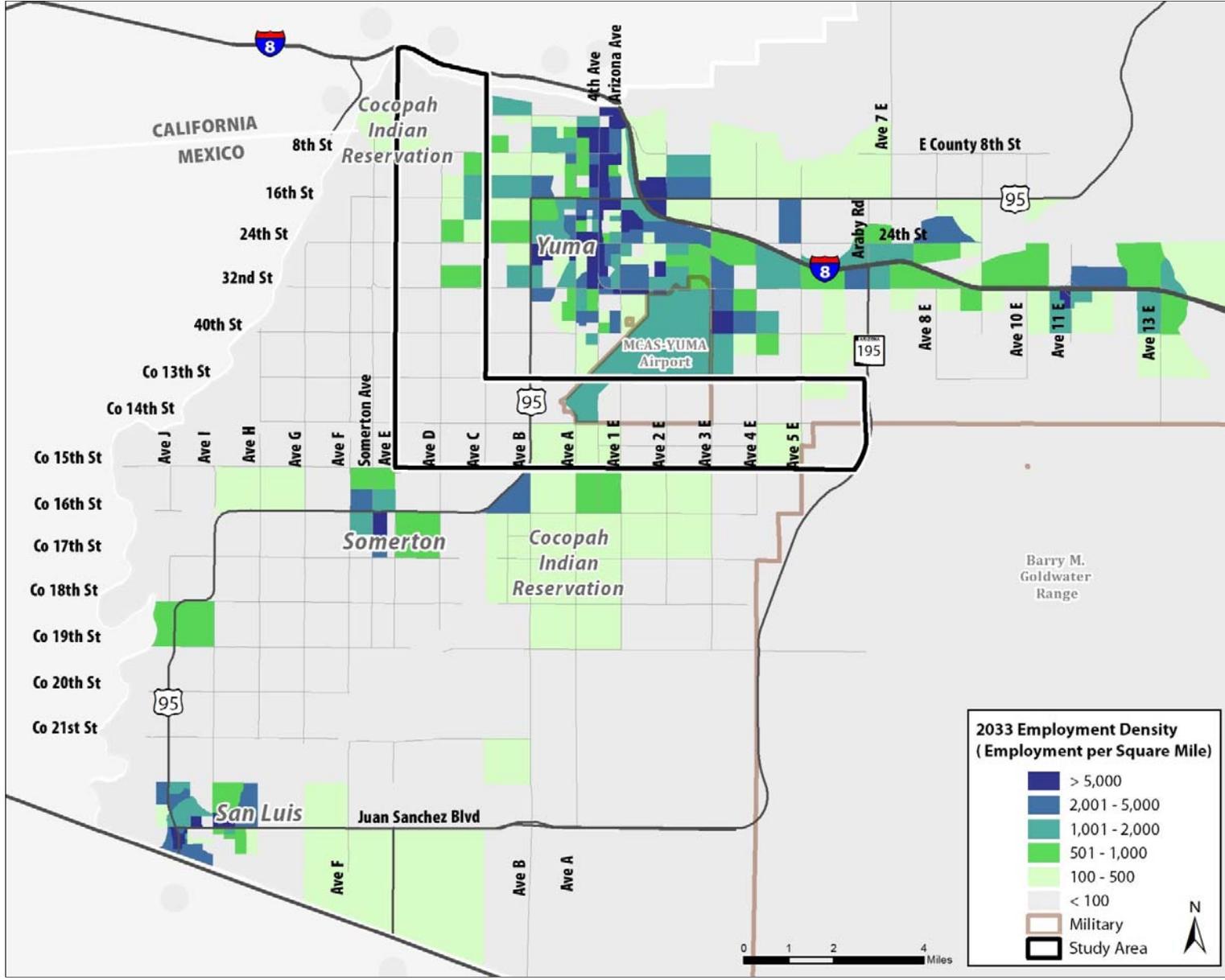
As additional employment opportunities are created within this region, the subsequent economic growth will continue to occur in these three areas.

Figure 3-11: 2009 Employment Density (per Square Mile)



Source: Parsons Brinckerhoff, 2010; ASLD, 2008; YMPO, 2011

Figure 3-12: 2033 Employment Density (per Square Mile)



Source: Parsons Brinckerhoff, 2010; ASLD, 2008; YMPO, 2011

3.1.4. Future Transportation Infrastructure

Future Roadway Functional Classification

The future 2033 roadway functional classifications in the adopted 2010 RTP were compared to the existing roadway functional classifications to determine any significant changes that may affect this study. The functional classifications for the majority of both Avenue D and County 14th Street within the study area change from Rural Minor Collector to Rural Major Collector. Several other Rural Minor Collectors become Rural Major Collectors as well, including portions of Avenue C and County 12th Street. Local streets, closer to downtown Yuma, show a change to Urban Collectors or Rural Minor Arterials.

Figure 3-13 illustrates the 2033 roadway functional classification as established in the 2010 RTP model.

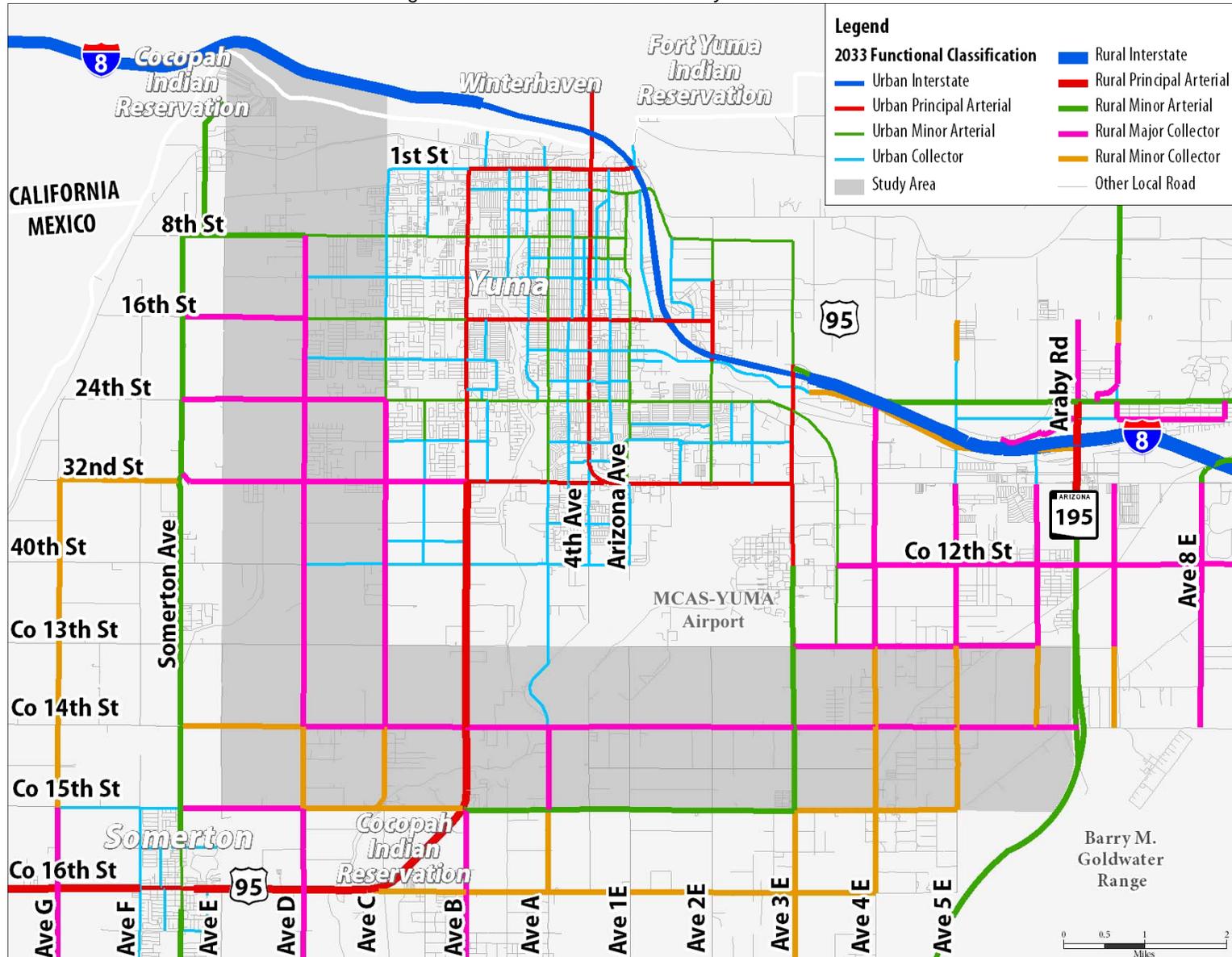
Future Roadway Speed Limits

In the 2033 network model, the speed limits within the study area and its vicinity are similar to existing conditions. The speed limit for the majority of both County 14th Street and Avenue D within the study area is 50 miles per hour (MPH). This speed limit matches current conditions. Figure 3-14 illustrates the 2033 roadway speed limits as established in the 2010 RTP model.

Future Roadway Lane Configuration

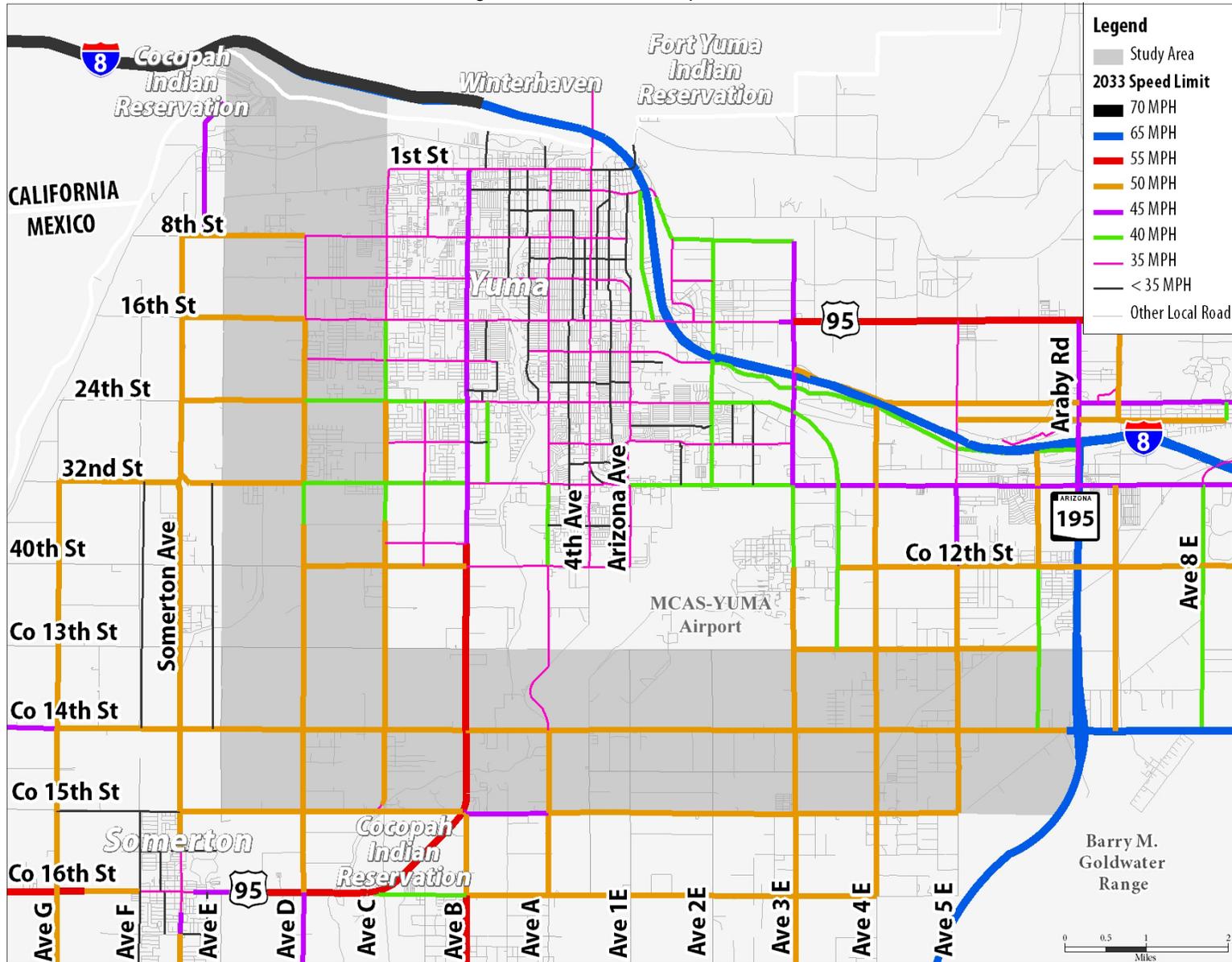
The number of roadway lanes programmed in the 2010 RTP model for 2033 is forecast to generally remain the same within the study area, except in the close vicinity of downtown Yuma where some roadways will be widened. As depicted in Figure 3-15, the future number of lanes on 16th Street, 24th Street, and 32nd Street will increase from two to three lanes in each direction. It is assumed that Avenue D and County 14th Street will still have a total of two lanes in 2033.

Figure 3-13: 2033 Functional Roadway Classifications



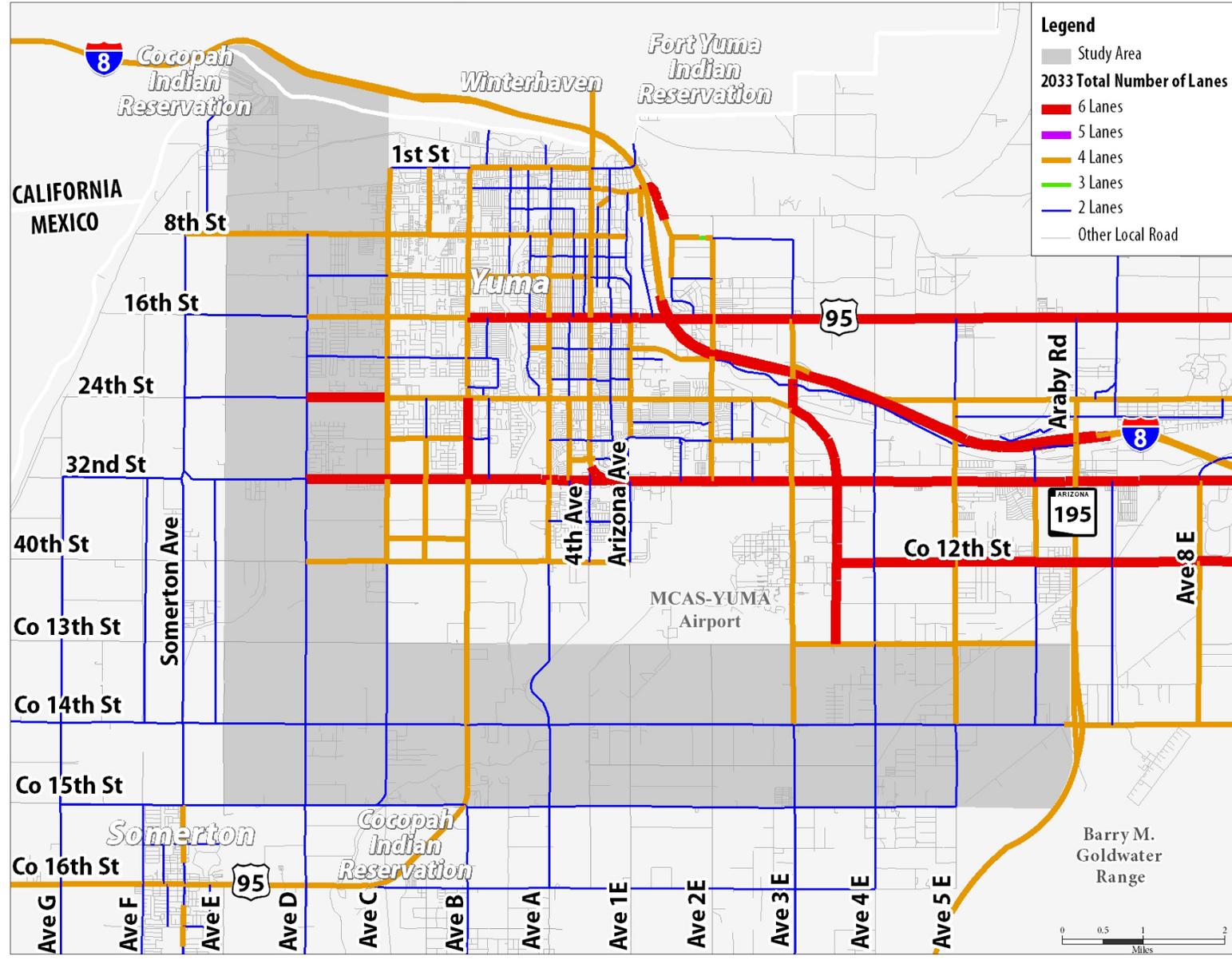
Source: 2010 RTP Model. 2005 MRP

Figure 3-14: 2033 Future Speed Limits



Source: 2010 RTP Model, 2005 MRP

Figure 3-15: 2033 Future Number of Lanes



Source: 2010 RTP Model, 2005 MRP

3.2. Future Traffic and Deficiencies

3.2.1. Traffic Conditions

Level of Service (LOS), for existing (2009) and future (2033) traffic, was calculated using extrapolation based on the 2010 YMPO Average Annual Traffic Data, as well as the 2033 traffic projections from the 2010 YMPO model. Figure 3-16 and Figure 3-17 present the LOS for 2009 and 2033, respectively. An assessment of the future roadway conditions allows a determination of when the roadways within the study area begin to have a reduced LOS, indicating additional roadway improvements may be justified.

As indicated in Figure 3-16, most roadway segments in the Yuma area currently experience a LOS A. With the population and employment growth projected in the 2010 RTP, which is based on local adopted plans, the overall roadway system in Yuma area will show a slight decrease in operating conditions by 2033; however the conditions will still remain at an acceptable LOS C or better.

Within the study area, the 2033 LOS along Avenue D is projected to operate at LOS B for most segments south of 40th Street, with approximately 7,200 vehicles per day. County 14th Street is projected to operate at LOS B for most segments within the study area.

3.2.2. Deficiencies

Generally, when a roadway is at LOS D or worse, roadway capacity improvements may be warranted. In this case, the additional capacity may be accommodated with improvements on the failing segments, or on parallel facilities serving the same travel demand.

Based on the assessment of traffic conditions in 2033, the roadways within the study area for this project will perform at a LOS B or better. Therefore, given the current adopted land use plans and corresponding future socio-economic conditions, significant roadway capacity improvements are not warranted.

Changes in land use assumptions may yield increases in the population and employment projections, thus potentially increasing the demand for significant roadway improvements within the study area. Therefore, the regional population was projected to indicate when the current roadway capacity may deteriorate to warrant an additional facility. Figure 3-18 presents the growth of traffic volumes on Avenue D and County 14th Street versus the population growth for the entire YMPO region.

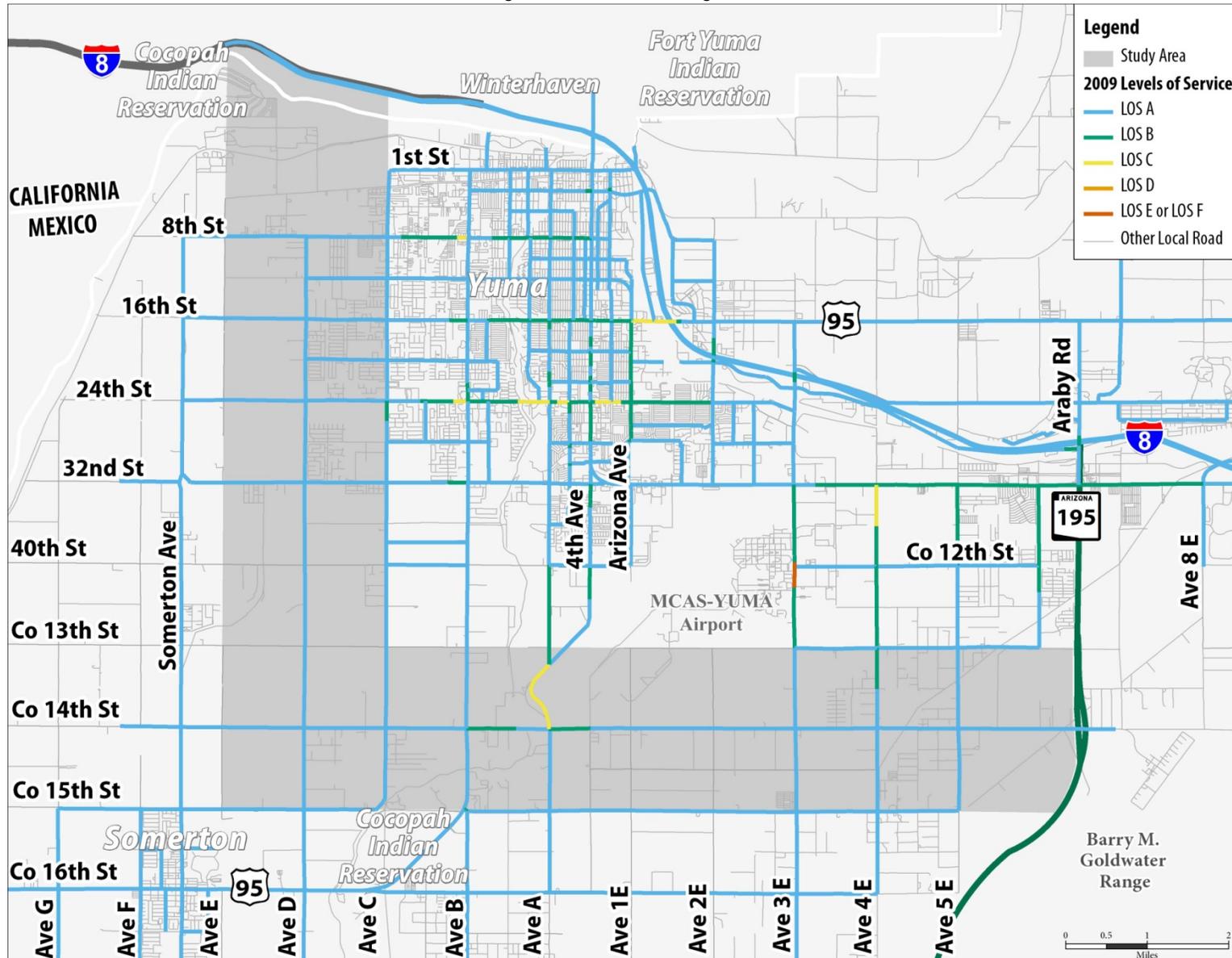
The regional population data shown in Table 3-1, along with the 2009 and 2033 traffic data, are used to plot the growth before the year 2033. The traffic and population growth after 2033 are extrapolated using the same growth rate.

Figure 3-18 shows that the rural two-lane Avenue D and County 14th Street can serve the community well past 2033. When the population for the Yuma region attains 367,400, County



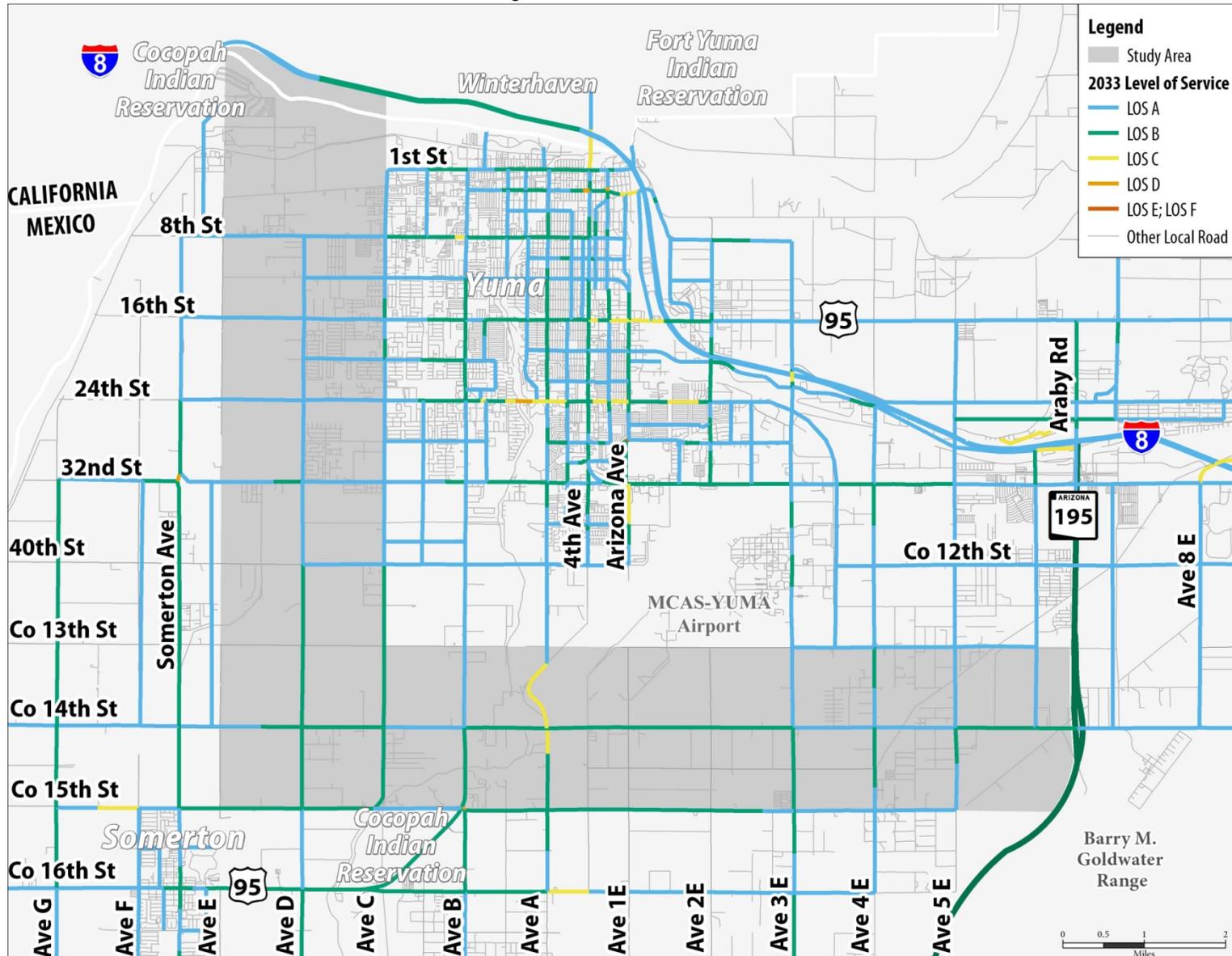
14th Street will require a capacity improvement, while the LOS for Avenue D will not fail until the population reaches 418,300. Once the population for the YMPO region reaches these levels it will require County 14th Street and Avenue D to either be upgraded or possibly another roadway constructed parallel to County 14th Street and Avenue D.

Figure 3-16: 2009 Existing LOS



Source: Adjusted based on 2010 RTP YMPO Existing Model

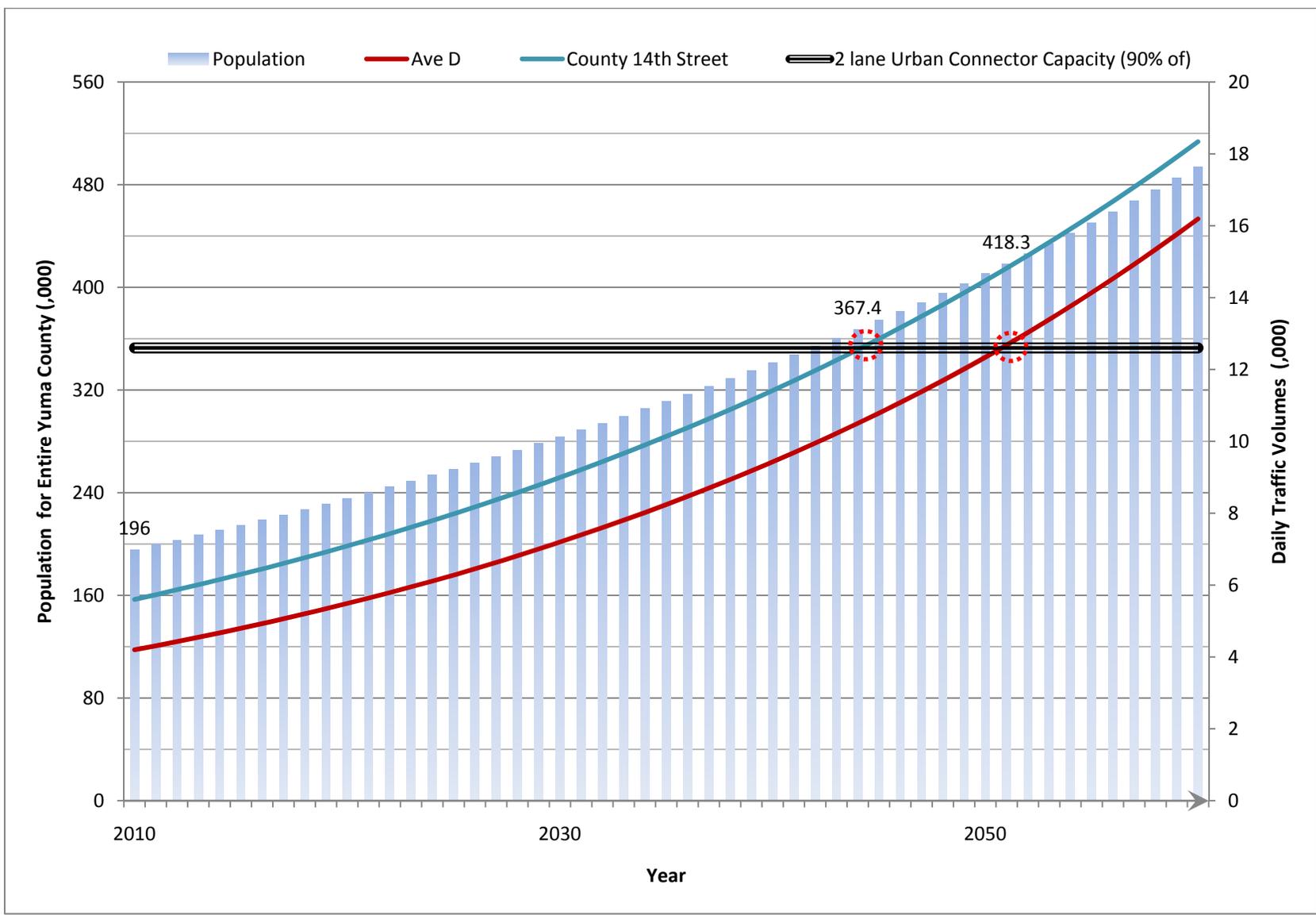
Figure 3-17: 2033 Future LOS



Source: Adjusted based on 2033 RTP YMPO Existing Model. 2005 MPR



Figure 3-18: Daily Traffic Growth on Avenue D and County 14th Street vs. YMPO Regional Population



4. Corridor Alternatives

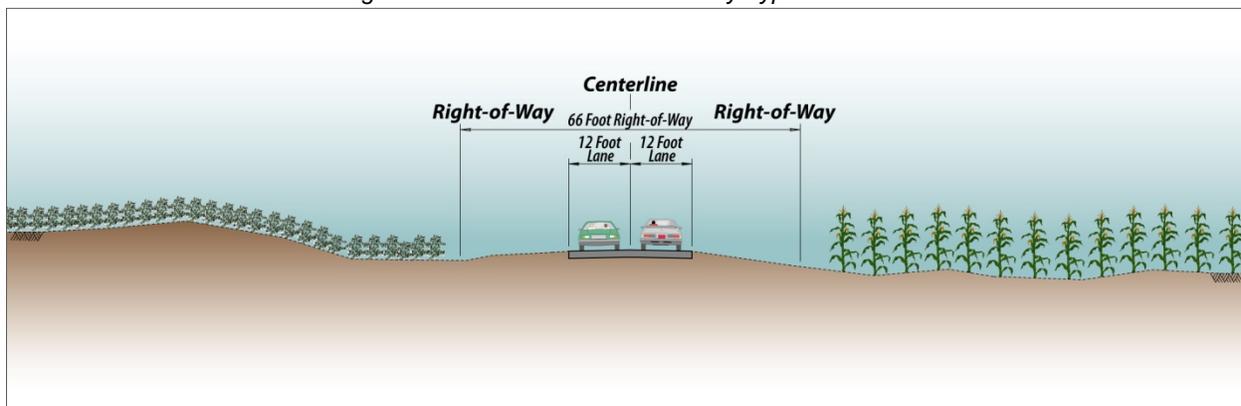
This chapter presents the various alternatives and the method of evaluation for the preferred alternative. The alternatives consist of combinations of multiple typical sections/roadway types, discussed in Section 4.1, and various corridors, discussed in Section 4.2. The alternatives were evaluated in Sections 4.3 and 4.4 and presented to the Technical Advisory Committee (TAC) to ensure consensus with the methodology used to identify a preferred alternative.

4.1. Preliminary Typical Sections

In order to present multiple alternatives for analysis, five typical sections are evaluated. Each typical section contains its own set of requirements including roadway width, right-of-way width, access limits, intersection spacing, and frontage road requirements. The existing Rural Two Lane (No-build) typical section is presented for the use of comparison to the remaining four typical sections.

4.1.1. Existing Rural Two Lane

Figure 4-1: Rural Two Lane Roadway Typical Section



Pavement Configuration

The existing pavement is approximately 24-feet wide with unpaved shoulders. The pavement material is a combination of asphaltic concrete and chip seal. The lane configuration is typically one 12-foot lane in each direction with no median. At a few of the major intersections there are left turn lanes. Figure 4-1 shows the typical section of the Rural Two Lane roadway.

Design Speed

According to the 2011 American Association of State Highway and Transportation Officials (AASHTO) Geometric Design of Highways and Streets, the design speed of a Local Rural Road on level terrain similar to the study area varies between 30 miles per hour (mph) and 50 mph. The majority of the existing Avenue D and County 14th Street roadways are posted at 50 mph.

Traffic Control

Rural Two Lane roadways typically have intersections that are controlled by stop signs. These intersections can be either 2-way or 4-way stop configurations. There are some locations within the study area that the existing County 14th Street roadway uses signal-controlled intersections. Currently there are traffic signals installed at Avenue B (US 95), Avenue A, Avenue 3E, Avenue 5E and State Route (SR) 195.

Right-of-Way

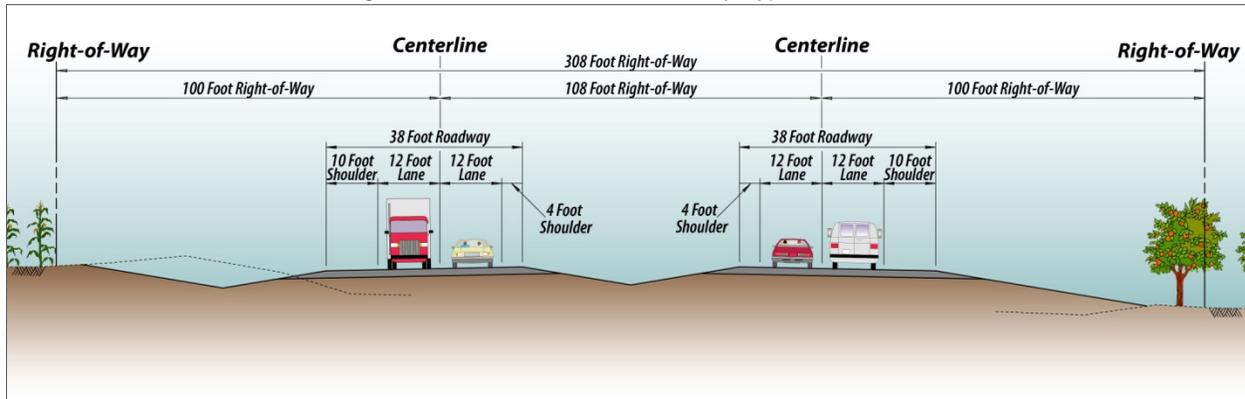
The standard right-of-way width for a Rural Two Lane roadway is 66 feet. Additional right-of-way is typically required at the intersections when additional lanes are added.

Access Requirements

Access to adjacent residences, businesses, and agriculture is typically not restricted on a Rural Two Lane roadway. This allows traffic from the adjacent land along the roadway to enter and exit the roadway at any location. Frontage roads are not required for a Rural Two Lane roadway due to the low volume of traffic and high accessibility of the roadway type. Rural Two Lane roadways typically have major road crossings at one-mile intervals. As land use changes over time the roadways may experience additional intersections based upon increased development.

4.1.2. Rural Freeway

Figure 4-2: Rural Four Lane Freeway Typical Section



Pavement Configuration

The typical section for a Rural Four Lane Freeway from the Arizona Department of Transportation (ADOT) Roadway Design Guidelines consists of two 38-foot wide roadways with an open median. The pavement is approximately 38-feet wide with paved shoulders on both sides. The pavement material can be either asphaltic concrete or portland cement concrete (typically in rural applications asphaltic concrete is preferred). The lane configuration is typically two 12-foot lanes in each direction with a 10-foot outside shoulder and a 4-foot inside shoulder. Figure 4-2 shows the typical section of the Rural Four Lane Freeway.

Design Speed

According to most recent version of the ADOT Roadway Design Guidelines, the design speed of a Controlled Access Highway on level terrain similar to the study area should be 75 mph.

Traffic Control

Rural Four Lane Freeways typically do not have intersections located at grade. Major road crossings will be grade-separated with or without interchanges.

Right-of-Way

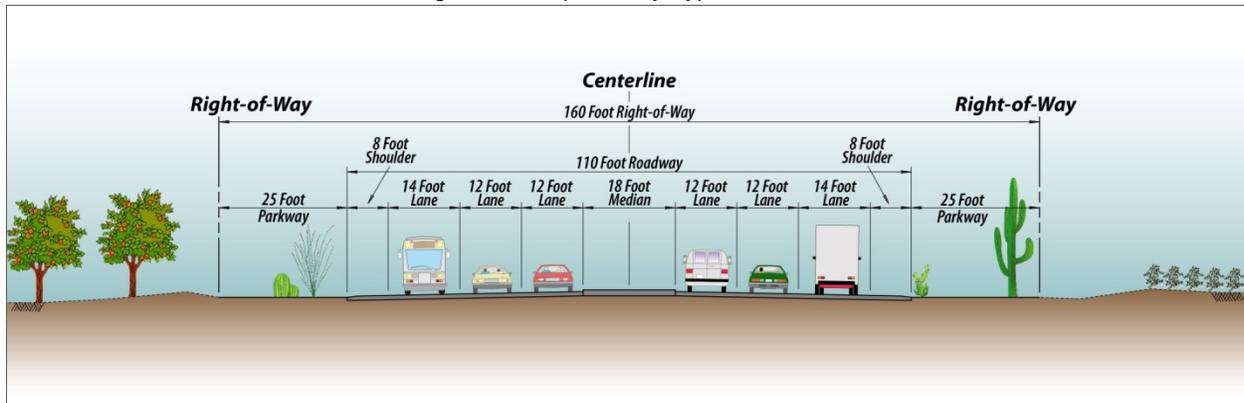
The standard right-of-way width for a Rural Four Lane Freeway is approximately 308 feet. Additional right-of-way is typically required at the grade-separated crossings when space is required for entrance and exit ramps along with provisions for the grade-separated crossing.

Access Requirements

Access to adjacent residences, businesses, and agriculture is restricted on a Rural Four Lane Freeway. Traffic can only enter and exit the facility at the grade separated crossings. In order to maintain access to the land adjacent to the facility, frontage roads may be required in certain situations. Under other circumstances the existing Rural Two Lane roads can remain and serve as local access. Rural Four Lane Freeways typically have major road crossings at two mile intervals.

4.1.3. Expressway

Figure 4-3: Expressway Typical Section



Pavement Configuration

The typical section for an Expressway is defined in the City of Yuma standards and consists of a 110-foot wide roadway with raised median. The Expressway will have a minimum of four travel lanes (two in each direction). The ultimate section consists of six travel lanes (three in each direction). The interior travel lanes are 12-feet wide and the outside travel lanes are 14 feet wide. The outside shoulders shall be a minimum of 8 feet wide. Figure 4-3 shows the typical section of the Expressway.

Design Speed

The 2005 City of Yuma Major Roadways Plan establishes the design speed of an Expressway between 45 mph and 55 mph

Traffic Control

Expressways may have signal-controlled intersections or intersections controlled by stop signs (yield signs for channelized right-turns) on the intersecting roads. Major road crossings may be grade-separated with or without interchanges.

Right-of-Way

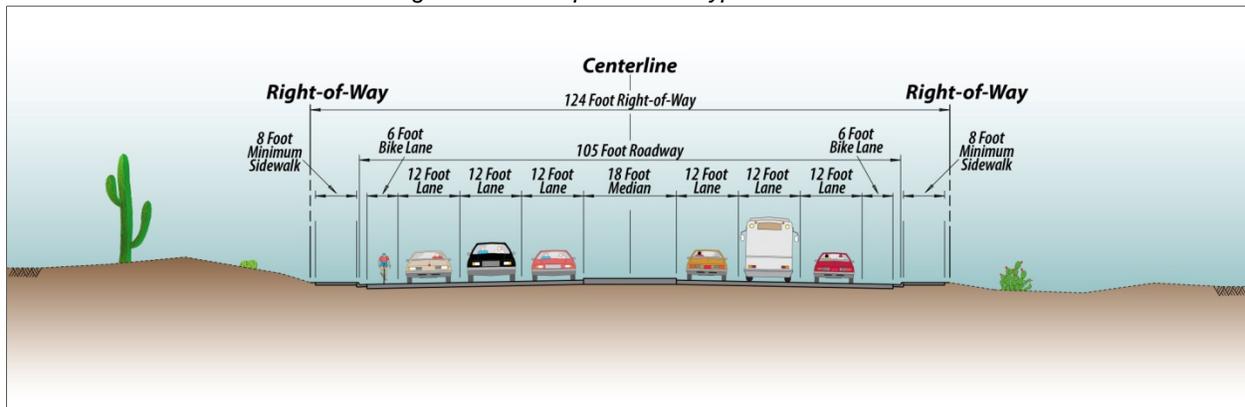
The standard right-of-way width for an Expressway is approximately 160 feet. Additional right-of-way is typically required at the intersections. If the Expressway requires a frontage road system extra right-of-way width will be necessary.

Access Requirements

Access to adjacent residences, businesses, and agriculture is restricted on an Expressway. It is the intention of an Expressway to only allow traffic to enter and exit the facility at the major intersections. In order to maintain access to the land adjacent to the facility, frontage roads may be required in some situations. In other conditions the existing Rural Two Lane roads can remain and serve as local access. Expressways typically have major road crossings, at one mile intervals.

4.1.4. Principal Arterial

Figure 4-4: Principal Arterial Typical Section



Pavement Configuration

The typical section for a Principal Arterial is defined in the City of Yuma standards and consists of a 105-foot wide roadway, measured from face of curb to face of curb, with an 18-foot raised median. The Principal Arterial will have a minimum of six travel lanes (three in each direction). The travel lanes are 12 feet wide with a 6-foot bike lane located on the outside. In addition, the Principal Arterial requires installation of an 8-foot sidewalk. Figure 4-4 shows the typical section of the Principal Arterial.

Design Speed

The 2005 City of Yuma Major Roadways Plan establishes the design speed of a Principal Arterial at 45 mph in most situations.

Traffic Control

Principal Arterials may have signal-controlled intersections or intersections controlled by stop signs (yield signs for channelized right-turns) at intersecting roads.

Right-of-Way

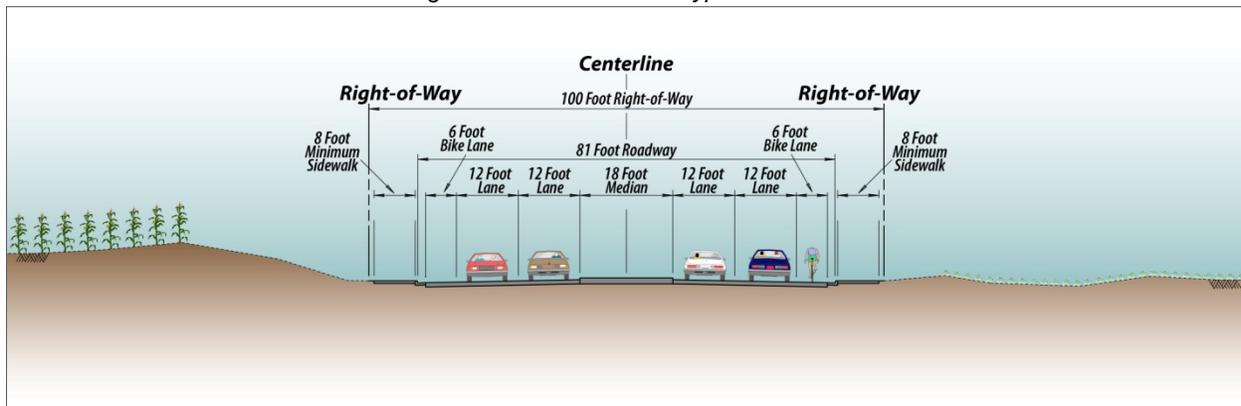
The standard right-of-way width for a Principal Arterial is approximately 124 feet. Additional right-of-way is typically required at the intersections.

Access Requirements

Principal Arterials shall be median-divided. Median breaks will be provided only at roadway intersections at approximately ¼ mile intervals. Median openings will not be permitted for local roads or driveways, and no more than one driveway will be allowed on a Principal Arterial from a given property or from adjacent properties under common or related ownership, development or subdivision. No new residential driveways will be permitted on Principal Arterials.

4.1.5. Minor Arterial

Figure 4-5: Minor Arterial Typical Section



Pavement Configuration

The typical section outlined for use for a Minor Arterial is defined in the City of Yuma standards and consists of an 81-foot wide roadway, measured from face of curb to face of curb, with an 18-foot raised median. The Minor Arterial will have a minimum of four travel lanes (two in each direction). The travel lanes are 12 feet wide with a 6-foot bike lane located on the outside. In addition, the Minor Arterial requires installation of an 8-foot sidewalk. Figure 4-5 shows the typical section of the Minor Arterial.

Design Speed

The 2005 City of Yuma Major Roadways Plan establishes the design speed of a Minor Arterial between 35 mph and 45 mph in most situations

**Traffic Control**

Minor Arterials may have signal-controlled intersections or intersections controlled by stop signs (yield signs for channelized right-turns) on the intersecting roads.

Right-of-Way

The standard right-of-way width for a Minor Arterial is approximately 100 feet. Additional right-of-way is typically required at the intersections.

Access Requirements

Minor Arterials shall be median-divided and median breaks will be provided only at roadway intersections at approximately $\frac{1}{4}$ mile intervals. Median openings may or may not be permitted for local roads. Median openings will not be permitted for driveways, and no more than one driveway will be allowed on a Minor Arterial from a given property or from adjacent properties under common or related ownership, development or subdivision.

4.2. Preliminary Corridors

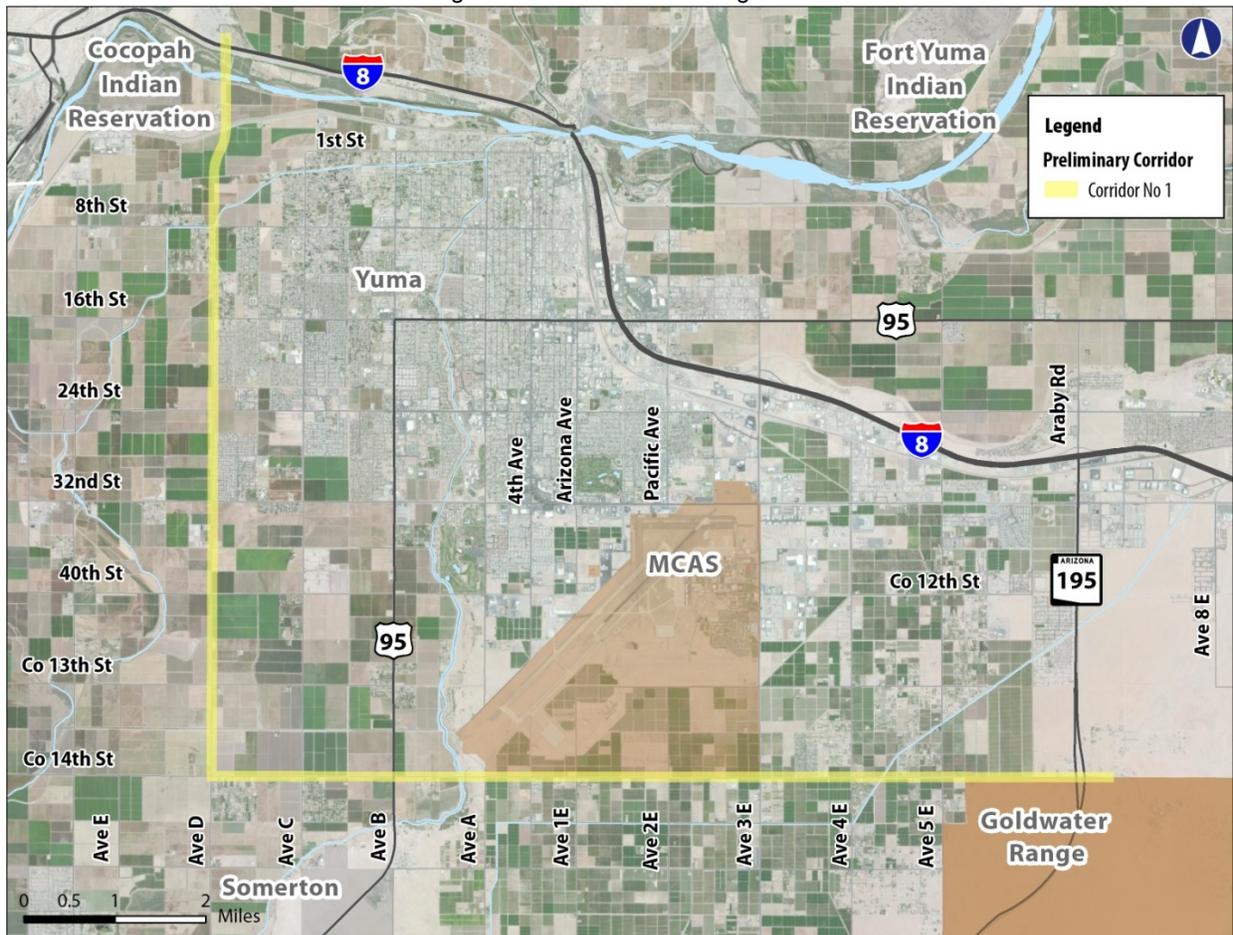
To supplement the four new typical sections presented earlier, three potential corridors within the study area are presented. Each corridor is shown as a swath approximately 600 feet wide. The additional width will allow future planning to work around existing and future constraints as the study area changes in the years to come.

4.2.1. Corridor No. 1 (Along Existing Ave D and County 14th Street)

General Description

Corridor No. 1 generally follows the existing Avenue D and County 14th Street alignments. Corridor No. 1 connects with Interstate-8 (I-8) in California near the Avenue D alignment, then travel towards the south over the Colorado River for approximately 1 mile where it crosses the Main Outlet Drain Extension (MODE) and the south levee of the Colorado River. Then, the Corridor shifts slightly to the west and lines up on the existing Avenue D alignment. Once on the Avenue D alignment, the Corridor runs due south approximately 6.5 miles to County 14th Street. At County 14th Street the Corridor turns to the east along existing County 14th Street and runs approximately 9.5 miles east to SR 195. Figure 4-6 shows Corridor No. 1.

Figure 4-6: Corridor No. 1 Alignment





Segment Details

In order to further discuss the various constraints and issues of Corridor No. 1, it has been broken into three sections.

1. Connection to I-8 and Colorado River Crossing
2. Avenue D (Colorado River to County 14th Street)
3. County 14th Street (Avenue D to SR 195)

Each segment of Corridor No. 1 is discussed below.

Connection to I-8 and Colorado River Crossing

Corridor No. 1 will require the construction of a new transportation interchange at the future intersection of the Yuma Expressway and I-8. The specific interchange layout will be determined in future studies. The design and construction of the new transportation interchange will have to meet California Department of Transportation (Caltrans) requirements. Caltrans Highway Design Manual requires that “The minimum interchange spacing shall be 1.5km in urban areas, and 3.0km in rural areas.” Possible interchange layouts may include a conventional diamond or a fully directional interchange. The site is approximately 2 miles west of the existing Winterhaven Drive Transportation Interchange (TI).

With the construction of a new connection to I-8, a new crossing of the Colorado River will have to be constructed to provide a connection between Arizona and California. Several environmental challenges will be encountered to cross the Colorado River. Corridor No. 1 crosses the Colorado River between the Cocopah Indian Reservation and the Yuma West Wetlands Park (former City of Yuma landfill). There are various endangered species and habitats located along the Colorado River that may be impacted by a new bridge crossing. A 404 permit from the Army Corps of Engineers will be required.

According to the US Department of Agriculture (USDA) soil maps, most of the soil within the study area adjacent to the Colorado River is classified as a silt-loam. Although this type of soil is not optimum for bridge construction, this soil type still allows for bridge construction. According to the soil maps the existing 4th Avenue bridge is constructed in similar soils and has been in existence for 50 plus years. In addition, it is understood that there may be residual materials from the Arizona watershed flooding of 1993 that fed to the Colorado River, resulting in an estimated 5 million cubic yards of river-borne deposits of various nature that may impact bridge construction.

Avenue D (Colorado River to County 14th Street)

Corridor No. 1 is centered on the existing Avenue D alignment. Corridor No. 1 will pass alongside various residential developments between 8th Street and 32nd Street. Some of the residential developments located along Avenue D include Valley Citrus Estates, Cibola Five, Sierra Sunset, and Barkley Ranch. In addition to the residential developments, Corridor No. 1 is located alongside existing prime agriculture fields. The level of impact to the adjacent residential



areas and agriculture areas are discussed in the evaluation of alternatives sections of the report, Sections 4.3 and 4.4.

County 14th Street (Avenue D to SR 195)

Similar to the Avenue D portion of this Corridor, Corridor No. 1 is centered on the existing County 14th Street alignment. Corridor No. 1 will pass alongside various residential developments between Avenue D and SR 195. Some of the residential developments located along County 14th Street include Collins Country Manor, Sunglow Ranchettes, Sun Leisure Estates, Tierra Mesa Estates, Riebe Ranchetts and Mesa Dunes Estates. Corridor No. 1 is located alongside existing prime agriculture fields in the Yuma Valley from Avenue D to approximately Avenue A. As the Corridor approaches Avenue A, it rises up onto the Yuma Mesa near the south end of the Marine Corps Air Station (MCAS)/Yuma Airport runway.

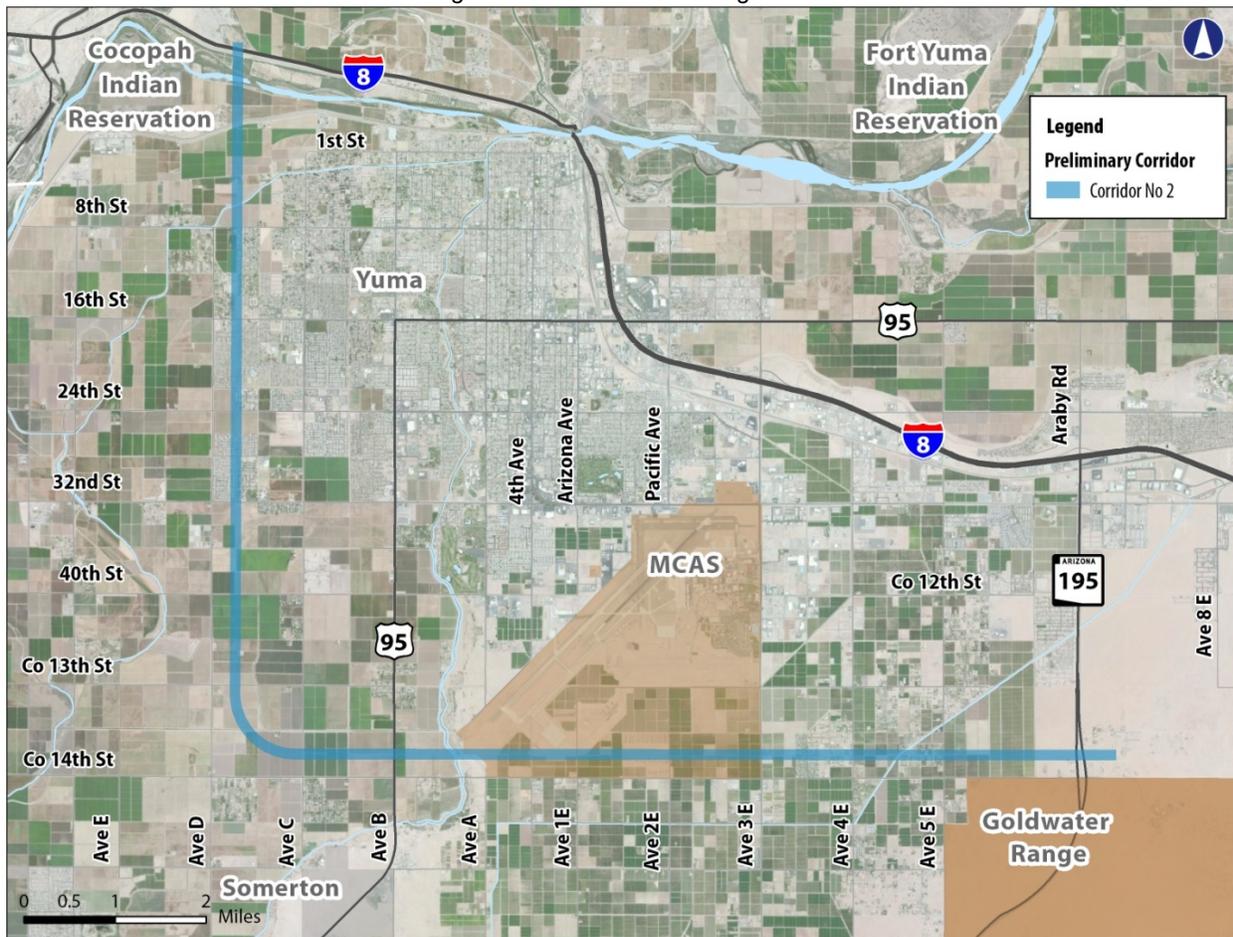
As Corridor No. 1 extends east, along County 14th Street, the Corridor will be adjacent to the MCAS property to the north, between Avenue A and Avenue 3E. In addition to the proximity to the MCAS property, Corridor No. 1 is adjacent to the Barry M. Goldwater Range, between Ave 5E and SR 195. Having an Expressway immediately adjacent to or near to MCAS and Barry M. Goldwater Range can provide an effective buffer against intense residential development occurring at the boundaries of these military sites.

4.2.2. Corridor No. 2 (¼ Mile East of Avenue D and ¼ Mile North of County 14th Street)

General Description

Corridor No. 2 is similar to Corridor No. 1 except the alignment of Corridor No. 2 is to be located off of the existing Avenue D and County 14th Street roadways. This will allow the existing roadways to continue to function as local access. Corridor No. 2 will be offset from Corridor No. 1 about ¼ mile to the east and north. The Corridor will generally parallel the existing Avenue D and County 14th Street alignments. Corridor No. 2 will connect with I-8 in California near the Avenue D alignment. Then Corridor No. 2 travels south (approximately 7.5 miles) to ¼ mile north of County 14th Street. Just short of County 14th Street Corridor No. 2 turns to the east and runs roughly 9.5 miles to SR 195. Figure 4-7 shows Corridor No. 2.

Figure 4-7: Corridor No. 2 Alignment



Segment Details

In order to further discuss the various constraints and issues of Corridor No. 2, it has been broken into three sections.

1. Connection to I-8 and Colorado River Crossing
2. ¼ Mile East of Avenue D (Colorado River to County 14th Street)
3. ¼ Mile North of County 14th Street (Avenue D to SR 195)

Each segment of Corridor No. 2 is discussed below.

Connection to I-8 and Colorado River Crossing

Corridor No. 2 will also require the construction of a new transportation interchange at the future intersection of the Yuma Expressway and I-8. The specific layout will have to be determined in future studies. The design and construction of the new transportation interchange will have to meet Caltrans requirements. Caltrans Highway Design Manual requires that “The minimum

interchange spacing shall be 1.5km in urban areas, and 3.0km in rural areas.” Possible interchange layouts may include a conventional diamond, or possibly a fully directional interchange. The site is approximately 1¾ miles west of the existing Winterhaven TI.

With the construction of a new connection to I-8, a new crossing of the Colorado River will have to be constructed to provide a connection between Arizona and California. Several environmental challenges will be encountered to cross the Colorado River. Similar to Corridor No. 1, Corridor No. 2 crosses the Colorado River between the Cocopah Indian Reservation and the Yuma West Wetlands Park (former City of Yuma landfill). There are various endangered species and habitats located along the Colorado River that may be impacted by a new bridge crossing. A 404 permit from the Army Corps of Engineers will be required.

According to the USDA soil maps, most of the soil within the study area adjacent to the Colorado River is classified as a silt-loam. Although this type of soil is not optimum for bridge construction, this soil type still allows for bridge construction. According to the soil maps the existing 4th Avenue bridge is constructed in similar soils and has been in existence for 50 plus years. In addition, it is understood that there may be residual materials from the Arizona watershed flooding of 1993 that fed to the Colorado River, resulting in an estimated 5 million cubic yards of river-borne deposits of various nature that may impact bridge construction.

¼ Mile East of Avenue D (Colorado River to County 14th Street)

Corridor No. 2 is parallel to the existing Avenue D alignment, and will pass through various residential developments between 8th Street and 32nd Street. Some of the residential developments located within Corridor No. 2 include Valley Citrus Estates, Donovan Estates, Verde Valley Acres, Chantal Estates, Cibola Five, Sierra Sunset, Falls Ranch, and Barkley Ranch. In addition to the impacts on some of the existing residential developments, Corridor No. 2 will pass through portions of prime agriculture. The level of impact to the adjacent residential areas and agriculture areas will be discussed in the evaluation of alternatives sections of the report in Chapter 4.

¼ Mile North of County 14th Street (Avenue D to SR 195)

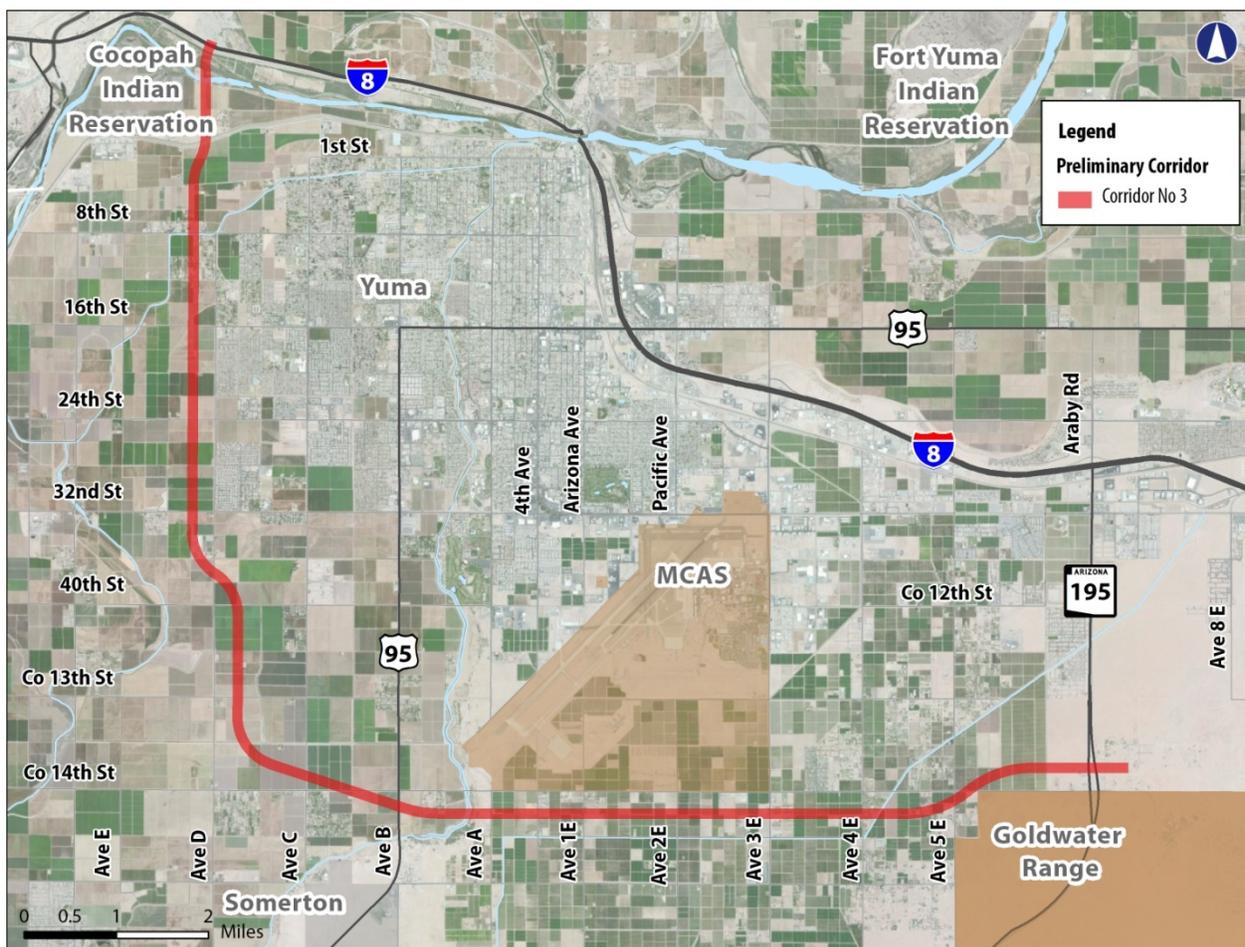
Similar to the Avenue D leg of this Corridor, Corridor No. 2 is parallel to the existing County 14th Street alignment. Corridor No. 2 will conflict with the MCAS between Avenue A and Avenue 3E. In addition it will pass through various residential developments located on the north side of County 14th Street between Avenue 3E and SR 195. Some of the residential developments located within Corridor No. 2 include Tierra Mesa Estates, Tierra Bonita, King Ranch and Mesa Dunes Estates. Corridor No. 2 is located within existing prime agriculture fields in the Yuma valley from Avenue D to approximately Avenue A. As the Corridor approaches Avenue A, it rises up onto the Yuma Mesa and conflicts with the south end of the MCAS/Yuma Airport runway. Despite the impacts to the MCAS property, Corridor No. 2 avoids the Barry M. Goldwater Range between Ave 5E and SR 195. Having an Expressway immediately adjacent to or near to MCAS and the Barry M. Goldwater Range can provide an effective buffer against intense residential development occurring at the boundaries of these military sites. However the impacts to MCAS will outweigh any benefits that the buffering affect may create.

4.2.3. Corridor No. 3 – Meandering (¼ Mile off of Avenue D and County 14th)

General Description

Corridor No. 3 is located off of the existing Avenue D and County 14th Street roadways, allowing the existing roadways to continue to function as local access. Corridor No. 3 will be offset about ¼ mile from the existing Avenue D and County 14th Street. The Corridor will generally parallel the existing Avenue D and County 14th Street alignments. The intent of Corridor No. 3 is to avoid as many existing and future constraints as possible, yet remain in the project study area. Corridor No. 3 will connect with I-8 in California, west of the Avenue D alignment. Corridor No. 3 will then travel towards the south approximately 3.5 miles, ¼ mile west of existing Avenue D roadway, past 32nd Street (County 11th Street). Once Corridor No. 3 reaches the 32nd Street (County 11th Street), the Corridor switches to the east side of Avenue D and continues another 2.5 miles to a point ¼ mile north of County 14th Street. At this point Corridor No. 3 heads southeast for 2 miles to switch to the south side of County 14th Street. Once on the south side of County 14th Street, between Avenue A and Avenue B, the Corridor continues east for 5.5 miles. As Corridor No. 3 approaches Avenue 4E, it crosses back to the north of County 14th Street and continues east to intersect with SR 195. Figure 4-8 shows Corridor No. 3.

Figure 4-8: Corridor No. 3 Alignment





Segment Details

In order to further discuss the various constraints and issues of Corridor No. 3, it has been broken into four sections.

1. Connection to I-8 and Colorado River Crossing
2. ¼ Mile West of Avenue D (Colorado River to 32nd Street)
3. ¼ Mile East of Avenue D (32nd Street to County 14th Street)
4. ¼ Mile South of County 14th Street (Avenue D to SR 195)

Each segment of Corridor No. 3 is discussed below.

Connection to I-8 and Colorado River Crossing

Corridor No. 3 will require the construction of a new transportation interchange at the future intersection of the Yuma Expressway and I-8. The specific layout will be determined in future studies. The design and construction of the new transportation interchange will have to meet Caltrans requirements. Caltrans Highway Design Manual requires that “The minimum interchange spacing shall be 1.5km in urban areas, and 3.0km in rural areas.” Possible interchange layouts may include a conventional diamond, or possibly a fully directional interchange. The site is approximately 2 miles west of the existing Winterhaven TI.

With the construction of a new connection to I-8 a new crossing of the Colorado River will have to be constructed to provide a connection between Arizona and California. Several environmental challenges will be encountered to cross the Colorado River. Similar to Corridor No. 1 and Corridor No. 2, Corridor No. 3 crosses the Colorado River between the Cocopah Indian Reservation and Yuma West Wetlands Park (former City of Yuma landfill). There are various endangered species and habitats located along the Colorado River that may be impacted by a new bridge crossing. A 404 permit from the Army Corps of Engineers will be required.

According to the USDA soil maps, most of the soil within the study area adjacent to the Colorado River is classified as a silt-loam. Although this type of soil is not optimum for bridge construction, this soil type still allows for bridge construction. According to the soil maps the existing 4th Avenue bridge is constructed in similar soils and has been in existence for 50 plus years. In addition, it is understood that there may be residual materials from the Arizona watershed flooding of 1993 that fed to the Colorado River, resulting in an estimated 5 million cubic yards of river-borne deposits of various nature that may impact bridge construction.

¼ Mile West of Avenue D (Colorado River to 32nd Street)

Between the Colorado River and 32nd Street Corridor No. 3 is ¼ mile west of the existing Avenue D alignment. Corridor No. 3 will pass through the Valley Citrus Estates residential development between 8th Street and 16th Street. In addition to the impacts on Valley Citrus Estates, Corridor No. 3 will also pass through portions of prime agriculture. The level of impact to the adjacent residential and agriculture areas will depend on the various combinations of typical sections and corridors discussed in the evaluation of alternatives sections of the report.



¼ Mile East of Avenue D (32nd Street to ¼ Mile North of County 14th Street)

Between 32nd Street and a ¼ mile north of County 14th Street, Corridor No. 3 is located ¼ mile west of the existing Avenue D alignment. Corridor No. 3 will pass through prime agriculture land. Once Corridor No. 3 has reached County 14th Street, it will turn east-southeast for 2 miles to avoid Collins Country Manor, and Sun glow Ranchettes and eventually head east, parallel to County 14th Street, between Avenue B and Avenue A.

¼ Mile South of County 14th Street (Avenue A to SR 195)

Between Avenue A and Avenue 4E, Corridor No. 3 is south of and parallel to the existing County 14th Street roadway. Corridor No. 3 will pass through or near the residential developments of Sun Leisure Estates, Riebe Ranchettes and Goldwater Range. As Corridor No. 3 continues east past Avenue 4E, it switches back to the north of existing County 14th Street, before connecting to SR 195.

4.3. Preliminary Evaluation of Alternatives

Using the four proposed typical sections presented in Section 4.1 (Rural Freeway, Expressway, Principal Arterial, and Minor Arterial) and the three proposed corridors presented in Section 4.2, 12 preliminary alternatives are evaluated using various criteria. In addition to the 12 preliminary alternatives, the no-build alternative is included in this preliminary round of alternative evaluation.

4.3.1. Proposed Alternatives

Table 4-1 shows how the alternatives will be presented. The Rural Two Lane (No Build) typical section will be carried throughout the alternative analysis. Table 4-1 graphically depicts the three corridor alternatives.

Table 4-1: Proposed Alternatives by Corridor

	CORRIDOR NO. 1 EXISTING AVE D & CO. 14th STREET	CORRIDOR NO. 2 ¼ MILE OFFSET EAST AND NORTH	CORRIDOR NO. 3 ¼ MILE OFFSET
RURAL TWO LANE (EXIST)	NO BUILD		
RURAL FREEWAY	1A	2A	3A
EXPRESSWAY	1B	2B	3B
PRINCIPAL ARTERIAL	1C	2C	3C
MINOR ARTERIAL	1D	2D	3D



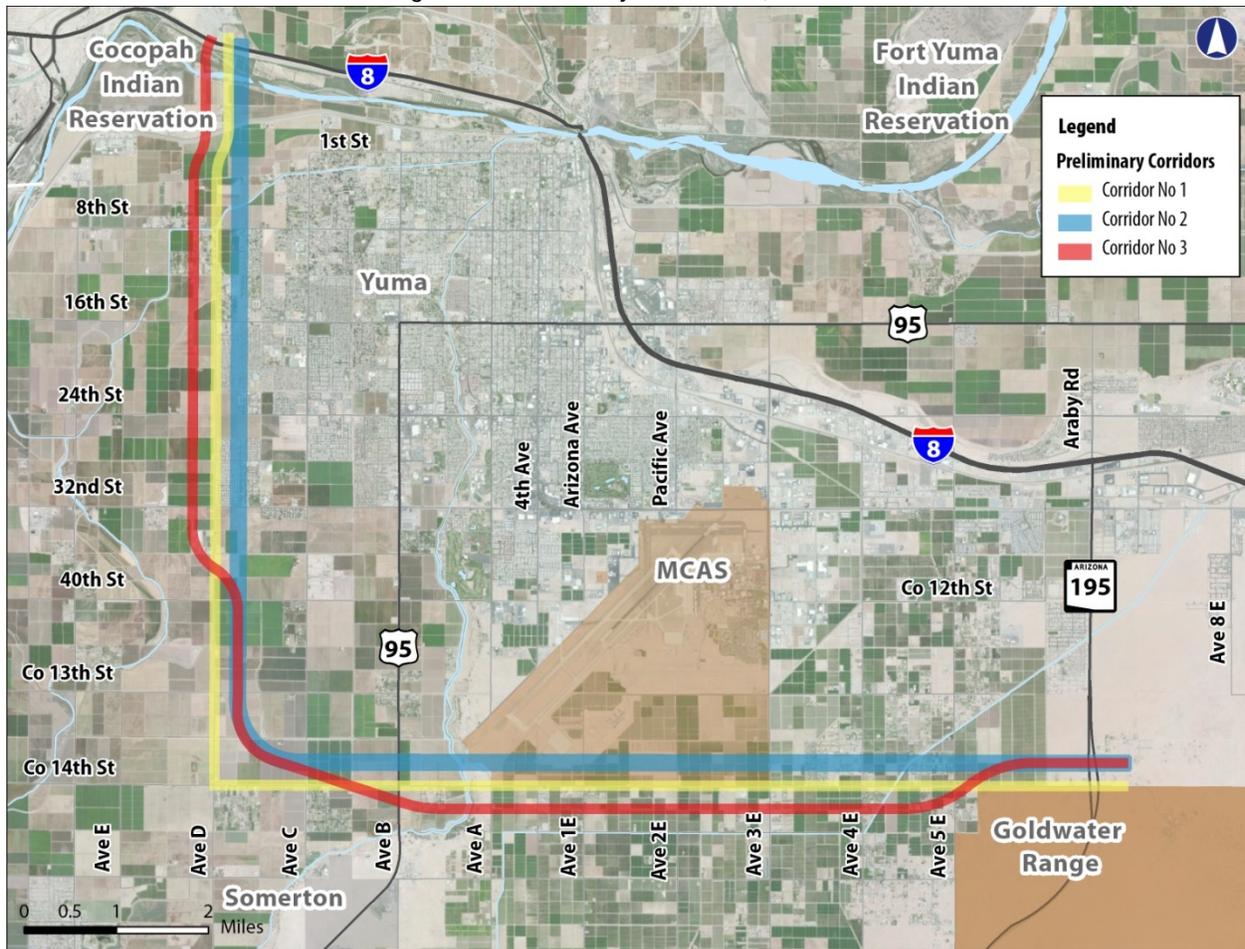
4.3.2. Preliminary Alternative Matrix/Evaluation

The goal of the Preliminary Alternative Matrix, provided in Table 4-2, is to reduce the number of alternatives presented so that a few feasible alternatives can be analyzed further into the Secondary Evaluation of Alternatives. Below is a summary of the criteria used to evaluate and compare the 12 Alternatives and No Build presented in Section 4.1.

- Impacts to Future Traffic Capacity
- Impacts to Existing Residences
- Impacts to Existing Agriculture
- Impacts to MCAS-Yuma Airport
- Access/Frontage Roads/Duplication of Facility Type
- Environmental Impacts

Each alternative was evaluated against each criteria item and was given a score between one and three. A score of one represents a positive evaluation for the alternative while a score of three represents a negative evaluation for that criteria item. In addition to the score a corresponding description was given. A “Major” was given three points, a “Moderate” was given two points, and a “Minimal” was given one point. All points will be added and the alternatives with the lowest score will be carried forward. In addition to the alternatives with the lowest score, the No Build alternative will be carried forward into the Secondary Evaluation of Alternatives.

Figure 4-9: Preliminary Corridors: 1, 2 and 3



Impacts to Future Traffic Capacity

Each alternative was evaluated to determine the additional traffic capacity in the future and the potential for congestion when the area becomes fully developed in the distant future. The type of facility/typical section has the largest influence on the future traffic capacity, while the locations of the actual corridors within the study area have much smaller effect on the capacity of the alternative. The alternatives that cannot move large volumes of vehicles were given a rating of “Major” while the alternatives that can provide large capacity increases over the existing were rated “Minimal”. For alternatives that use Corridor No. 1 and access controlled typical sections (Rural Freeway/Expressway) it is assumed that a frontage road system would be constructed with the facility.

Impacts to Existing Residences

Each alternative was evaluated to determine the level of impact to the existing residences that would fall within the corridor. The corridor and typical section combinations that cut directly through highly populated neighborhoods were given a “Major” impact rating, while corridor and typical section combinations that avoided the existing residential areas were given a “Minimal” rating.



Based on the information in Table 4-2, the only alternative that has a “Minimal” impact on the existing residences is Alternative 1D. This alternative is simply an upgrade of the existing Avenue D and County 14th Street to a minor arterial. Alternatives 1C, 3A, 3B, 3C, and 3D, had a “Moderate” effect on the existing residences.

Impacts to Existing Agriculture

Each alternative was evaluated to determine the level of impact to the existing agriculture that would fall within the corridor. The corridor and typical section combinations that cut directly through agriculture areas were given a “Major” impact rating, while corridor and typical section combinations that avoided the existing agriculture areas were given a “Minimal” rating. The only alternative that has a “Minimal” impact on the existing agriculture was Alternative 1D. Alternatives 2A, 2B, 1C, 2C, and 2D had a “Moderate” impact to agriculture, because they typically were located in residential areas.

Impacts to MCAS-Yuma Airport

Each alternative was evaluated to determine the level of impact to the existing MCAS and the future plans of MCAS. The corridor and typical section combinations that cut directly through the MCAS were given a “Major” impact rating, while corridor and typical section combinations that avoided the MCAS were given a “Minimal” rating. Alternatives 3A, 3B, 3C, and 3D were given a “Minimal” rating because they all avoid MCAS.

Access/Frontage Roads/Duplication of Facility Type

Each alternative was evaluated against the need to maintain access to the adjacent properties, the need for frontage roads, and to verify that the proposed alternative does not result in a duplication of similar roadway types within close proximity. The study area is located in an area of Yuma County where approximately 81% of the property is privately owned. Therefore access must be maintained to all parcels. Currently Avenue D and County 14th Street serve as direct access to and from all agriculture lands and many residences. Alternatives that either provide direct access or maintain the existing Avenue D and County 14th Street access were given a “Minimal” evaluation. Alternatives that require frontage roads or grade separated crossings were given a “Moderate” evaluation. In addition, alternatives that result in duplicate roadways with similar access characteristics were given a “Moderate” evaluation. Alternatives 1C, 1D, 2B and 3B were given a “Minimal” rating because they either allowed direct access to the new roadway or Avenue D and County 14th Street remained to in place.

Environmental Impacts

Each alternative was evaluated to determine the level of impact to the existing environmental justice populations, species of concern, prime and unique farmland, Colorado River crossing and air quality. With the exception of impacts to air quality and prime farmland, all the alternatives had a “Minimal” impact.

Environmental Justice Populations

Low-income and disabled populations in the study area are similar to the County and surrounding jurisdictions; therefore, the corridor alternatives will have minimal to no adverse

impacts on low-income populations. While there are small areas (census blocks) where elderly and racial/ethnic minorities constitute a majority of the population, any impacts from the three corridor alternatives will be minimal due to the low-density population distribution found throughout the study area.

Endangered Species

Potential riparian and wetland habitat for five special status species exists along the banks of the Colorado River. These species, shown in Figure 4-10 and listed below, could potentially be impacted by the proposed river crossing for each corridor alternative.

Federal Species of Concern

- Yuma Hispid Cotton Tat
- Yellow-billed Cuckoo

Arizona Wildlife of Special Concern

- Great Egret
- Snowy Egret
- Southwestern Willow Flycatcher
- Yuma Clapper Rail

Two other Species of Concern, the Western Burrowing Owl and the Flat-tailed Horned Lizard, are known to exist throughout the study area; therefore impacts to these species are also possible. It is important to note that foreseeable impacts to any of these species could be reduced, or even avoided with appropriate mitigation measures. East of the project study area (east of SR 195) Arizona Game and Fish expressed concerns about the possible impacts to the flat-tailed horned lizard habitat north and south of County 14th Street. During the DCR phase of the project the impacts will need to be documented before selecting the final corridor east of SR 195.

Figure 4-10: Yuma Clapper Rail, Flat-tailed Horned Lizard, Yellow-billed Cuckoo



Prime and Unique Farmland

Prime and unique farmland is located throughout the study area; therefore, some degree of impact will occur with each of the corridor alternatives. “Minimal” impacts are assumed with Corridor No. 1 because it is located in the more urban portion of the study, east of Avenue D



and north of County 14th Street. “Moderate” impacts are assumed for the other two corridors, which are located further west and south through existing farmland.

Air Quality

The City of Yuma and surrounding jurisdictions are classified as a Particulate Matter 10 (PM₁₀) Nonattainment Area by the U.S. Environmental Protection Agency. The term particulate matter includes both solid particles and liquid droplets found in air. Particles less than 10 micrometers in diameter (PM₁₀) tend to pose the greatest health concern because they can be inhaled and accumulate in the respiratory system.

Whether the existing roads (Avenue D and County 14th Street) are widened, or a new alignment is chosen for the Yuma Expressway, certain segments of the new roadway will end up closer to receptors such as homes and businesses. The decreased buffer distance could cause localized levels of increased emissions relative to the No Build option; however this would most likely be offset due to increases in traffic speeds and an overall reduction in congestion. Therefore, the proposed expressway is predicted to have a neutral overall impact on air quality in the Yuma area, neither elevating nor alleviating the PM₁₀ Nonattainment classification.

An appropriate level of environmental documentation will be needed during the next phase of project development to comply with the National Environmental Policy Act and the California Environmental Quality Act. The latter compliance would be needed due to the proposed connection to I-8 in California.

4.3.3. Alternatives for Secondary Evaluation

As a result of the Alternative Matrix presented in Table 4-2, various alternatives were either eliminated or retained for further analysis. Alternatives 1C, 1D, 3A, and 3B received the lowest scores in the preliminary evaluation. Therefore, these four alternatives, along with the No Build option, were carried forward into the secondary evaluation of alternatives. Each of these secondary alternatives are reviewed and further analyzed in Section 4.4 (Table 4-3). The alternatives that required the use of Corridor No. 2 were eliminated from further evaluation, due to the large impacts to MCAS-Yuma Airport.



Table 4-2: Preliminary Alternative Analysis Matrix

EVALUATION CRITERIA	NO BUILD	CORRIDOR #1				CORRIDOR #2				CORRIDOR #3			
		ALTERNATIVE 1A RURAL FREEWAY	ALTERNATIVE 1B EXPRESSWAY	ALTERNATIVE 1C PRINCIPAL ARTERIAL	ALTERNATIVE 1D MINOR ARTERIAL	ALTERNATIVE 2A RURAL FREEWAY	ALTERNATIVE 2B EXPRESSWAY	ALTERNATIVE 2C PRINCIPAL ARTERIAL	ALTERNATIVE 2D MINOR ARTERIAL	ALTERNATIVE 3A RURAL FREEWAY	ALTERNATIVE 3B EXPRESSWAY	ALTERNATIVE 3C PRINCIPAL ARTERIAL	ALTERNATIVE 3D MINOR ARTERIAL
Impacts to Future Traffic Capacity	• No Change	• Minimal Score (+1) A Freeway facility has the capacity to move large volumes of vehicles	• Minimal Score (+1) An Expressway facility has the capacity to move large volumes of vehicles	• Moderate Score (+2) A Principal Arterial will operate at an acceptable LOS for a majority of the day	• Major Score (+3) A Minor Arterial will experience congestion as the region fully develops	• Minimal Score (+1) A Freeway facility has the capacity to move large volumes of vehicles	• Minimal Score (+1) An Expressway facility has the capacity to move large volumes of vehicles	• Moderate Score (+2) A Principal Arterial will operate at an acceptable LOS for a majority of the day	• Major Score (+3) A Minor Arterial will experience congestion as the region fully develops	• Minimal Score (+1) A Freeway facility has the capacity to move large volumes of vehicles	• Minimal Score (+1) An Expressway facility has the capacity to move large volumes of vehicles	• Moderate Score (+2) A Principal Arterial will operate at an acceptable LOS for a majority of the day	• Major Score (+3) A Minor Arterial will experience congestion as the region fully develops
Impacts to Existing Residences	• None	• Major Score (+3) Impacts many existing residential properties located adjacent to existing Avenue D and Co. 14th St.	• Major Score (+3) Impacts many existing residential properties located adjacent to existing Avenue D and Co. 14th St.	• Moderate Score (+2) Partial acquisition of various existing residential properties located adjacent to existing Avenue D and Co. 14th St.	• Minimal Score (+1) Partial acquisition of a few existing residential properties located adjacent to existing Avenue D and Co. 14th St.	• Major Score (+3) Impacts many existing residential development located within Corridor #2	• Major Score (+3) Impacts many existing residential development located within Corridor #2	• Major Score (+3) Impacts many existing residential development located within Corridor #2	• Major Score (+3) Impacts many existing residential development located within Corridor #2	• Moderate Score (+2) Impacts a fair amount of existing residential development located within Corridor #3	• Moderate Score (+2) Impacts a fair amount of existing residential development located within Corridor #3	• Moderate Score (+2) Impacts a fair amount of existing residential development located within Corridor #3	• Moderate Score (+2) Impacts a fair amount of existing residential development located within Corridor #3
Impacts to Existing Agriculture	• None	• Major Score (+3) The Avenue D and Co 14th St. existing 66 foot R/W will be far short of the required 308 foot R/W	• Major Score (+3) An additional 100 foot of R/W is required	• Moderate Score (+2) An additional 58 foot of R/W is required	• Minimal Score (+1) An Additional 34 foot of R/W is required	• Moderate Score (+2) Impacts the least amount of agriculture lands of the 3 Corridors	• Moderate Score (+2) Impacts the least amount of agriculture lands of the 3 Corridors	• Moderate Score (+2) Impacts the least amount of agriculture lands of the 3 Corridors	• Moderate Score (+2) Impacts the least amount of agriculture lands of the 3 Corridors	• Major Score (+3) Impacts the largest amount of Agriculture Lands	• Major Score (+3) Impacts the largest amount of Agriculture Lands	• Major Score (+3) Impacts the largest amount of Agriculture Lands	• Major Score (+3) Impacts the largest amount of Agriculture Lands

Table 4-2: Preliminary Alternative Analysis Matrix (continued)

EVALUATION CRITERIA	NO BUILD	CORRIDOR #1				CORRIDOR #2				CORRIDOR #3			
		ALTERNATIVE 1A RURAL FREEWAY	ALTERNATIVE 1B EXPRESSWAY	ALTERNATIVE 1C PRINCIPAL ARTERIAL	ALTERNATIVE 1D MINOR ARTERIAL	ALTERNATIVE 2A RURAL FREEWAY	ALTERNATIVE 2B EXPRESSWAY	ALTERNATIVE 2C PRINCIPAL ARTERIAL	ALTERNATIVE 2D MINOR ARTERIAL	ALTERNATIVE 3A RURAL FREEWAY	ALTERNATIVE 3B EXPRESSWAY	ALTERNATIVE 3C PRINCIPAL ARTERIAL	ALTERNATIVE 3D MINOR ARTERIAL
Impacts to MCAS-Yuma Airport	•None	•Moderate Score (+2) Future plans of MCAS show improvements extending to Co. 14th St., while a 300 foot corridor may impact planned improvements	•Moderate Score (+2) Future plans of MCAS show improvements extending to Co. 14th St., while a 160 foot corridor may impact planned improvements	•Minimal Score (+1) Future plans of MCAS show improvements extending to Co. 14th St., Construction of a Principal Arterial on Co 14th St will mesh with MCAS improvements	•Minimal Score (+1) Future plans of MCAS show improvements extending to Co. 14th St., Construction of a Minor Arterial on Co 14th St will mesh with MCAS improvements	•Major Score (+3) Corridor #2 cuts across the existing MCAS runway and the planned improvements on the south side of the airbase	•Major Score (+3) Corridor #2 cuts across the existing MCAS runway and the planned improvements on the south side of the airbase	•Major Score (+3) Corridor #2 cuts across the existing MCAS runway and the planned improvements on the south side of the airbase	•Major Score (+3) Corridor #2 cuts across the existing MCAS runway and the planned improvements on the south side of the airbase	•Minimal Score (+1) Corridor #3 is located south of Co 14th St	•Minimal Score (+1) Corridor #3 is located south of Co 14th St	•Minimal Score (+1) Corridor #3 is located south of Co 14th St	•Minimal Score (+1) Corridor #3 is located south of Co 14th St
Access/Frontage Roads/Duplication of Facility Type	•None	•Major Score (+3) Freeway typical section requires grade separated crossings. Frontage roads may be required to maintain existing access	•Moderate Score (+2) Frontage roads may be required to maintain existing access	•Minimal Score (+1) Direct access to roadway will be maintained. right in-right out	•Minimal Score (+1) Direct access to roadway will be maintained. right in-right out	•Moderate Score (+2) Freeway typical section requires grade separated crossings. Avenue D and Co. 14th St. remain as local access	•Minimal Score (+1) Avenue D and Co. 14th St. remain as local access	•Moderate Score (+2) Avenue D and Co. 14th St. remain as local access However, two parallel roadways located within a ¼ mile with high accessibility may be unreasonable	•Moderate Score (+2) Avenue D and Co 14th St remain as local access However, two parallel roadways located within a ¼ mile with high accessibility may be unreasonable	•Moderate Score (+2) Freeway typical section requires grade separated crossings. Avenue D and Co. 14th St. remain as local access	•Minimal Score (+1) Avenue D and Co. 14th St. remain as local access	•Moderate Score (+2) Avenue D and Co. 14th St. remain as local access However, two parallel roadways located within a ¼ mile with high accessibility may be unreasonable	•Moderate Score (+2) Avenue D and Co 14th St remain as local access However, two parallel roadways located within a ¼ mile with high accessibility may be unreasonable
Environmental Impacts*	•No Impacts to prime farmland •Moderate Impacts to Air Quality (localized, if any)	•Minimal Score (+1) Impacts to Prime Farmland •No Impacts to Air Quality (localized, if any)	•Minimal Score (+1) Impacts to Prime Farmland •No Impacts to Air Quality (localized, if any)	•Minimal Score (+1) Impacts to Prime Farmland •No Impacts to Air Quality (localized, if any)	•Minimal Score (+1) Impacts to Prime Farmland •No Impacts to Air Quality (localized, if any)	•Moderate Score (+2) Impacts to Prime Farmland •No Impacts to Air Quality (localized, if any)	•Moderate Score (+2) Impacts to Prime Farmland •No Impacts to Air Quality (localized, if any)	•Moderate Score (+2) Impacts to Prime Farmland •No Impacts to Air Quality (localized, if any)	•Moderate Score (+2) Impacts to Prime Farmland •No Impacts to Air Quality (localized, if any)	•Moderate Score (+2) Impacts to Prime Farmland •No Impacts to Air Quality (localized, if any)	•Moderate Score (+2) Impacts to Prime Farmland •No Impacts to Air Quality (localized, if any)	•Moderate Score (+2) Impacts to Prime Farmland •No Impacts to Air Quality (localized, if any)	•Moderate Score (+2) Impacts to Prime Farmland •No Impacts to Air Quality (localized, if any)
Total Preliminary Evaluation Score (Lowest 4 Scores and No Build to Secondary Eval.)	•N/A	•Score (13)	•Score (12)	•Score (9)	•Score (8)	•Score (13)	•Score (12)	•Score (14)	•Score (15)	•Score (11)	•Score (10)	•Score (12)	•Score (13)

*In addition to the environmental impacts listed above, the alternatives were evaluated for potential impacts to environmental justice populations, special status species, and impacts associated with the Colorado River crossing. Each alternative was found to have a “minimal impact”. Therefore, these results were deemed not significant enough to be presented in this table at this level of analysis.



4.4. Secondary Evaluation of Alternatives

The No Build option, as well as Alternatives 1C, 1D, 3A, and 3B, are further analyzed using the following criteria: safety, cost, consistency with previous planning, implementation, right-of-way, cross region travel times, and the Colorado River constraints

4.4.1. Secondary Alternative Matrix/Evaluation

Below is a summary of the criteria used to evaluate and compare the four alternatives and No Build first screened in Section 4.3. The goal of the Secondary Alternative Matrix is to evaluate the remaining alternatives so that the study team can recommend a preferred alternative.

- Benefits to Safety
- Cost
- Consistency with City of Yuma Approved Plans
- Implementation
- Right of Way Impacts
- Benefits to Cross Region Travel Times
- Colorado River Constraints

A qualitative ranking was provided to each Secondary Alternative in Table 4-3. For the safety, and benefits to cross region travel times an evaluation of low, medium, and high is given to each alternative. The cost, implementation, right-of-way, and Colorado River constraints evaluation criteria uses an evaluation of minimal, moderate, and major. And finally, a simple “Yes” or “No” evaluation criterion is used for the consistency with the City of Yuma approved plans.

In addition to the qualitative ranking, Alternatives 1C, 1D, 3A, 3B, and the No Build are evaluated against the criteria presented above and given a score between one and three. Similar to the preliminary evaluation of alternatives in Section 4.3, a score of one represents a positive evaluation for the alternative while a score of three represents a negative evaluation for that criteria item. Once the scores for each alternative are added up, the low score represents the preferred alternative.

Safety

Each of the secondary alternatives were evaluated to determine the safety benefits. The alternatives that have open access points in many locations were given “Low” safety evaluations while alternatives that have limited access and low pedestrian interaction were given “High” safety evaluations. In general, as the number of conflict points (intersections/driveways) increases, the safety typically decreases. Therefore, alternatives 3A and 3B which have a limited number of conflict points were given “High” evaluation



Cost

As a part of the cost evaluation process, four planning level estimates were prepared for each of the remaining alternatives. The planning level estimates will need to be refined further in future studies. The four secondary alternatives were broken down into items that can be unit priced. The cost of right of way is extremely variable due to the changing economic conditions and changing land values. These alternatives range in costs from \$127 million dollars to \$538 million dollars. The preliminary cost estimates are shown in Appendix C through Appendix F. Alternatives that had a very high cost per mile were given a “Major” evaluation while alternatives that had virtually no cost, such as the No Build alternative was given a “Minor” evaluation.

Consistency with City of Yuma General Plans

All of the secondary alternatives were evaluated against the previously approved City of Yuma planning documents. The recently released 2012 City of Yuma General Plan and the 2005 City of Yuma Major Roadways Plan identify Avenue D and County 14th Street as future expressways. All of the alternatives that do not include the Expressway typical section were given an evaluation of “No” while the alternative that did include the Expressway typical section was given an evaluation of “Yes”.

Implementation

Given the wide variety of roadway types presented in the secondary analysis of the Yuma Expressway Corridor Study, each of the remaining alternatives will require diverse Implementation strategies. The implementation of a new rural freeway will require large portions (approximately 2 miles) of the ultimate roadway to be constructed at a time, while a minor arterial may only require a half street improvement to be constructed during development. Alternatives that require large portions of the facility to be completed at a time were given an evaluation of “Major”, while alternatives that allow small portions of the facility to be constructed at a time were given a “Minimal” evaluation. Given the future land use plans provided in Chapter 3, Future Conditions, it is understood that there is limited development planned for the future in the study area. However, it is anticipated that if any growth occurs in the study area, it will occur along the County 14th Street alignment first. Implementation of the preferred alternative is discussed further in Section 4.6.

Right-of-Way Impacts

Each of the remaining alternatives was evaluated based upon the typical right-of-way width required. The 100-foot right-of-way width required for the minor arterial typical section was given an evaluation of “Minimal” while the 308-foot width required by the Rural Freeway typical section was given an evaluation of “Major”.

Colorado River Constraints

Each alternative was evaluated against the soil conditions near the Colorado River crossings. In addition, the complexity of construction with year round water flow and possible environmental mitigation measures may affect bridge design and type. With the exception of the No Build alternative all of the alternatives impact the Colorado River. A “Moderate” impact was given to alternatives 1C, 1D, 3A, and 3B. Environmental constraints were not addressed at this level of



analysis because the impacts for each alternative were essentially the same and would not assist in the selection of a preferred alternative.

4.4.2. Selection of Preferred Alternative

The City of Yuma and ADOT, with input from the TAC and Technical Team identified Alternative 3B as the preferred alternative. The preferred alternative was selected based upon the process documented in Sections 4.3 and 4.4 and the evaluation matrices shown in Table 4-2 and Table 4-3. At this time there is no immediate need for the Yuma Expressway, however if and when the land use plan changes from agriculture and low density residential, the timing and the need for Yuma Expressway will need to be studied further. It is recommended that the preferred alternative along with the secondary alternatives be carried forward into those future studies as land use changes, growth occurs, and traffic within the region increases.

Below is a list of the rationale regarding the selection of Alternative 3B as the preferred alternative.

- The general alignment of the preferred corridor stays within the study area and avoids as much existing development as possible.
- The use of the Expressway typical section and roadway type will provide additional capacity to the existing roadway network, possibly relieving some of the existing congestion on the arterials within the City of Yuma.
- The alternative has little impact on the existing and future plans of the MCAS-Yuma Airport. The construction of the Yuma Expressway will help facilitate the increased traffic generated by the MCAS expansion plans and the relocation of the main gate to the south side of MCAS.
- The previously approved City of Yuma planning documents correspond with the Expressway roadway type.
- Avenue D and County 14th Street will remain thus allowing the Alternative 3B to be built in segments with limited impact to the existing roadways.



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Table 4-3: Secondary Alternative Analysis Matrix

EVALUATION CRITERIA	NO BUILD	CORRIDOR #1		CORRIDOR #3	
		ALTERNATIVE 1C PRINCIPAL ARTERIAL	ALTERNATIVE 1D MINOR ARTERIAL	ALTERNATIVE 3A RURAL FREEWAY	ALTERNATIVE 3B EXPRESSWAY
Benefits to Safety	<ul style="list-style-type: none"> • Low (+3) ✓ Driveway and intersection conflicts will exist ✓ Open median will allow left turn conflicts ✓ Congestion will add to accidents ✓ No provisions for pedestrians 	<ul style="list-style-type: none"> • Medium (+2) ✓ Driveway and intersection conflicts will exist ✓ Closed median will restrict left turn movements ✓ Conflicts with pedestrians possible 	<ul style="list-style-type: none"> • Low (+3) ✓ Driveway and intersection conflicts will exist ✓ Closed median will restrict left turn movements ✓ Congestion will add to accidents ✓ Conflicts with pedestrians possible 	<ul style="list-style-type: none"> • High (+1) ✓ Access control and grade separated interchanges reduce conflict points between vehicles ✓ Virtually eliminates conflicts with pedestrians 	<ul style="list-style-type: none"> • High (+1) ✓ Limited access points reduce conflict points between vehicles ✓ Vehicle pedestrian interaction is reduced
Cost	<ul style="list-style-type: none"> • Minimal (+1) ✓ The facility is currently in place the only costs necessary are to maintain the existing Avenue D and County 14th Street 	<ul style="list-style-type: none"> • Moderate (+2) ✓ Roadway \$3,167,000 per mile (excluding right-of-way and major bridges) (including roadway construction and interchanges) ✓ 124 foot right-of-way through agriculture ✓ 124 foot right-of-way through residential ✓ Two interchanges (I-8 & SR 195) ✓ Colorado River Bridge 	<ul style="list-style-type: none"> • Moderate (+2) ✓ Roadway \$2,837,000 per mile (excluding right-of-way and major bridges) (including roadway construction and interchanges) ✓ 100 foot right-of-way through agriculture ✓ 100 foot right-of-way through residential ✓ One interchange (I-8) ✓ Colorado River Bridge 	<ul style="list-style-type: none"> • Major (+3) ✓ Roadway \$15,174,000 per mile (excluding right-of-way and major bridges) (including roadway construction and interchanges) ✓ 308 foot right-of-way through agriculture ✓ 308 foot right-of-way through residential ✓ Five interchanges ✓ Two directional interchanges ✓ Two Colorado River Bridges 	<ul style="list-style-type: none"> • Moderate (+2) ✓ Roadway \$4,002,000 per mile (excluding right-of-way and major bridges) (including roadway construction and interchanges) ✓ 160 foot right-of-way through agriculture ✓ 160 foot right-of-way through residential ✓ Two Interchanges (I-8 & SR 195) ✓ Colorado River Bridge
Consistency with City of Yuma Approved Plans	<ul style="list-style-type: none"> • No (+2) ✓ The 2012 City of Yuma General Plan identifies Ave. D and Co. 14th as Future Expressways ✓ The 2005 City of Yuma Major Roadways Plan identifies Ave. D and Co. 14th as Future Expressways 	<ul style="list-style-type: none"> • No (+2) ✓ The 2012 City of Yuma General Plan identifies Ave. D and Co. 14th as Future Expressways. ✓ The 2005 City of Yuma Major Roadways Plan identifies Ave. D and Co. 14th as Future Expressways 	<ul style="list-style-type: none"> • No (+2) ✓ The 2012 City of Yuma General Plan identifies Ave. D and Co. 14th as Future Expressways. ✓ The 2005 City of Yuma Major Roadways Plan identifies Ave. D and Co. 14th as Future Expressways 	<ul style="list-style-type: none"> • No (+2) ✓ The 2012 City of Yuma General Plan identifies Ave. D and Co. 14th as Future Expressways. ✓ The 2005 City of Yuma Major Roadways Plan identifies Ave. D and Co. 14th as Future Expressways 	<ul style="list-style-type: none"> • Yes (+1) ✓ The 2012 City of Yuma General Plan identifies Ave. D and Co. 14th as Future Expressways. ✓ The 2005 City of Yuma Major Roadways Plan identifies Ave. D and Co. 14th as Future Expressways
Implementation	<ul style="list-style-type: none"> • Minimal (+1) ✓ No implementation needed. Avenue D and County 14th Street are existing. 	<ul style="list-style-type: none"> • Minimal (+1) ✓ Future development adjacent to Co. 14th St and Avenue D to construct half street improvements. ✓ Once fully developed or traffic demands require improvements, local agencies will complete roadway improvements along undeveloped lands. 	<ul style="list-style-type: none"> • Minimal (+1) ✓ Future development adjacent to Co. 14th St and Avenue D to construct half street improvements. ✓ Once fully developed or traffic demands require improvements, local agencies will complete roadway improvements along undeveloped lands. 	<ul style="list-style-type: none"> • Major (+3) ✓ Freeway would have to be built in large (2 mile min) phases/segments. ✓ State agencies would be required to construct the facility. 	<ul style="list-style-type: none"> • Moderate (+2) ✓ Expressway would have to be built in small phases/segments (1 mile or less). ✓ Local agencies would be required to construct facility



Table 4-3: Secondary Alternative Analysis Matrix (continued)

EVALUATION CRITERIA	NO BUILD	CORRIDOR #1		CORRIDOR #3	
		ALTERNATIVE 1C PRINCIPAL ARTERIAL	ALTERNATIVE 1D MINOR ARTERIAL	ALTERNATIVE 3A RURAL FREEWAY	ALTERNATIVE 3B EXPRESSWAY
Right-of-Way Impacts	<ul style="list-style-type: none"> • Minimal (+1) ✓ No right-of-way required. Avenue D and County 14th Street are existing 	<ul style="list-style-type: none"> • Moderate (+2) ✓ The 124 foot right-of-way width would require additional land on either side of Avenue D and County 14th St. ✓ However, if the land is developed in the distant future, the community could require developers to dedicate the necessary right-of-way for the half street improvement 	<ul style="list-style-type: none"> • Minimal (+1) ✓ The 100 foot right-of-way width would require additional land on either side of Avenue D and County 14th St. ✓ However, if the land is developed in the distant future, the community could require developers to set aside the necessary right-of-way for the half street improvement 	<ul style="list-style-type: none"> • Major (+3) ✓ The 300 foot right-of-way width requirement would create a large footprint through existing agriculture lands and possible future development ✓ However, as the land use/development changes in the distant future, the local community could begin preserving/acquiring the required right of way, in a variety of ways depending upon the parcel sizes, types of development, and negotiations ✓ Any dedication requirements should be justified by the impacts of the development 	<ul style="list-style-type: none"> • Moderate (+2) ✓ The 160 foot right-of-way width requirement would create a large footprint through existing agriculture lands ✓ However, as the land use/development changes in the distant future, the local community could begin preserving/acquiring the required right of way, in a variety of ways depending upon the parcel sizes, types of development, and negotiations ✓ Any dedication requirements should be justified by the impacts of the development
Benefit to Cross Region Travel Times	<ul style="list-style-type: none"> • Low (+3) ✓ There are no additional benefits to the region for east/west and north/south transportation 	<ul style="list-style-type: none"> • Medium (+2) ✓ With three through lanes in each direction, conflicting turn movements, and direct access from adjacent development. The cross region travel time within the study area will increase as additional development occurs 	<ul style="list-style-type: none"> • Low (+3) ✓ With two through lanes in each direction, conflicting turn movements, and direct access from adjacent development. The cross region travel times within the study area will significantly increase as additional development occurs 	<ul style="list-style-type: none"> • High (+1) ✓ With two lanes in each direction, controlled access, high speed design, and the existing Avenue D and County 14th Street remaining. The cross region travel times will remain low long into the future 	<ul style="list-style-type: none"> • High (+1) ✓ With three lanes in each direction, limited access, and the existing Avenue D and County 14th Street remaining. The cross region travel times will remain low long into the future
Colorado River Constraints	<ul style="list-style-type: none"> • Minimal (+1) ✓ There will not be any impacts to Colorado River 	<ul style="list-style-type: none"> • Moderate (+2) ✓ The soils in the Colorado River near the Avenue D alignment are typically a silt loam ✓ The Colorado River has water flow year round therefore construction could be affected ✓ Environmental concerns may affect bridge design and type 	<ul style="list-style-type: none"> • Moderate (+2) ✓ The soils in the Colorado River near the Avenue D alignment are typically a silt loam ✓ The Colorado River has water flow year round therefore construction could be affected ✓ Environmental concerns may affect bridge design and type 	<ul style="list-style-type: none"> • Moderate (+2) ✓ The soils in the Colorado River near the Avenue D alignment are typically a silt loam ✓ The Colorado River has water flow year round therefore construction could be affected ✓ Environmental concerns may affect bridge design and type 	<ul style="list-style-type: none"> • Moderate (+2) ✓ The soils in the Colorado River near the Avenue D alignment are typically a silt loam ✓ The Colorado River has water flow year round therefore construction could be affected ✓ Environmental concerns may affect bridge design and type
Total Secondary Evaluation Score (Low Score is Preferred)	• Score (12)	• Score (13)	• Score (14)	• Score (15)	• Score (11)

4.5. Alternative Connections to I-8/Colorado River Crossing

As a result of the public outreach and the comments received, various people have requested alternate connections to I-8 and the Colorado River. Two alternate connections are evaluated. Algodones Road Connection (Figure 4-11) connects the Yuma Expressway to Algodones Road approximately one mile south of I-8. The Winterhaven Interchange Connection (Figure 4-12) connects the Yuma Expressway to the existing I-8 Winterhaven Interchange. Each of the alternate connections to I-8 can be combined with all of the alternatives presented in Table 4-3.

4.5.1. Algodones Road Connection

The Algodones Road Connection utilizes the existing Algodones Road Transportation Interchange with I-8. See Figure 4-11 for a plan view. Two alternatives are considered; the first alternative would connect to the existing Algodones Road and upgrade the existing road northward as well as the I-8 interchange. The connection would then travel over the Colorado River in a southeastern direction. Once on the Arizona side of the Colorado River, the Algodones Road Connection will cross between the Arizona Public Service (APS) Power Plant and the Bureau of Reclamation Desalting plant to intersect Corridor No. 1, Corridor No. 2, or Corridor No. 3 as presented in Figure 4-11. The second alternative would connect to the existing Algodones Road and upgrade the existing road northward as well as the I-8 interchange. The connection would then traverse east-west along the north side of the existing levee and connect to the Corridor No. 1, Corridor No. 2 or Corridor No. 3.

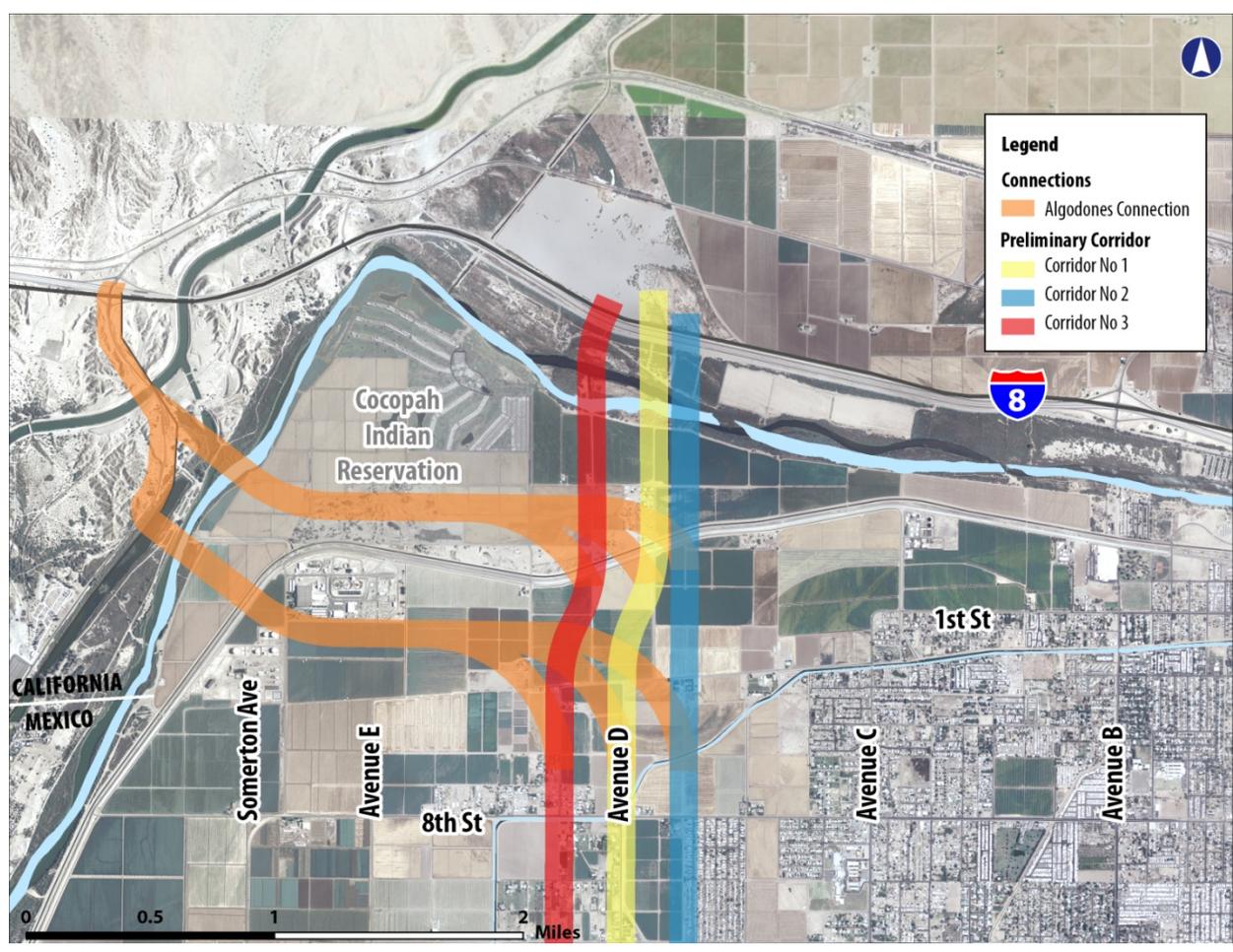
The first alternative for the Algodones Road Connection has some limitations. The impacts to the Bureau of Reclamation Desalting plant and APS Power Plant are major constraints. The existing Algodones Road (SR 186) is one lane in each direction and would require substantial improvements to the existing roadway, the I-8 interchange and the existing crossing of the All American Canal.

The second alternative looks briefly at sweeping the Algodones Road Connection to the north of the Bureau of Reclamation Desalting plant. Although the geometry of the roadway might be improved, it would impact portions of the Cocopah Indian Reservation and the roadway would be on the Colorado River side of the levee, running parallel to the levee for approximately one mile.

Both alternatives for the Algodones Road Connection would require that provisions be made for a new port of entry (POE) between Arizona and California. The POE would require additional width for inspection and weigh stations.

At this time there are no plans by Caltrans to widen SR 186 (Algodones Road). The Imperial County Long Range Transportation Plan identifies planned improvements to the existing SR 186/I-8 transportation interchange. These improvements will not add any travel lanes or capacity to the interchange.

Figure 4-11: Algodones Road Connection





4.5.2. Winterhaven Interchange Connection

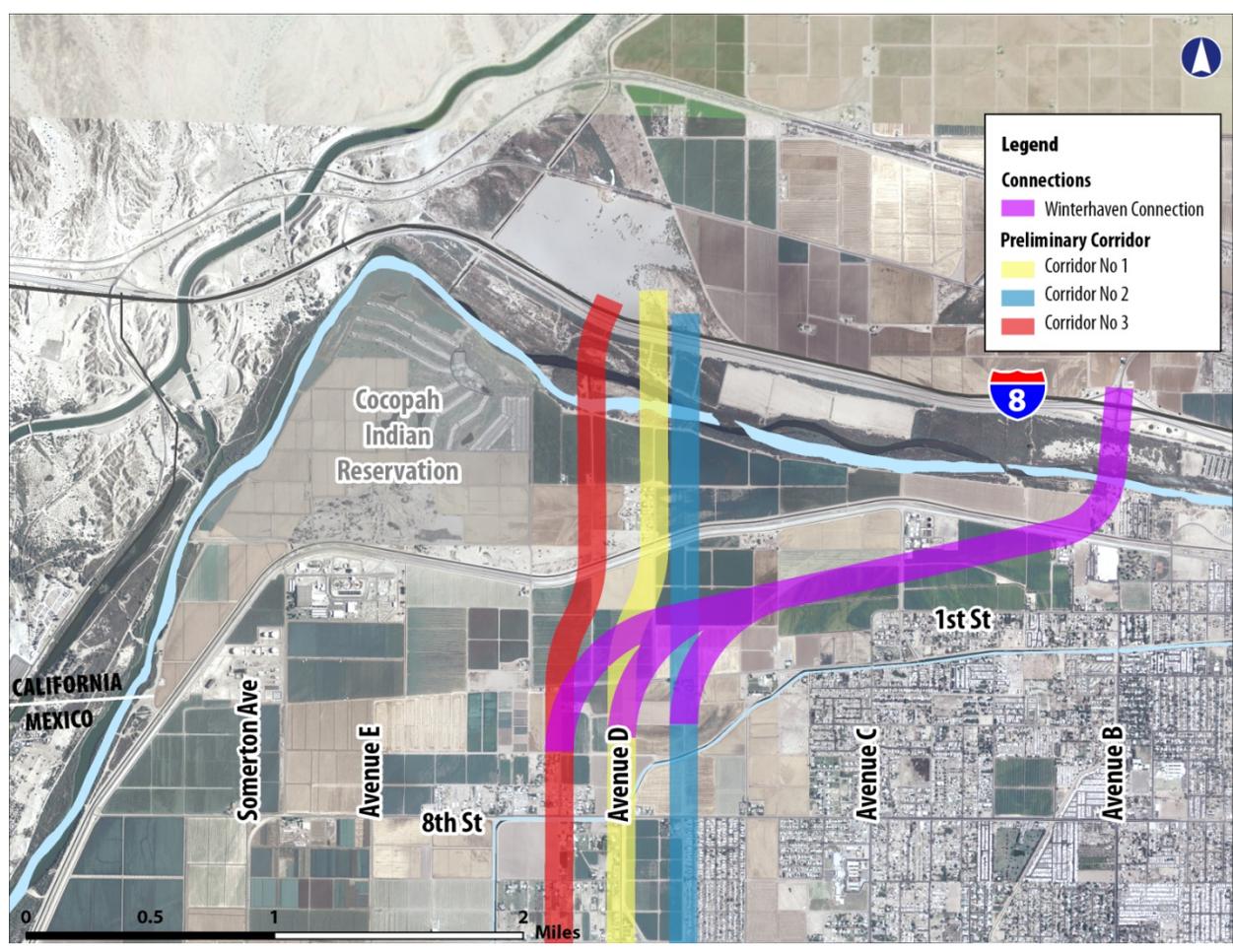
The Winterhaven Interchange Connection utilizes the existing Winterhaven Drive Transportation Interchange with I-8; see Figure 4-12 for a plan view. The connection will then travel over the Colorado River heading towards the Arizona levee. Once on the Arizona side of the Colorado River the Winterhaven Interchange Connection will turn to the southwest and intersect Corridor No. 1, Corridor No. 2, or Corridor No. 3 as presented in Figure 4-12.

The Winterhaven Interchange Connection has several limitations. The crossing of the Colorado River near the Avenue B alignment could result in some impacts to Joe Henry Memorial Park near 23rd Avenue and Colorado Street. In addition the West Wetland Park is located slightly east of the Winterhaven Interchange Connection between 23rd Avenue and 12th Avenue adjacent to the Colorado River. The close proximity to these two parks along with additional environmental concerns will need to be studied and documented in further detail if the Winterhaven Interchange Connection is studied further.

Similar to the Algodones Connection, there are some major constraints that the Winterhaven Interchange Connection would need to take into consideration and avoid if future study takes place on this alternate connection. The Shaw Industries Yarn Manufacturing Plant is located just west of Joe Henry Memorial Park. A natural gas power plant operated by Yuma Cogeneration Associates is located north of 1st street on 27th Drive. There are various substation sites associated with the power plant that need to be considered as well. Finally the Figueroa Water Pollution Control Facility is located at approximately Ave C and the south levee of the Colorado River.

In addition to the environmental and existing infrastructure concerns identified above there are some physical constraints that would need to be further studied. The existing Winterhaven Drive/I-8 interchange has only one lane in each direction and no left turn capacity. Any traffic traveling from South Yuma County to Westbound I-8 would have about a 2 mile jog to the east. There are no plans by Caltrans to make any improvements to the Winterhaven Drive Interchange.

Figure 4-12: Winterhaven Interchange Connection





4.6. Implementation/Funding Strategies for Preferred Alternative

The Future Traffic Conditions and Deficiencies, Section 3.2, determined that Avenue D and County 14th Street will operate at an acceptable level of service well into the future, as long as the current land use remains primarily agriculture and low density residential. If the future land use plans change to increase commercial and residential development along the study area, or development outside of the study area, increased traffic volumes on the existing Avenue D and County 14th Street will be unable to carry the larger traffic volumes. Therefore, the implementation of the Yuma Expressway is contingent upon a change in land use for the study area and will be impacted by such changes in land use from communities to the south and west.

4.6.1. Implementation for the Preferred Alternative

Various implementation strategies can be used for the Yuma Expressway. Based on input received from the public at the September 2012 meeting, it would be prudent to initiate right-of-way identification activities in the near future, before development creates physical obstructions that would be difficult and expensive to overcome and to have the construction of the Yuma Expressway be concurrent with or be driven by transportation needs and warrants resulting from the future development. At present, traffic demand is not projected to warrant the construction of the Yuma Expressway until between 2045 and 2050. Construction of the Yuma Expressway prior to development of the land will most likely be unpopular with the local community as it may be seen as unnecessary. Below is a list of implementation activities that could be conducted as the project moves towards construction.

1. **Design Concept Report (DCR):** Using the information presented in this document (Yuma Expressway Corridor Study) a Design Concept Report and Environmental document, prepared in accordance with NEPA/FHWA criteria, could be drafted to evaluate the physical constraints, environmental constraints and potential roadway alignments. The DCR and Environmental document will be used to define the preferred location. The likely owner of the DCR would be the City of Yuma and/or Yuma County.
2. **Incorporation into the YMPO Long Range Transportation Plan:** YMPO serves as the regional planning authority. The City of Yuma and/or Yuma County could request that the preferred location as a result of the DCR and Environmental document be incorporated into YMPO's Long Range Transportation Plan.
3. **Right-of-Way Preservation:** The DCR would provide the footprint for the new facility. As the area develops, the first phase of implementation for the project will be simply as right-of-way preservation. This footprint would also provide the development community with the finalized transportation corridor configuration around which it could then begin to lay out development plans. Any right-of-way preservation prior to an approved NEPA document would be done at risk of being ineligible for federal aid. Additionally, the preferred alternative identified in this long-range study could change during the NEPA study process.



4. **Phased Construction:** The construction of the Yuma Expressway could be implemented in phases. It is anticipated that the segments located along Avenue D in the Yuma Valley will develop many years after the portion of the study area located on the Yuma Mesa along County 14th Street. MCAS has announced plans to expand facilities, and relocate the main gate to County 14th Street. Therefore, it is anticipated that the portion of the Yuma Expressway between Avenue B and SR 195 will show an increased traffic need long before other portions of the study area.
5. **Improvements to Existing Avenue D and County 14th Street:** As development generated congestion increases along the study area, but prior to completion of Yuma Expressway, the existing Avenue D and County 14th Street roadways will require improvements. These improvements may be required as a part of development; however it is important to note the dedication and improvement requirements need to be justified by the impact of the proposed development.
6. **Colorado River Crossing:** It is envisioned that the proposed crossing of the Colorado River and establishment of the I-8 Interchange would be one of the final phases in the implementation of the Yuma Expressway. The large costs of a Colorado River bridge and freeway Interchange, along with a small traffic demand from South Yuma County to westbound I-8, would delay implementation. The Yuma Expressway Colorado River crossing would be needed once the existing 4th Avenue and I-8 crossing reaches capacity.

4.6.2. Funding

There is presently no funding set aside for the Yuma Expressway construction, design, or right-of-way. Possible funding sources may include local development fees collected for planned developments, traditional roadway funding (i.e., federal, state, and local), a future regional sales tax, tolling of users, or possibly of a public-private partnership. Although the tolling of users or public-private partnerships may be possible revenue sources, it is unlikely that there will be a large enough travel benefit for users to pay a toll. In addition the logistics of collecting tolls on an Expressway facility, that has access points on approximately one mile intervals, would also reduce the feasibility.

Currently, the need for the Yuma Expressway has not been identified. As the Yuma Expressway is studied further, the funding sources should be examined more closely.



5. Public Outreach

Two public meetings were conducted to provide information to the public and gather input on the study.

Refer to Appendix G and Appendix H for full summaries of the public open house meetings.

6. Conclusions

The Yuma Expressway Corridor Study is broken into three analyses Current Conditions, Future Conditions and Corridor Alternatives. The Current Conditions looked at the existing land use and relevant studies that affect the Yuma Expressway Corridor Study. The Future Conditions analyzed the planned improvements and development in the study area. And finally the Corridor Alternatives analysis examined multiple alternatives and corridors.

Chapter 2, Current Conditions, found that most of the land in the Yuma Expressway study area is privately owned and dedicated to agricultural or residential uses. Other important ownerships include the Cocopah Indian Tribe, the Quechan Indian Tribe, and the military. Accordingly, with these land uses, the employment densities within the study area are relatively low, as well as population densities and housing densities. Several areas within the study area remain uninhabited.

The study area has relatively flat topography and low elevation. Several hydrographic features run through the study area, including the Colorado River and various irrigation canals. Private and public utilities exist within the study area and there are few major facilities, such as storm basins, gas lines, and a cellular tower.

Within the Yuma Expressway corridor study area, the roadway network includes diverse functional classifications, speed limits, and roadway geometries. Most roadways have 2 lanes, with the exception of highways US 95, I-8, and SR 195. Avenue D and County 14th Street carry low traffic volumes within the study area. The highest volumes reported are found on US 95.

The preliminary environmental review provided information showing the environmental characteristics within the Yuma Expressway study area. Racial and ethnic minority populations live within the study area, as well as low-income populations. In addition, several special status animal species have been found to occur within the study area, and various environmental challenges would be encountered to cross the Colorado River and connect the Yuma Expressway with I-8.

Chapter 3, Future Conditions, showed the general consensus amongst the local planning agencies for this area to remain dedicated to agricultural and military uses. The general plans of all agencies do not reflect large commercial or residential growth along either Avenue D or County 14th Street. One significant planned change occurring within the study area is the relocation of the Marine Corps Air Station (MCAS)-Yuma entrance gate south of the facility, connecting to County 14th Street

Currently there are several other planning studies going on that may impact the outcome of the Yuma Expressway Corridor Study. The Yuma County Rail Corridor Study is currently developing rail alternatives for presentation to the public. The Arizona-Sonora Border Master Plan is developing a master plan aimed at improving efficiency at the border crossings. The South Yuma County Connector Study is examining a connection between San Luis and the



Yuma Expressway Corridor. The Binational San Luis Transportation Study is developing a transportation plan for San Luis Rio Colorado, Mexico and San Luis, Arizona.

The future conditions indicate that the overall Yuma area would continue to grow in the future; however, with the exception of the MCAS-Yuma expansion, the Yuma Expressway study area would experience little growth in the near future.

According to the Yuma Metropolitan Planning Organization (YMPO) Travel Demand Model, future transportation infrastructure would also remain largely unchanged. Avenue D and County 14th Street would have a total of two lanes in 2033. Using the YMPO Travel Demand Model, the existing roadway network within the Yuma Expressway study area would operate at a level of service (LOS) B until 2033.

Chapter 4, Corridor Alternatives, presented four types of roadways, along with three corridors, to create 12 alternatives. These alternatives were evaluated using impacts to existing residences, impacts to existing agriculture, impacts to MCAS/Yuma Airport, and environmental impacts. With input from the Technical Advisory Committee (TAC), these alternatives were screened against quantitative and qualitative criterion, and the preferred alternative was selected. The preferred alternative is Alternative 3B, an expressway in Corridor No. 3, which meanders about a quarter-mile off of Avenue D and County 14th Street.

At this time the current forecast does not identify an immediate need for the Yuma Expressway, further studies will be needed as land use changes to allow commercial and residential development. Future studies should further examine the alternative connections to the I-8 and identify funding sources.

The Yuma Expressway Corridor Study is one of the first steps required to allow the Yuma Expressway to come to realization. Long range transportation planning is required for communities that experience large population growth. There are existing roadways within the City of Yuma that are severely congested during certain times of the year due to limited right-of-way and urban development over many years. The Yuma Expressway Corridor Study provides the groundwork for subsequent studies and eventually construction of a new transportation facility. Below is a list of the various steps that the Yuma Expressway project will have to go through prior to becoming an operational transportation facility.

1. Planning Phase (Yuma Expressway Corridor Study) ✓ *Complete with this study*
2. Design Concept Report (DCR)
 - Refining the Corridors presented in the Planning Phase into alignments
 - Environmental Overview
 - Preliminary Project Plans
3. Right of Way Preservation and Acquisition
4. Environmental Documentation
5. Final Design
6. Construction



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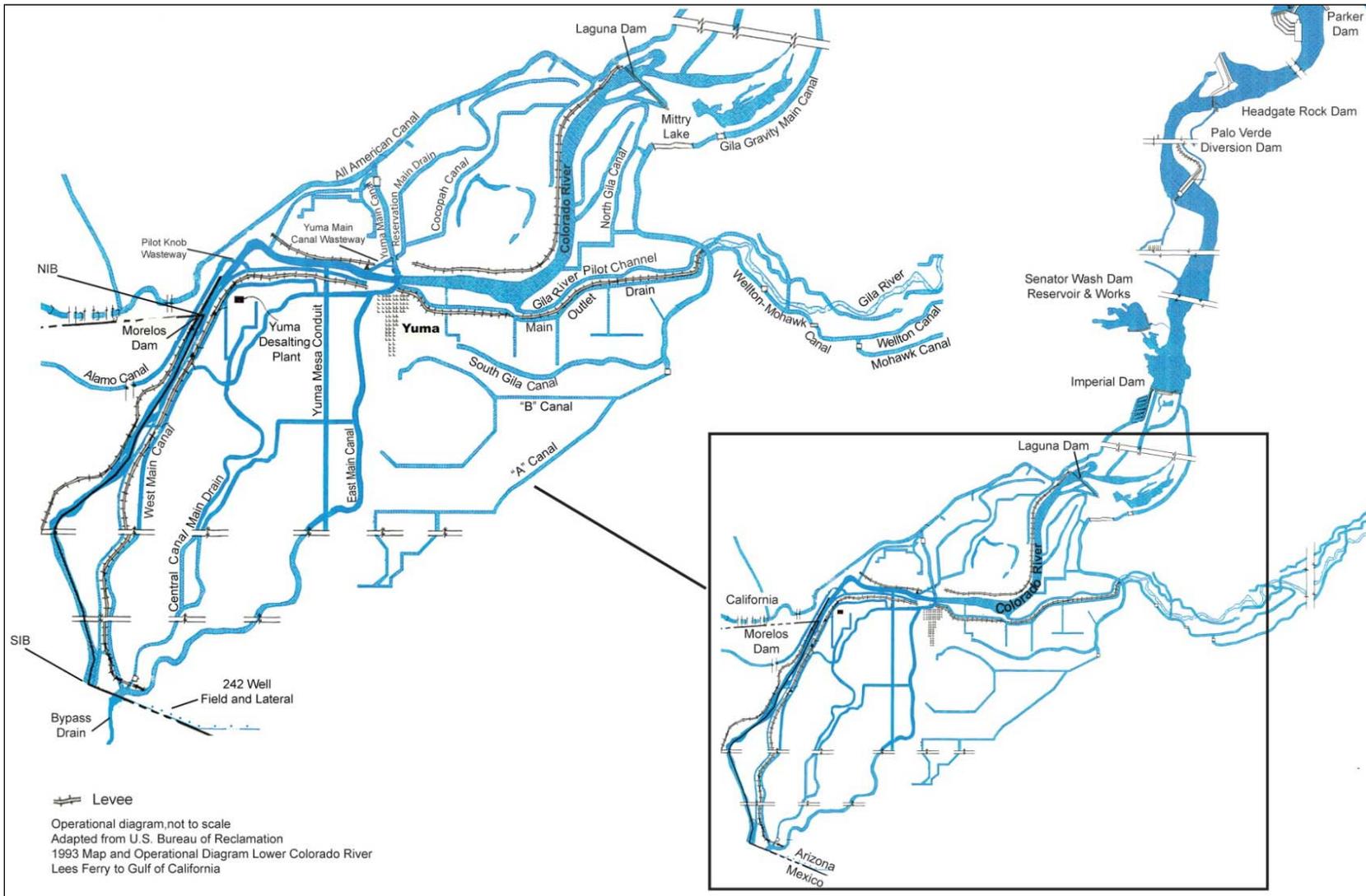
7. Appendices

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Appendix A - Hydrology in Southwestern Yuma County

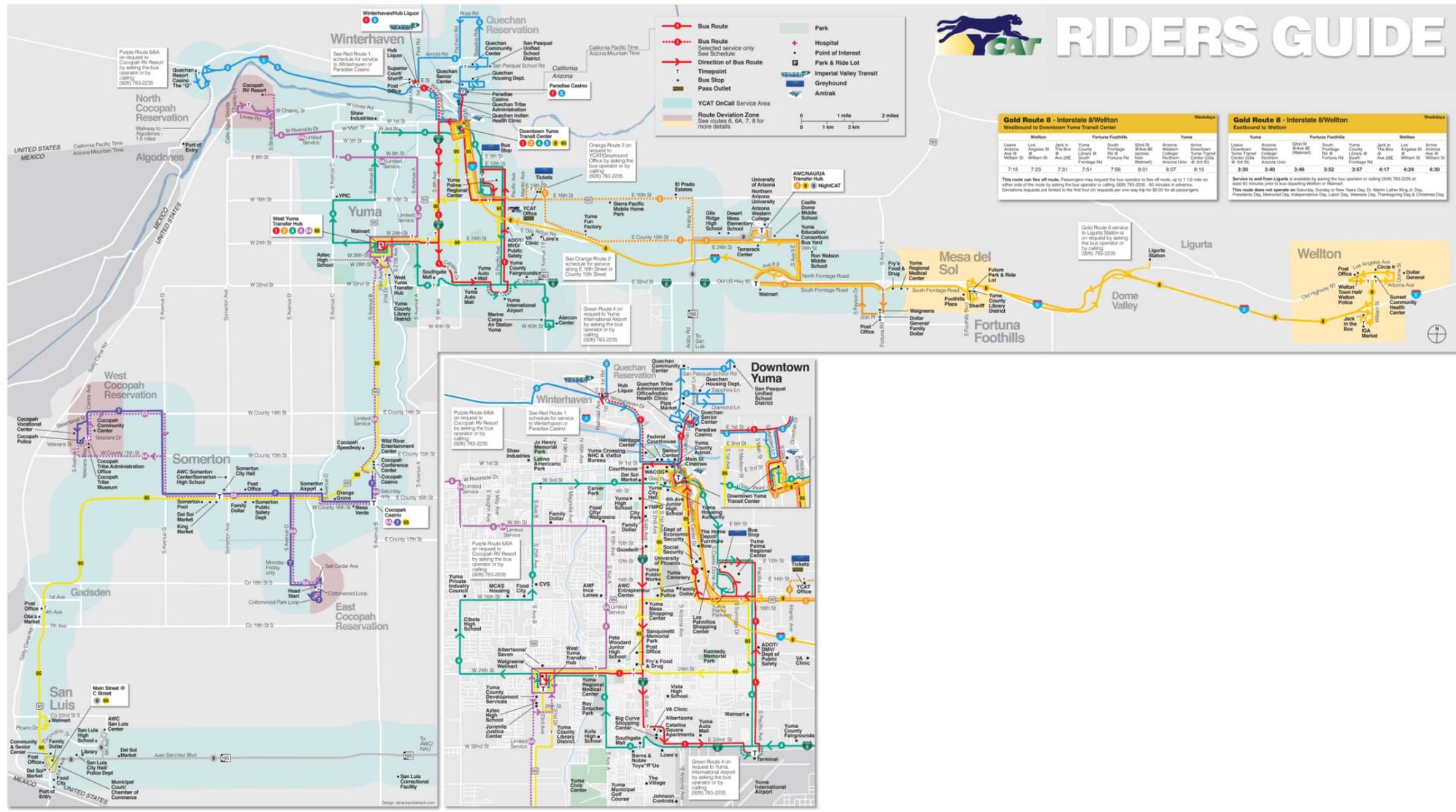


Source: Arizona Department of Water Resources, 2012



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Appendix B - YCAT Transit System: City of Yuma Local Bus Routes



Source: YCAT, January 2013



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Appendix C - Alternative 1C Cost Estimate

ALTERNATIVE 1C						
Roadway Construction		Quantity	Unit	Unit Price	Current \$ (2012)	Future \$ (based on 2040 @ 3%)
Roadway Construction (Principal Arterial)	Length	17.9	Miles	\$ 2,050,000	\$ 36,695,000	\$ 83,956,000
Bridges	# of bridges	1				
	Area (based on 1 - 113' wide * 1,800' long)	203,400	SF	\$ 180	\$ 36,612,000	\$ 83,766,000
Traffic Interchanges	# of TI's	1		\$ 20,000,000	\$ 20,000,000	\$ 45,759,000
Directional Interchanges	# of Directional TI's	0		\$ 70,000,000	\$ -	\$ -
	Construction Subtotal				\$ 93,307,000	\$ 213,480,000
Design & Construction Engineering				20%	\$ 18,661,000	\$ 42,695,000
	Construction Total				\$ 111,968,000	\$ 256,175,000
Right-of-way						
	Agricultural Area (based on 124' wide corridor - currently own 66')	105	ACRE	\$ 80,000	\$ 8,380,000	\$ 19,173,000
	Residential Area (based on 124' wide corridor - currently own 66')	21	ACRE	\$ 150,000	\$ 3,164,000	\$ 7,239,000
	# of intersections	1				
	Additional 45 acres per intersection	45	ACRE	\$ 80,000	\$ 3,600,000	\$ 8,237,000
	# of directional interchanges	0				
	Additional 100 acres per directional interchange	0	ACRE	\$ 80,000	\$ -	\$ -
	Subtotal	171	ACRE		\$ 15,144,000	\$ 34,648,000
	Project Subtotal				\$ 127,112,000	\$ 290,823,000
Project Contingency				20%	\$ 25,422,000	\$ 58,164,000
PROJECT TOTAL					\$ 152,534,000	\$ 348,987,000

General Note:

1. It cannot be assumed that the "existing" 66-foot rights-of-way have documented dedications. Nearly all were established through a Yuma County Board of Supervisors "Declaration of Right-of-Way", which does not ensure that right-of-way has been recorded.
2. Most lands necessary for development of the roadway were valued at \$150,000/acre. It is assumed that appraisers will value the land at its "highest and best use", not its current use.



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Appendix D - Alternative 1D Cost Estimate

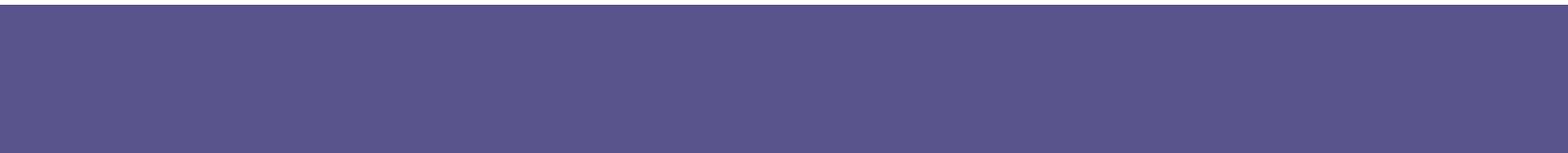
ALTERNATIVE 1D						
Roadway Construction		Quantity	Unit	Unit Price	Current \$ (2012)	Future \$ (based on 2040 @ 3%)
Roadway Construction (Minor Arterial)	Length	17.9	Miles	\$ 1,720,000	\$ 30,788,000	\$ 70,441,000
Bridges	# of bridges	1				
	Area (based on 1 - 89' wide * 1,800' long)	160,200	SF	\$ 180	\$ 28,836,000	\$ 65,975,000
Traffic Interchanges	# of TI's	1		\$ 20,000,000	\$ 20,000,000	\$ 45,759,000
Directional Interchanges	# of Directional TI's	0		\$ 70,000,000	\$ -	\$ -
Construction Subtotal					\$ 79,624,000	\$ 182,174,000
Design & Construction Engineering				20%	\$ 15,925,000	\$ 36,435,000
Construction Total					\$ 95,549,000	\$ 218,609,000
Right-of-way						
	Agricultural Area (based on 100' wide corridor - currently own 66')	61	ACRE	\$ 80,000	\$ 4,912,000	\$ 11,238,000
	Residential Area (based on 100' wide corridor - currently own 66')	12	ACRE	\$ 150,000	\$ 1,855,000	\$ 4,244,000
	# of intersections	1				
	Additional 45 acres per intersection	45	ACRE	\$ 80,000	\$ 3,600,000	\$ 8,237,000
	# of directional interchanges	0				
	Additional 100 acres per directional interchange	0	ACRE	\$ 80,000	\$ -	\$ -
	Subtotal	119	ACRE		\$ 10,367,000	\$ 23,719,000
Project Subtotal					\$ 105,916,000	\$ 242,328,000
Project Contingency				20%	\$ 21,183,000	\$ 48,465,000
PROJECT TOTAL					\$ 127,099,000	\$ 290,793,000

General Note:

1. It cannot be assumed that the “existing” 66-foot rights-of-way have documented dedications. Nearly all were established through a Yuma County Board of Supervisors “Declaration of Right-of-Way”, which does not ensure that right-of-way has been recorded.
2. Most lands necessary for development of the roadway were valued at \$150,000/acre. It is assumed that appraisers will value the land at its “highest and best use”, not its current use.



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Appendix E - Alternative 3A Cost Estimate

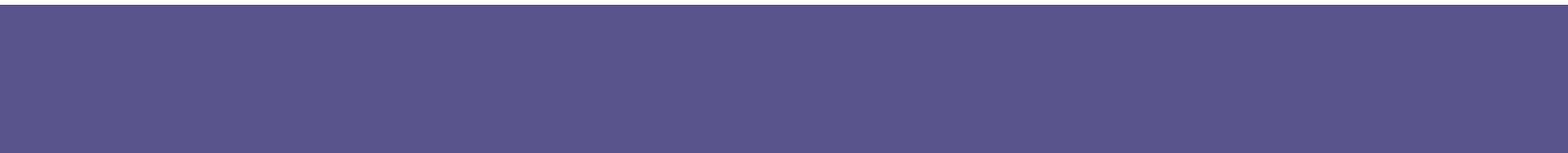
ALTERNATIVE 3A						
Roadway Construction		Quantity	Unit	Unit Price	Current \$ (2012)	Future \$ (based on 2040 @ 3%)
Roadway Construction (Rural Freeway)	Length	17.6	Miles	\$ 1,540,000	\$ 27,104,000	\$ 62,012,000
Bridges	# of bridges	2				
	Area (based on 2 - 46' wide * 1,900' long)	174,800	SF	\$ 180	\$ 31,464,000	\$ 71,987,000
Traffic Interchanges	# of TI's	5		\$ 20,000,000	\$ 100,000,000	\$ 228,793,000
Directional Interchanges	# of Directional TI's	2		\$ 70,000,000	\$ 140,000,000	\$ 320,310,000
Construction Subtotal					\$ 298,568,000	\$ 683,102,000
Design & Construction Engineering				20%	\$ 59,714,000	\$ 136,621,000
Construction Total					\$ 358,282,000	\$ 819,723,000
Right-of-way						
	Agricultural Area (based on 308' wide corridor)	610	ACRE	\$ 80,000	\$ 48,832,000	\$ 111,724,000
	Residential Area (based on 308' wide corridor)	47	ACRE	\$ 150,000	\$ 7,000,000	\$ 16,015,000
	# of intersections	5				
	Additional 45 acres per intersection	225	ACRE	\$ 80,000	\$ 18,000,000	\$ 41,183,000
	# of directional interchanges	2				
	Additional 100 acres per directional interchange	200	ACRE	\$ 80,000	\$ 16,000,000	\$ 36,607,000
	Subtotal	1082	ACRE		\$ 89,832,000	\$ 205,529,000
Project Subtotal					\$ 448,114,000	\$ 1,025,252,000
Project Contingency				20%	\$ 89,623,000	\$ 205,051,000
PROJECT TOTAL					\$ 537,737,000	\$ 1,230,303,000

General Note:

1. It cannot be assumed that the "existing" 66-foot rights-of-way have documented dedications. Nearly all were established through a Yuma County Board of Supervisors "Declaration of Right-of-Way", which does not ensure that right-of-way has been recorded.
2. Most lands necessary for development of the roadway were valued at \$150,000/acre. It is assumed that appraisers will value the land at its "highest and best use", not its current use.



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Appendix F - Alternative 3B Cost Estimate

ALTERNATIVE 3B						
Roadway Construction		Quantity	Unit	Unit Price	Current \$ (2012)	Future \$ (based on 2040 @ 3%)
Roadway Construction (Expressway)	Length	17.6	Miles	\$ 1,730,000	\$ 30,448,000	\$ 69,663,000
Bridges	# of bridges	1				
	Area (based on 1 - 118' wide * 1,900' long)	224,200	SF	\$ 180	\$ 40,356,000	\$ 92,332,000
Traffic Interchanges	# of TI's	2		\$ 20,000,000	\$ 40,000,000	\$ 91,517,000
Directional Interchanges	# of Directional TI's	0		\$ 70,000,000	\$ -	\$ -
	Construction Subtotal				\$ 110,804,000	\$ 253,512,000
Design & Construction Engineering				20%	\$ 22,161,000	\$ 50,703,000
	Construction Total				\$ 132,965,000	\$ 304,214,000
Right-of-way						
	Agricultural Area (based on 160' wide corridor)	317	ACRE	\$ 80,000	\$ 25,367,000	\$ 58,038,000
	Residential Area (based on 160' wide corridor)	24	ACRE	\$ 150,000	\$ 3,636,000	\$ 8,319,000
	# of intersections	2				
	Additional 45 acres per intersection	90	ACRE	\$ 80,000	\$ 7,200,000	\$ 16,473,000
	# of directional interchanges	0				
	Additional 100 acres per directional interchange	0	ACRE	\$ 80,000	\$ -	\$ -
	Subtotal	431	ACRE		\$ 36,203,000	\$ 82,830,000
	Project Subtotal				\$ 169,168,000	\$ 387,044,000
Project Contingency				20%	\$ 33,834,000	\$ 77,410,000
PROJECT TOTAL					\$ 203,000,000	\$ 464,449,000

General Note:

1. It cannot be assumed that the "existing" 66-foot rights-of-way have documented dedications. Nearly all were established through a Yuma County Board of Supervisors "Declaration of Right-of-Way", which does not ensure that right-of-way has been recorded.
2. Most lands necessary for development of the roadway were valued at \$150,000/acre. It is assumed that appraisers will value the land at its "highest and best use", not its current use.



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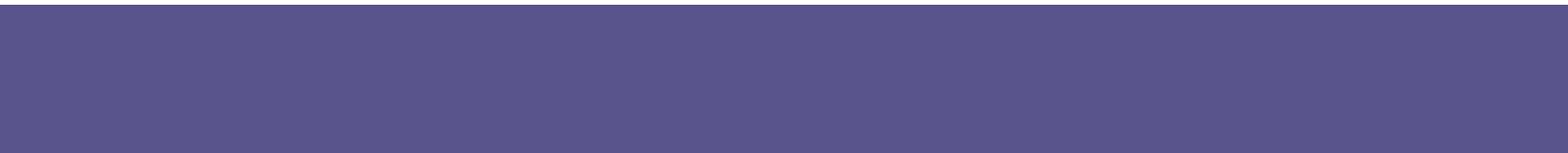


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Appendix G - Public Open House #1 Meeting Summary



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Public Open House #1 Meeting Summary

Meeting Date/Time: Tuesday, September 25, 2012 (5:30 pm - 7:30 pm)

Meeting Location: Yuma County Development Services Building
2351 West 26th Street
Yuma, AZ 85364

Meeting Participants: 51 community members attended

Team Members: Mark Hoffman, ADOT
Gabriella Kemp, ADOT
Russell Reichelt, City of Yuma
Doug LaMont, Parsons Brinckerhoff
Greg Fly, Parsons Brinckerhoff
Sarah Squires, Parsons Brinckerhoff
Matt Klyszeiko, RBF Consulting

Project Overview

The Arizona Department of Transportation (ADOT), in conjunction with the City of Yuma and its Transportation Consultant – Parsons Brinckerhoff and Public Involvement Consultant – RBF Consulting, is conducting the Yuma Expressway Corridor Study to evaluate the need and location for a proposed roadway within the south and western portions of the City of Yuma.

Public Open House #1 Purpose

As part of the overall corridor study process, the Study Team developed a comprehensive and interactive Public Involvement Plan to inform and include the public in the transportation planning process.

The Public Involvement Plan focused on meetings with stakeholders and the public scheduled at key technical milestones in the study process. The goal of this approach is to ensure that input and feedback provided by citizens and stakeholders will be effectively integrated and considered in the development of the final study and in the conception of project recommendations.

This initial Public Involvement Report outlines the public involvement effort that was performed as part of Public Meeting/Open House #1. The purpose of the first Public Open House was to provide interested residents and other project stakeholders with an overview of the current conditions, future conditions and system deficiencies of the overall transportation network within the defined study area to solicit their feedback and comment.

Public Meeting Notification

The Study Team considered several methods to notify the public of the first Public Open House meeting. Given the large population of the study area and the regional nature of the proposed Yuma Expressway project, it was determined that a combination of press releases, public advertisements and posting of project fliers would be the most effective method to promote and encourage the greatest level of public participation.

The press release and project fact sheets were distributed via GovDelivery to generate local media interest in attending the meetings as well as to inform local municipal staff and public officials. Project fliers were placed at Yuma City Hall, Heritage Library, Main Yuma Library, Foothills Library, Yuma MVD Offices, ADOT Yuma District Offices. The City of Yuma Communications team also assisted with distribution of the press release and flier to additional project stakeholders. To notify Yuma area residents, a half page advertisement was published in the September 19th edition of the Yuma Sun newspaper that provided a brief project description and information on the Open House meeting. On September 19th, a tandem advertisement was also placed on the homepage of the Yuma Sun website. *Meeting notification materials including Project Fact Sheet, Project Flier and newspaper advertisement are included in Appendix A.*



Meeting Entrance



Project Information Material

Public Meeting Overview

As part of the Yuma Expressway Corridor Study, a public Open House meeting was held on Tuesday, September 25 at the Yuma County Development Services Building, Aldrich Auditorium 2351 West 26th Street, Yuma, AZ to present and gather feedback on the existing and future conditions of the defined study area.

In total, an estimated 51 people attended the Open House meeting, with 43 people signing in. This included attendance by local TV and print media. A translator was also available to assist with Spanish speaking stakeholders, however no attendees required translation assistance. *Meeting sign-in-sheets are included in Appendix B.*



Media Coverage

The meeting started promptly at 6:00 pm with Mark Hoffman, ADOT Project Manager, welcoming the group and thanking all for attending. Mr. Hoffman then introduced the project team and gave a brief description of the overall project. Following introductions, Mr. Hoffman encouraged attendees to make sure they signed-in as well as collected the project information material, comment cards and identification surveys that were located at the entrance to the meeting. He also explained that all the project information that was being presented tonight is also available online at azdot.gov/yumaexpressway. After completing his opening remarks, Mr. Hoffman then introduced Doug LaMont, Project Manager with Parsons Brinckerhoff, to begin the formal PowerPoint presentation, which provided a detailed overview of the transportation study work effort to date.



Mr. LaMont began the formal presentation with a brief synopsis on the historical background of the proposed Yuma Expressway by reviewing past transportation planning efforts which initially referenced the conceptual corridor. After providing attendees with a historical background of the Expressway, Mr. LaMont presented how the current study area was established along with what it specifically represents. With the overall context of the project established, Mr. LaMont then turned the presentation over to Greg Fly, Deputy Project Manager with Parsons Brinckerhoff, to discuss the projects existing and future conditions.

Mr. Fly explained to the meeting attendees that the overall reason for the study is to ensure that the transportation system is able to meet both the current and future mobility needs of residents and businesses in the Yuma region. Consequently, the study effort first examined the current conditions found in the study area by reviewing the existing socioeconomic data, topography and utilities present, transportation infrastructure status, and environmental considerations. The general inventory of the current conditions analysis found:



- Several previous studies have addressed the Yuma Expressway project
- Primarily agricultural and low-density residential within the study area
- City of Yuma is the population and employment hub for the southwest Yuma County region
- Potential environmental considerations present

Following the current condition discussion, Mr. Fly then presented the projected future conditions found within and surrounding the study area. Mr. Fly discussed the future land use and development plans for the City of Yuma, City of Somerton, City of San Luis, Yuma County, Imperial County, California and the Marine Corps Air Station – Yuma. Mr. Fly went on to outline the future socioeconomic data for Yuma County as well as the status of the transportation infrastructure within the study area. The inventory of future conditions showed the following:

- Analysis doesn't show a need for capacity improvements along Avenue D and County 14th until Yuma County meets a population of 370,000
- Consensus on the importance of agricultural and military uses preservation among local planning agencies
- Absence of large commercial or residential growth within the study area
- SW Yuma County will continue to grow, the majority of which will occur outside the study area
- Existing infrastructure will remain largely unchanged through the next two decades

After completing his comments on future conditions, Mr. Fly then informed the attendees of the next steps of the project work effort, which included:

- Incorporation of feedback from September 25th public meeting
- Develop and refine alternative options
- 2nd round of public involvement
- Selection of a preferred alternative
- Final report and recommendations

Following the presentation, Mr. Fly turned the meeting over to Gabriella Kemp, Senior Community Relations Officer, ADOT, who outlined the format of the question and answer session (see following section for a detailed synopsis of the question and answer discussion). Subsequent to the question and answer period the meeting then moved to an open house format. Project staff made themselves available at project boards for one-on-one conversations. *The formal meeting presentation and display boards are included in Appendix C.*

Questions Posed During the PowerPoint Presentation and Open Discussion

The following is a summary of questions and responses provided by the project team during the conclusion of the PowerPoint presentation.

Q: Why is the MCAS-Yuma property included within the study?

A: *In order to ensure all potential impacts are considered during the study process, a “broad brush” is used to include all elements within the study corridor. As the project moves on, certain elements are then either evaluated in more detail or eliminated based on their assessed project impacts.*

C: Any future transportation project should stay on the Mesa in order to avoid impacts to the agriculture land that everyone needs in the valley.

R: *The Project Team understands the study area includes a large amount of “Prime and Unique Farmland”. Consequently, this study will consider this existing condition as the project moves forward and in the conception of project recommendations.*

Q: What does an expressway look like?

A: *An expressway is typically identified as a 6-lane major arterial roadway that consists of, 3 lanes in each direction, a center median, controlled access, and at-grade intersections within a 300’ right-of-way.*

Q: What about retention basins?

A: *This study focuses on the general need and location for an expressway in the study area. The need and location for specific design elements, such as retention basins, are typically identified during future phases.*

Q: What is the cost of this Study?

A: *The cost of the this current study is \$250,000*

Q: What type of development will this roadway create?

A: *It is difficult to determine what type of development this type of transportation corridor will create. It is recognized that this type of improvement would potentially promote more intense land uses along the corridor, however it would ultimately be*



up to land owners and the governing municipalities to determine the specific type and location of future development.

C: May want to look at water rights within the study area.

R: We will take your comment into consideration as the project moves forward.

Q: Have you considered downgrading the need for an expressway and developing a smaller roadway?

A: Given the current findings of the existing and future conditions analysis, we will definitely look at the possibility of a phased approach to roadway improvements within the corridor.

Q: Can you expand the study area near I-8 and California to examine the bridges?

A: The current study area does extend up to I-8, however it does not include a detailed analysis of the existing bridges located outside the study area. We will take your comment into consideration and discuss this issue with ADOT and the City of Yuma.

Q: If this project proposes to construct a bridge to I-8 will this cause 8th Street east of Avenue D to be widened?

A: It is uncertain at this time if any additional roadways within the study area would need to be improved as a result of the location of a bridge to I-8 along the Ave D alignment.

Q: We see the growth in the South County and understand the need for a bridge to I-8. What must happen to create the need for this bridge?

A: Typically the current bridges would need to reach capacity before an additional bridge is considered and/or built.

Q: Most of the need for this expressway is/will come from growth in the South County, so I recommend that the study consider the growth of this area over the growth of the study area.

A: Yes, the traffic modeling utilized in the study to analyze the existing and future transportation system considers the growth of the entire Yuma County region. The study area information displayed in the report is predominantly provided to help understand the potential impacts to the subject area.

Q: We are limited by Mexico to the South, California to the West, and the Range to the East, so a loop system may not be practical for the Yuma Area.

A: *Yes, the findings of the existing and future conditions suggest that a limited access expressway is not needed within the next two decades.*

Q: Looking at the future land use areas of the Avenue D corridor, I would suggest that some areas in the northern section of the corridor are identified with a High Density designation rather than the current low density designation.

A: *We will take your comment into consideration as the project moves forward.*

C: A high number of agriculture vehicles utilize Avenue D, so I would suggest taking that into consideration.

A: *Excellent comment, we appreciate the helpful feed back and will incorporate that information in our future work.*

Additional meeting comment forms, comments provided via email, and Title VI identification information are included in Appendix D.

The formal presentation adjourned at approximately 6:45 pm. Small group discussions continued until approximately 7:00 pm.

Following the Public Open House #1 meeting, a formal comment letter was also received on 10/18/11 from the Marine Corps Air Station (MCAS). A copy of this letter is included in Appendix E.

Appendix A – Newspaper Advertisement, Project Fact Sheet and Flyer

YOU ARE INVITED

YUMA EXPRESSWAY PUBLIC OPEN HOUSE

STUDY DESCRIPTION

The City of Yuma, in collaboration with the Arizona Department of Transportation, is in the process of conducting a preliminary assessment and feasibility analysis of the Yuma Expressway, a proposed roadway facility that would be located along the southwestern portions of the City of Yuma.

The Yuma Expressway Study will evaluate the need and determine a proposed location for this roadway facility by identifying a corridor alignment that would provide a southwest Yuma link to Interstate 8 and State Route 195.

MEETING LOCATION

Tuesday, September 25, 2012

6:00 - 7:30 p.m.

Presentation begins at 6 p.m.

Yuma County Development Services Building

Rich Auditorium

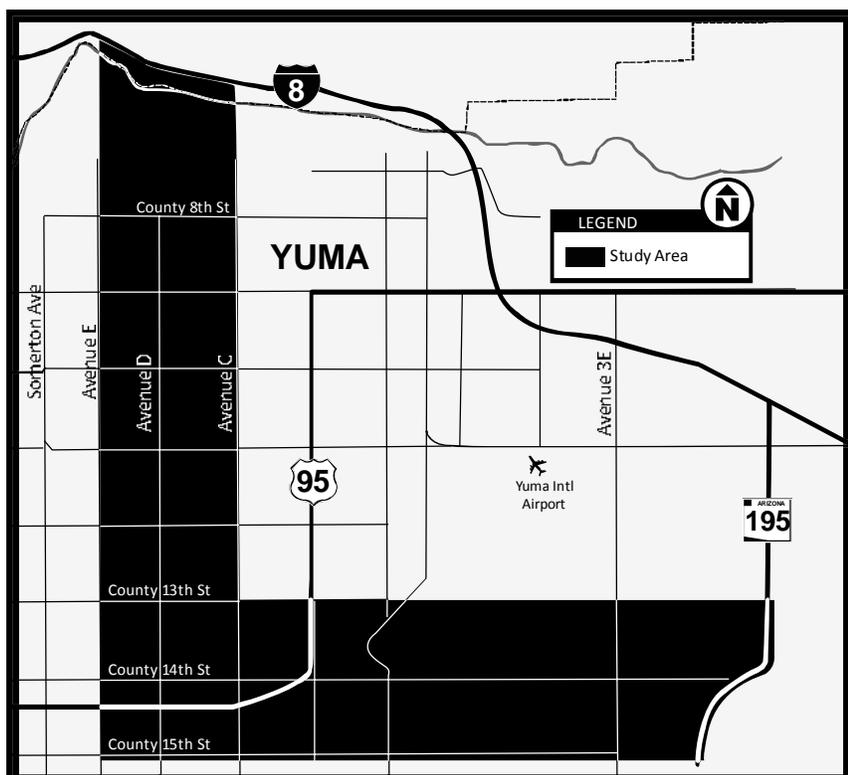
51 West 26th Street, Yuma, AZ 85364

WHAT WE WOULD LIKE TO HEAR FROM YOU

Input from Yuma County residents is very important to the success of the study. Your participation will help the study team learn more about existing conditions and identify possible future improvements.

WHAT TO EXPECT AT THE MEETING

A brief presentation about the study will be provided. Various maps and project information boards will be on display to review before and after the presentation. Representatives from the project team will also be available to collect comments and answer questions.



CONTACT INFORMATION

- ▶ **Mark R. Hoffman**
ADOT Project Manager
206 S. 17th Avenue, MD 310B Phoenix, AZ 85007
Phone: 602.712.7454
Email: mhoffman@azdot.gov
- ▶ **Gabriella Kemp**
ADOT Senior Community Relations Officer
2243 E Gila Ridge Road Yuma, AZ 85365
Phone: (928) 317.2165
Email: gkemp@azdot.gov

Pursuant to Title VI of the Civil Rights Act of 1964, and the Americans with Disabilities Act (ADA), ADOT does not discriminate on the basis of race, color, national origin, age, gender or disability. Persons that require a reasonable accommodation based on language or disability should contact Gaby Kemp, ADOT Senior Community Relations Officer, at 928.317.2165 or gkemp@azdot.gov. Requests should be made as early as possible to ensure the state has an opportunity to address the accommodation.

Yuma Expressway Study Public Open House

FACT SHEET

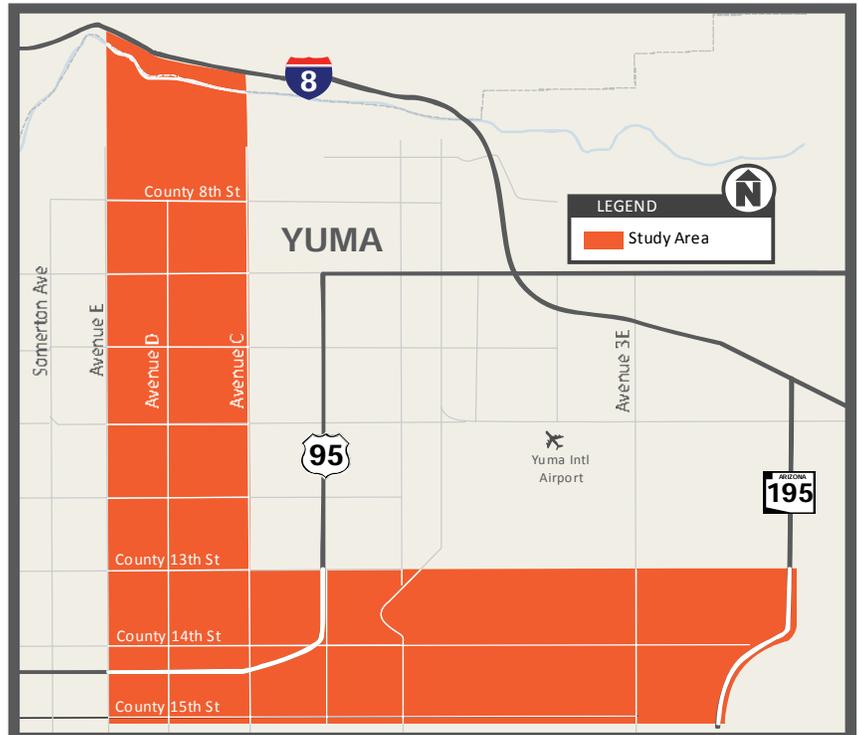
September 2012

The City of Yuma, in collaboration with the Arizona Department of Transportation, is conducting a preliminary assessment and analyzing the feasibility of a proposed corridor alignment along the southwestern portions of the City of Yuma.

The Yuma Expressway Study is intended to evaluate the need and determine a proposed location for roadway infrastructure improvements that will improve connections and traffic circulation for regional motorists. The study will identify a corridor that would potentially link southwest Yuma to Interstate 8. The proposed "Yuma Expressway" could provide substantial access for south Yuma County and cross border traffic heading west into California on Interstate 8. This project is the first step in a high-level planning evaluation that may be used as a basis for more detailed local project development in the future.

STUDY AREA

The study area includes a two mile corridor centered on County 14th Street and Avenue D with project limits at I-8 to the north and SR 195 to the east.



PUBLIC INVOLVEMENT

Public input is very important to the success of the study. Two public meetings will be held throughout the study process to gather information and suggestions from Yuma County residents. A study website has also been created to provide easy access to information:
azdot.gov/yumaexpressway.

STAY INFORMED

- ▶ Mark R. Hoffman
Project Manager
Arizona Department of Transportation
206 S. 17th Avenue, MD 310B Phoenix, AZ 85007
Phone: 602.712.7454
Email: mhoffman@azdot.gov
- ▶ Gabriella Kemp
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YOU ARE INVITED

YUMA EXPRESSWAY PUBLIC OPEN HOUSE

Tuesday, September 25, 2012

5:30 - 7:30 p.m.

Presentation begins at 6 p.m.

Yuma County

Development Services Building

Aldrich Auditorium

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Yuma, AZ 85364

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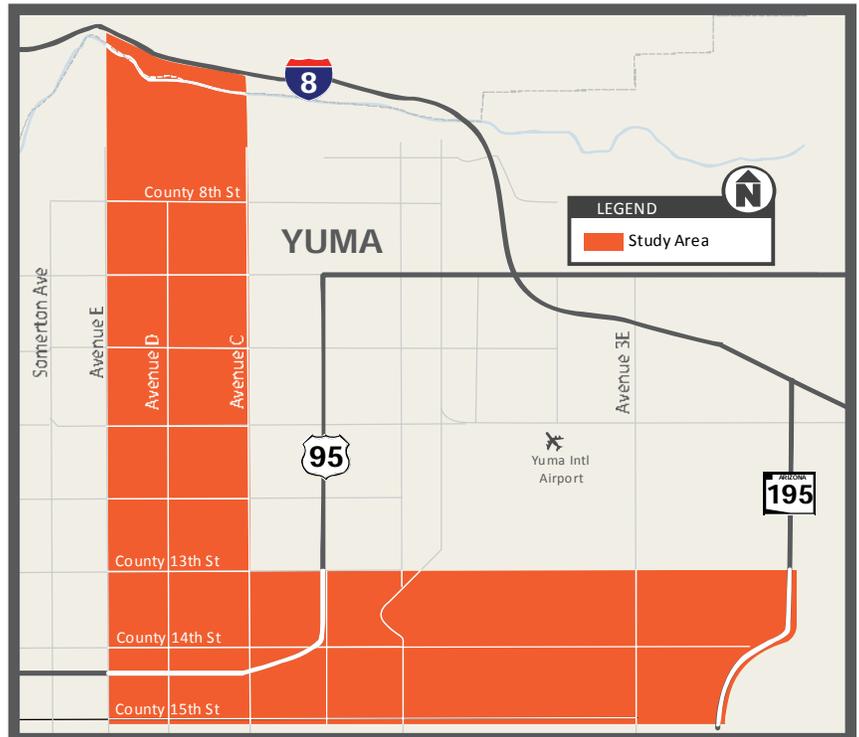
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WHAT TO EXPECT AT THE MEETING

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STAY INFORMED

- ▶ Mark R. Hoffman
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Appendix B – Sign In Sheets

Yuma Expressway Public Open House

TUESDAY, SEPTEMBER 25, 2012 • 5:30 P.M. - 7:30 P.M. • YUMA COUNTY DEVELOPMENT SERVICES BUILDING • 2351 WEST 26TH STREET • YUMA, AZ 85364

Completion of this sign-in sheet is completely voluntary and helps the project team keep an accurate record of meeting attendees. Under state law, any identifying information provided below will become part of the public record and, as such, must be released to any individual upon request. Please print clearly.

NAME	ADDRESS	PHONE	EMAIL
Gret Larson	8755 S. AVEPOED	809-9539	ANTHROAS@AOL.COM
Thomas R Smith	1031 S. Brahma L	702 928-210-3726	Boezmens@Roadrunner-Com
Alan Pruitt	PO Box 6662 YUMA AZ 85366	928-328-1524	ALANPRUITT@gmail.com
Andy Schwager	13213 S. Ave 4 1/4 E YUMA AZ 85365		ANDYS-911@7AHD0.COM
Judy Rembert	6700 W. Co. 12TH Yuma	726-4493	
Doug & S. Rembert	" "	" "	
Jeri Kreimuh	4585 W. Irene St.	344-2003	
Arleen Cutsforth	4581 W. LA QUINTA LP.	503-7735	
Doug Nicholls	200 E. 16th St #150	344-5931	dnicholls@core-cy.com
Cary Meister	PO Box 6395	782-3557	ymsconsultation@yahoo.com
Wm Bousky	11482 E 34TH St	286-9490	W B Bousky@aol.com
J.P. Wadley	3799 W MARSH DR SOMERSET AZ 85380	246-1759	J.P. Wadley@AZWestern.edu
David Nish	2044 S. 60th Ave	373-5015	
Melissa Smith	3126 S 47TH Ave		kwntdown@aol.com

12-410

Yuma Expressway Public Open House

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NAME	ADDRESS	PHONE	EMAIL
MARSHA PARKS	11398 S. TUCSON DR	928 345 2009	MISSYPARKS@MSN.COM
Bruce Cuming	4155 W Co 12th St	928 726 8571	
Bruce Fenske	ADOT	928 317 2138	BFenske@azdot.gov
PAT Morgan	3742 W. Co 11th St.	929-726-4353	Pmorgan@ymtd.org
Kara Reickelt	155 W 14th St	928-373-4516	russell.reickelt@yuma.az.gov
Charles Gattiker	3900 W 15th Highway 95	928-580-6877	CSGATTIKER@gmail.com
Jeremy Claridge	3417 W Co 14th St	928-388-8027	jeremy.claridge@gmail.com
Rick Dropie	3449 Cuervo Ln	928-726-6896	rdropie@roadrunner.com
Bob Woodman	13388 Ave SE	928-344-5464	LINNGUR@AZOL.COM
Tim Dawn	1025 W. 24th Subd. 2	928-941-0176	timdawn@jdsavil.com
Ann Beardsley	155th 14th & Yuma.	(928) 573-4520	Ann.Beardsley@YumaAZ.gov
Shirley Burch-Dale	3194 W Patricia Ln	928 726 1010	sh-burch@hotmail.com
Kerik Dale	" "	" "	Matt.kernw@yuma.com

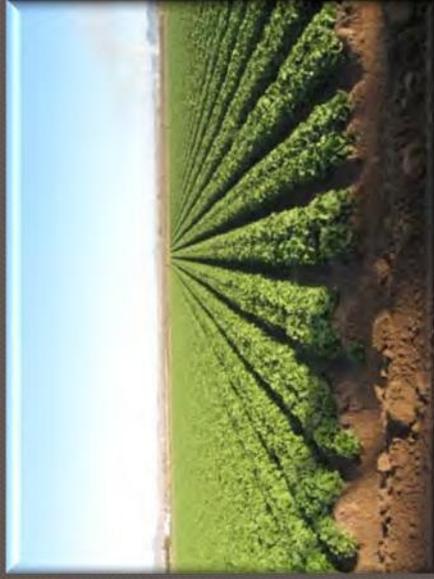
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NAME	ADDRESS	PHONE	EMAIL
Louise & Helen Kell	1990 W. West Co. 74 th Yuma 85365	627.8249	
Iman Campbell	3400 4 th AVE YUMA	210.3651	
McDermoto Samrs	3540 W 5 th St	928.2100104	
Trudy W Schuppert	AWC	928.726.6200 +	TRUDY.SCHUPPERT@KAWC.ORG
Bob Johnson	1439 S. 35 th AVE	928 210 8113	bobjohnsonjr@roadrunner.com
Robert Misemer	MCA5 YUMA	928 269-2272	robert.misemer@usmc.mil
Ed Dill	10203 S. Deakley Dr	928-581-9252	
Fean Adams	" "	" "	
Kelly Hughes	12374 S. AVE C	928-726-8541	
Bennie Craker	2221 W 19 th Pl	928-783-2599	
Melvin Thayer	4333 W 8 th Yuma	928.248.4210	
Goyce Arbeat	Yuma Scen	539-6853	
Kay + Carolyn Butcher	8791 S ave D	782-0304	
PAULA BACKS	MCA5	269-2103	Paula.backs@usmc.mil

Appendix C – PowerPoint Presentation and Display Boards



Yuma Expressway Corridor Study

Public Information Meeting
September 25, 2012

Today's Meeting

- Background
- Overview: Current Conditions
- Overview: Future Conditions
- Next Steps
- Feedback: Questions/Comments



Speakers



- ◉ Doug Lamont
 - Senior Engineering Manager, Parsons Brinckerhoff
 - Project Manager



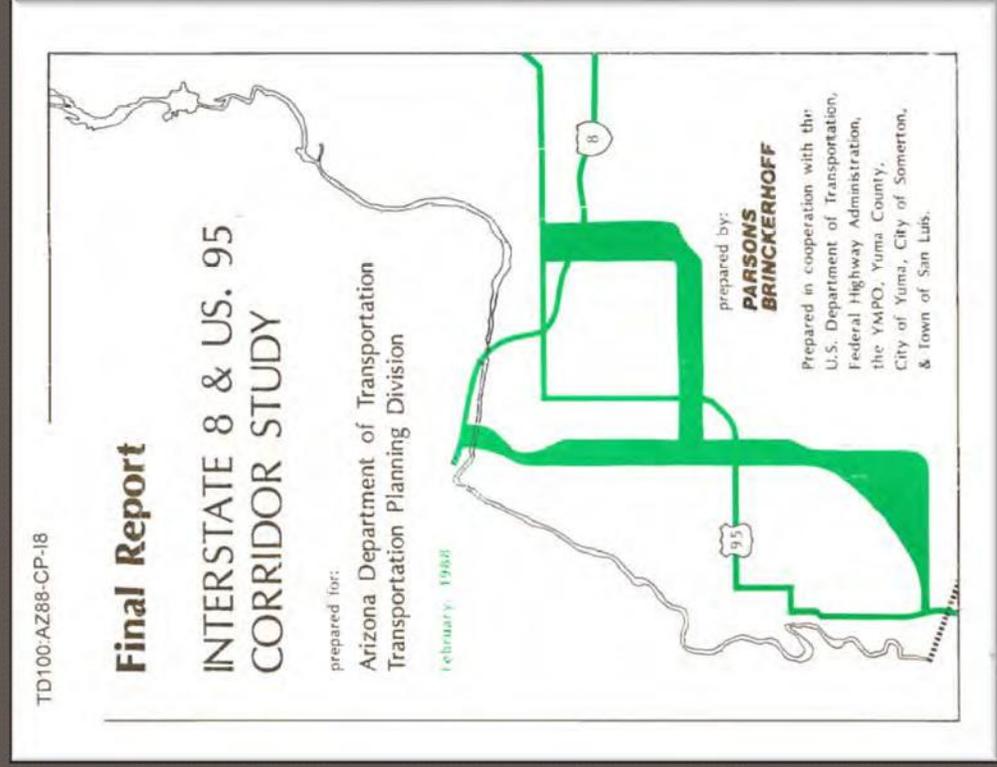
- ◉ Greg Fly
 - Planner/Roadway Engineer, Parsons Brinckerhoff
 - Deputy Project Manager

Background

1988

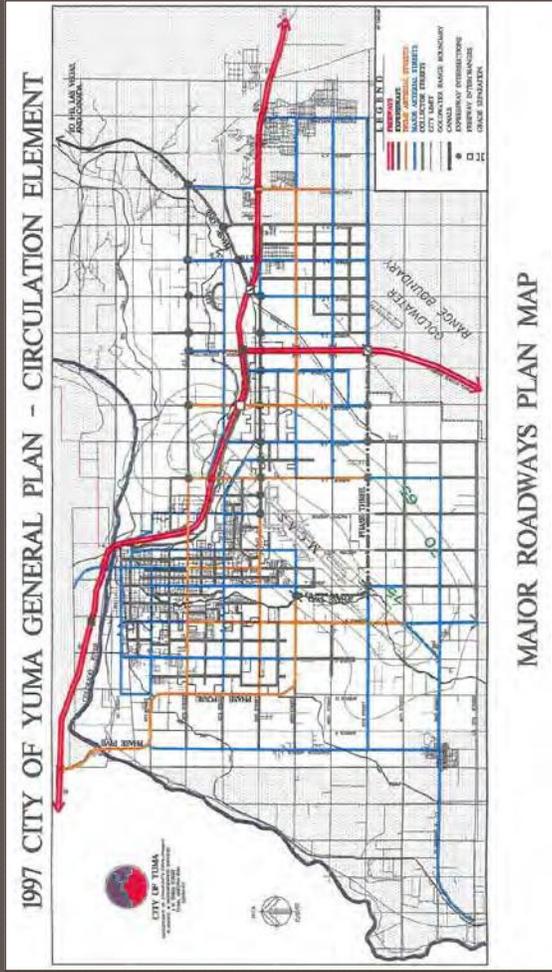
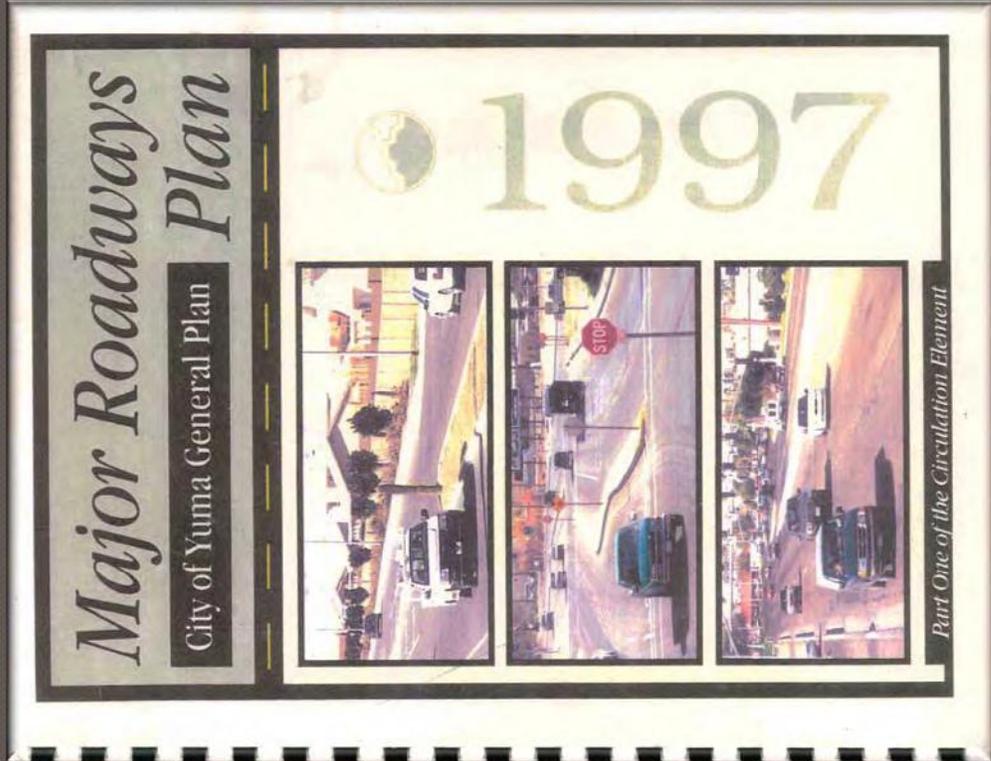
● I-8 and US 95 Corridor Study

- Recommended Yuma Expressway corridor within close proximity of the existing Avenue D and County 14th Street alignment
- Alignment carried over into 1990-2010 Countywide Transportation Plan



1997

Major Roadways Plan (City of Yuma General Plan)



Background

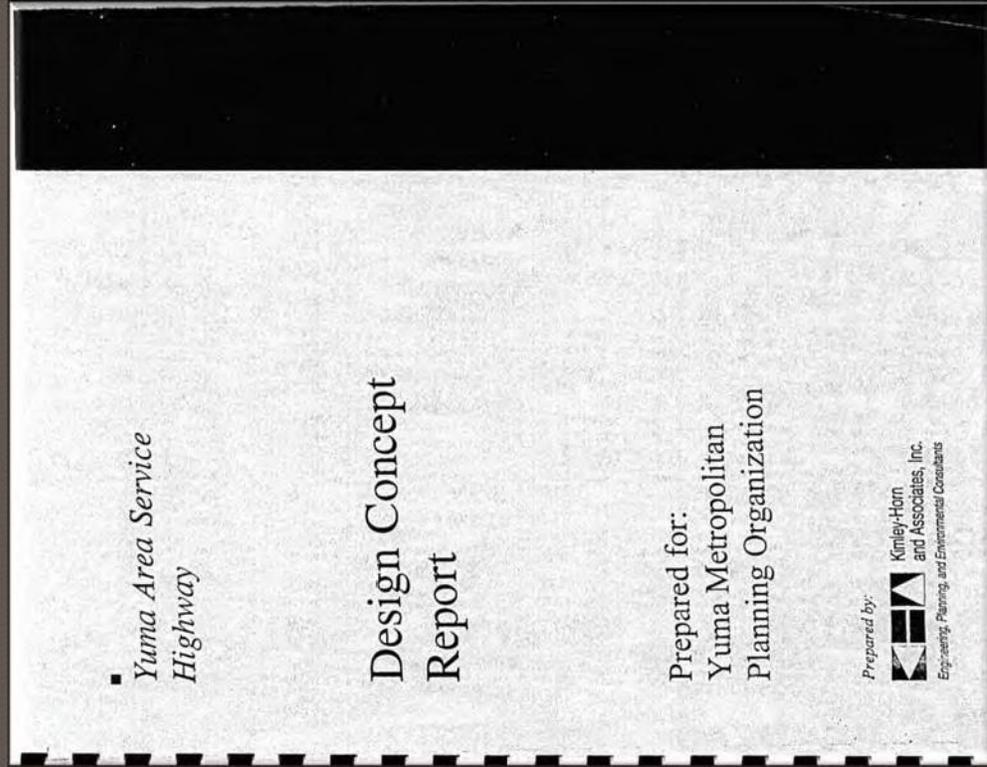
Current Conditions

Future Conditions

Next Steps

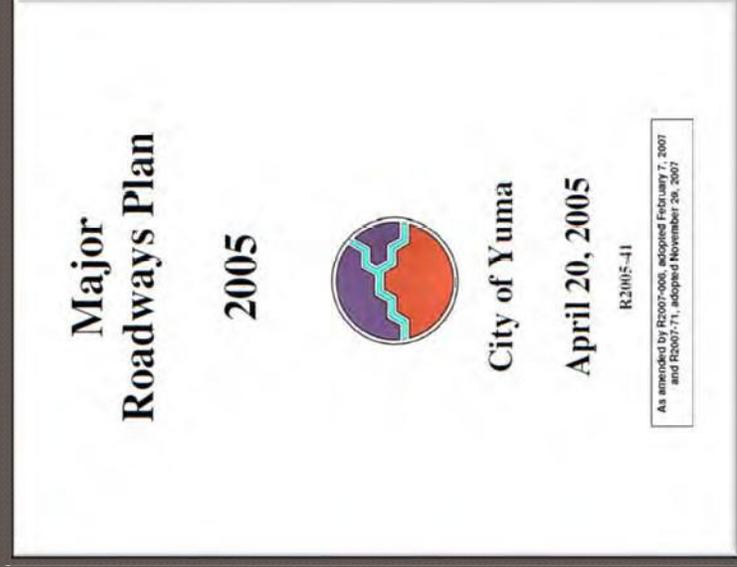
1998

- Area Service Highway (SR 195) Design Concept Report



2002, 2005

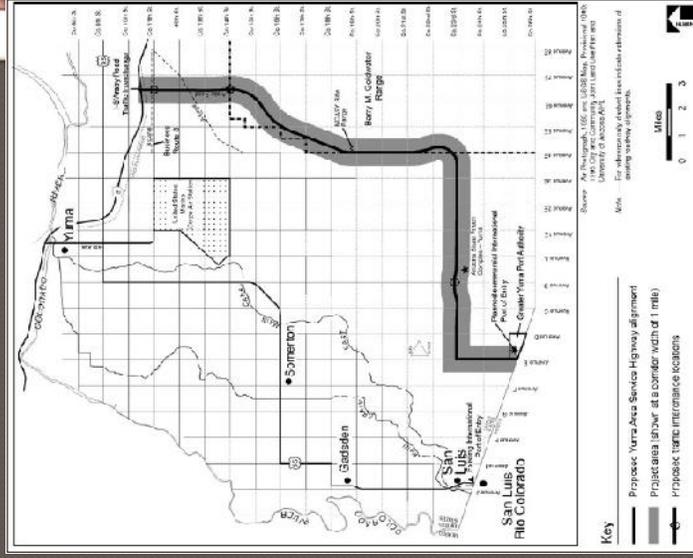
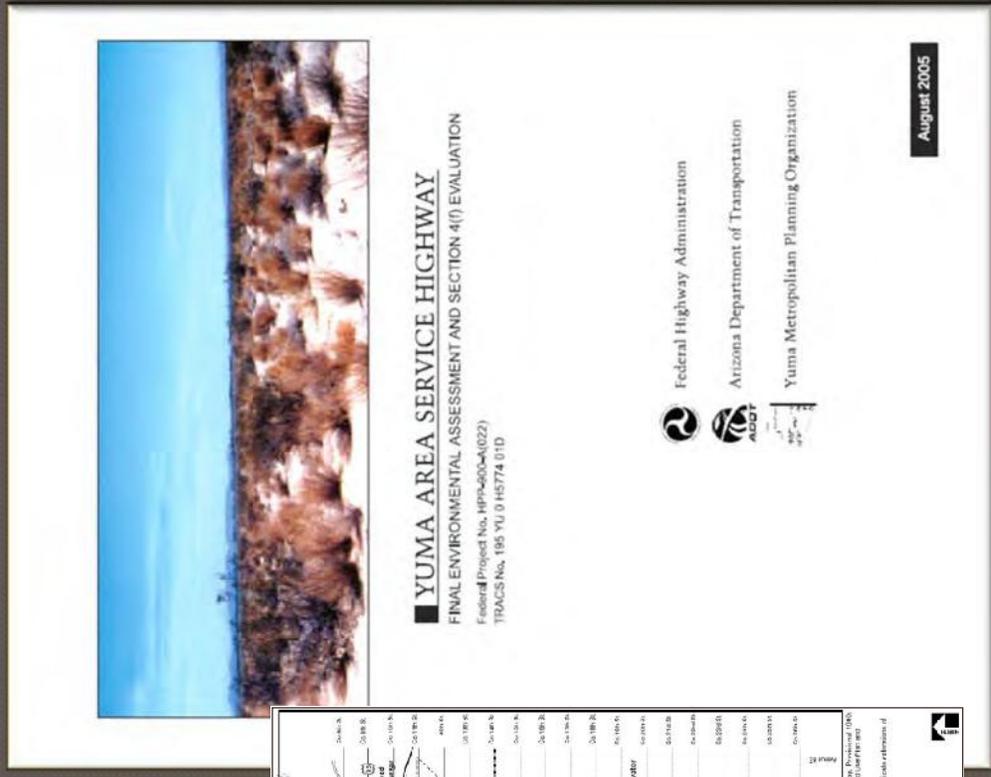
- City of Yuma Major Roadway Plan/General Plan
 - Included Yuma Expressway along Avenue D and County 14th Street



2005

Yuma Area Service Highway (SR 195) Environmental Assessment completed

- Yuma Area Service Highway (SR 195)



Background

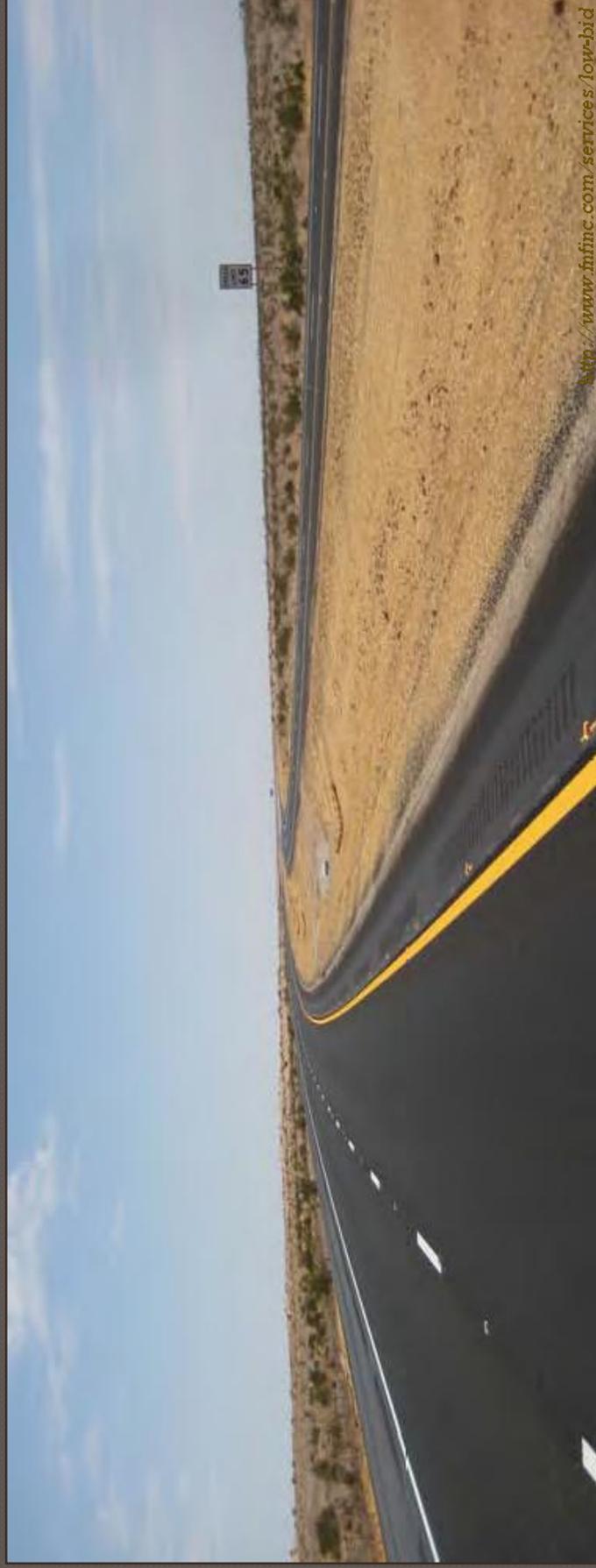
Current Conditions

Future Conditions

Next Steps

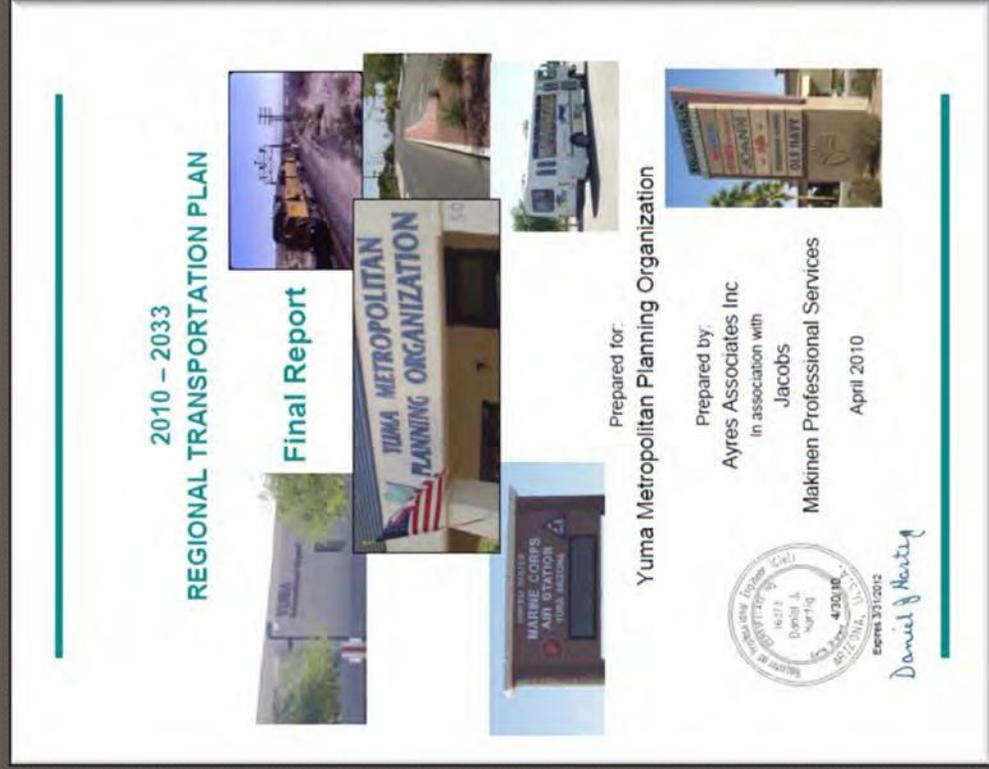
2009

- Area Service Highway (SR 195) completed



2010

- Yuma Metropolitan Planning Organization (YMPO): 2010-2033 Regional Transportation Plan
 - Yuma Expressway (planning) listed as a recommended project for 2010-2014.
 - Yuma Expressway (construction) not in 2033 Regional Transportation Plan



2011

- Planning Assistance for Rural Areas (PARA) Grant
 - City of Yuma applied for, and ADOT granted assistance

ADOT
PLANNING
ASSISTANCE
FOR RURAL AREAS
(PARA)

STUDIES

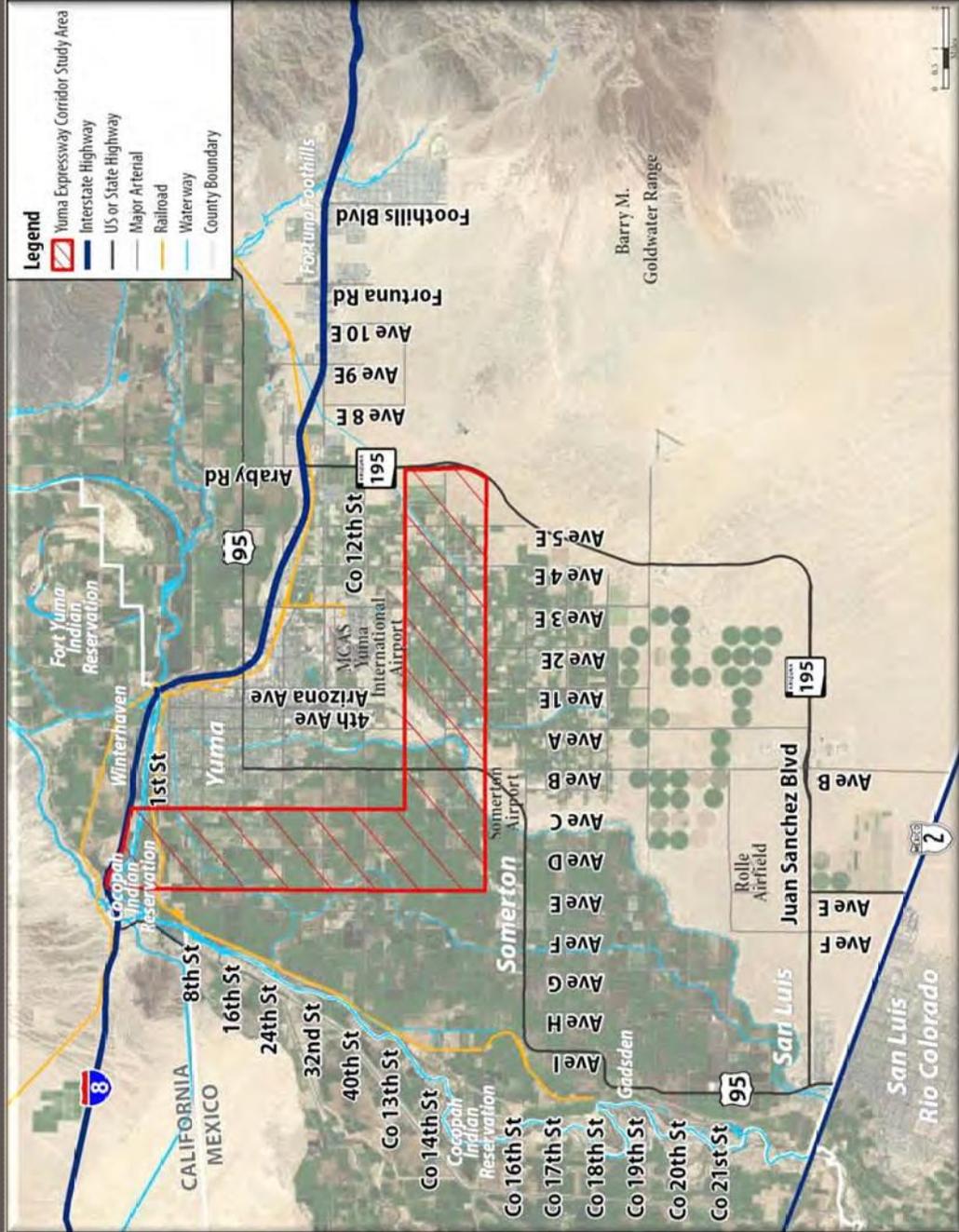


2012

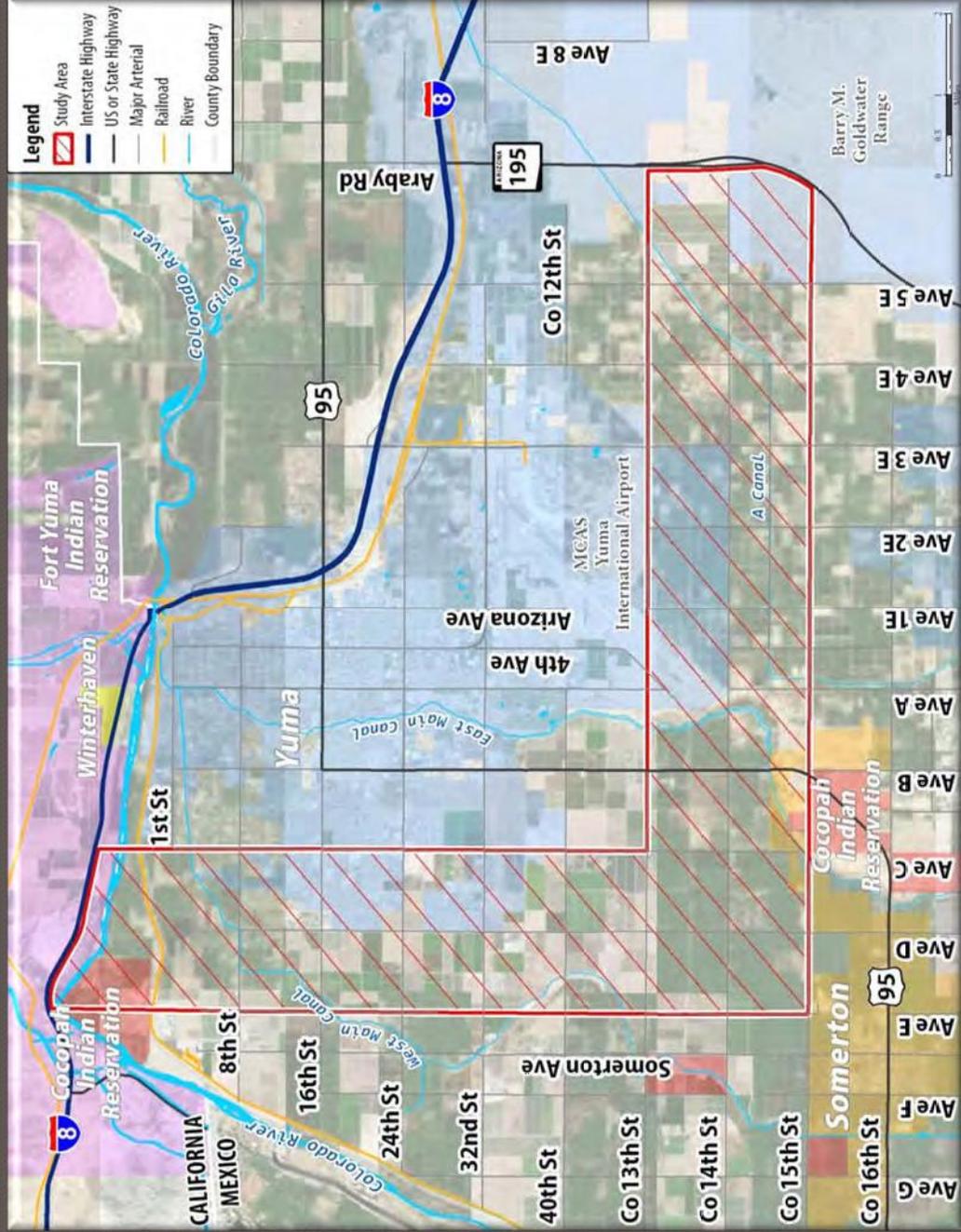
- **City of Yuma General Plan**
 - Included Yuma Expressway along Avenue D and County 14th Street
- **City of Yuma Capital Improvement Program FY 2012 to 2021**
 - Yuma Expressway included as Priority III project for FY 2012
- **March 27th, 2012:**

Yuma Expressway Corridor Study begins

Project Vicinity



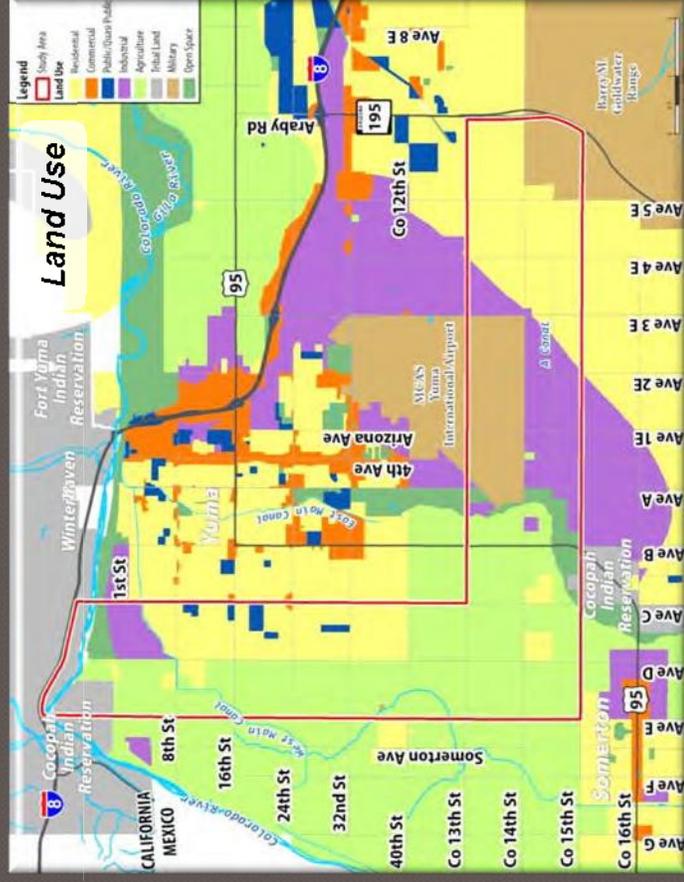
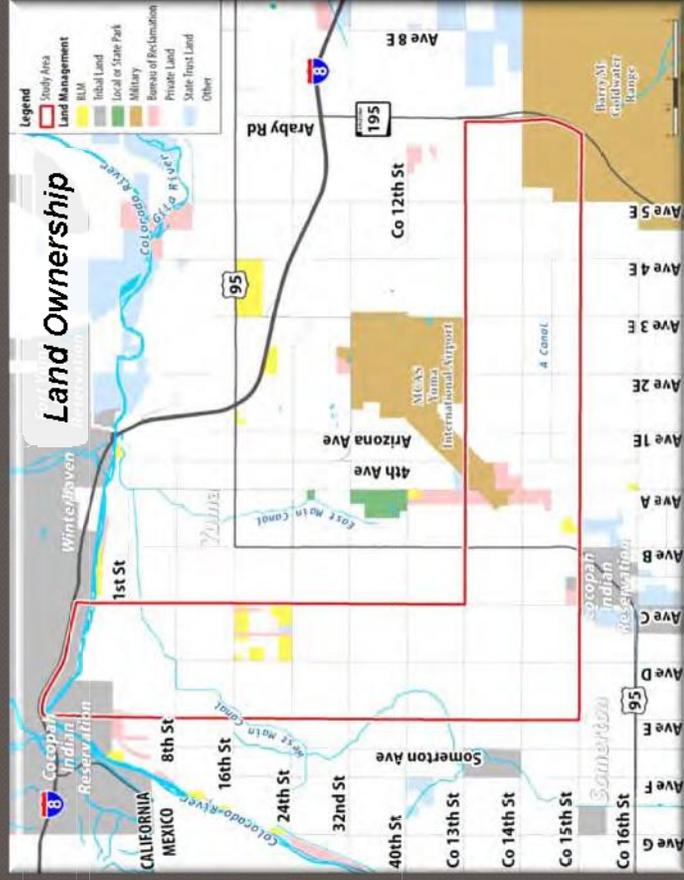
Study Area



Current Conditions

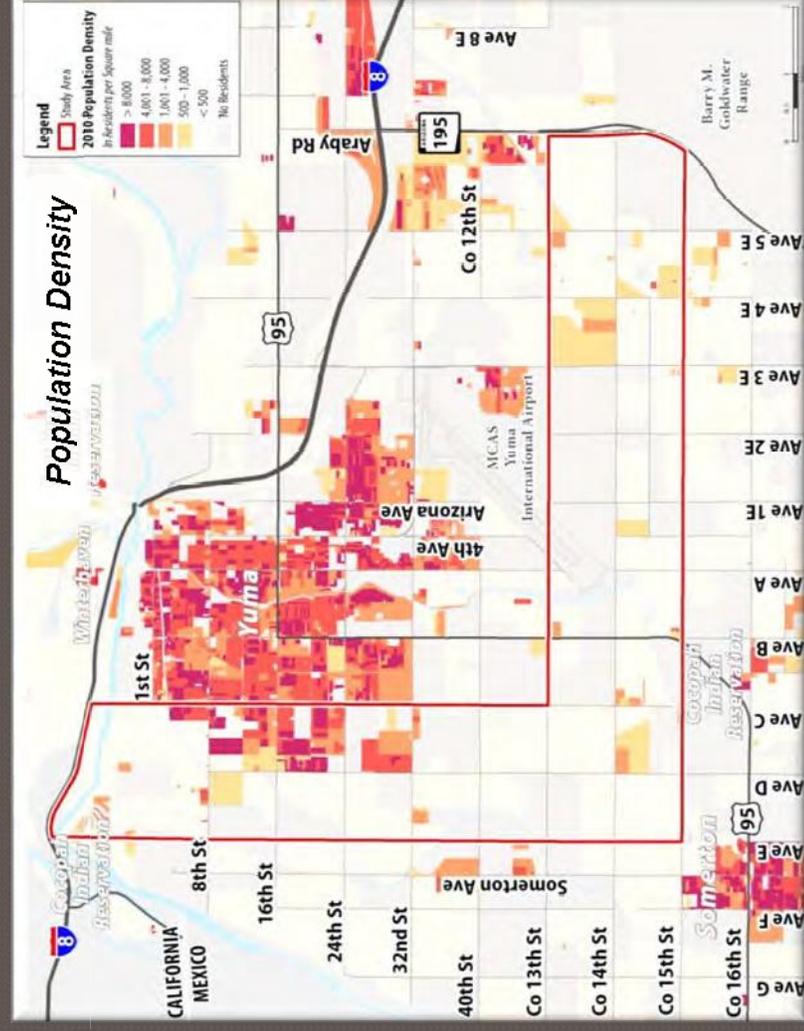
Socioeconomic

- Land Ownership/Use
 - Mainly private ownership, dedicated to agricultural and residential.
 - Next largest land uses include industrial, military and tribal lands.



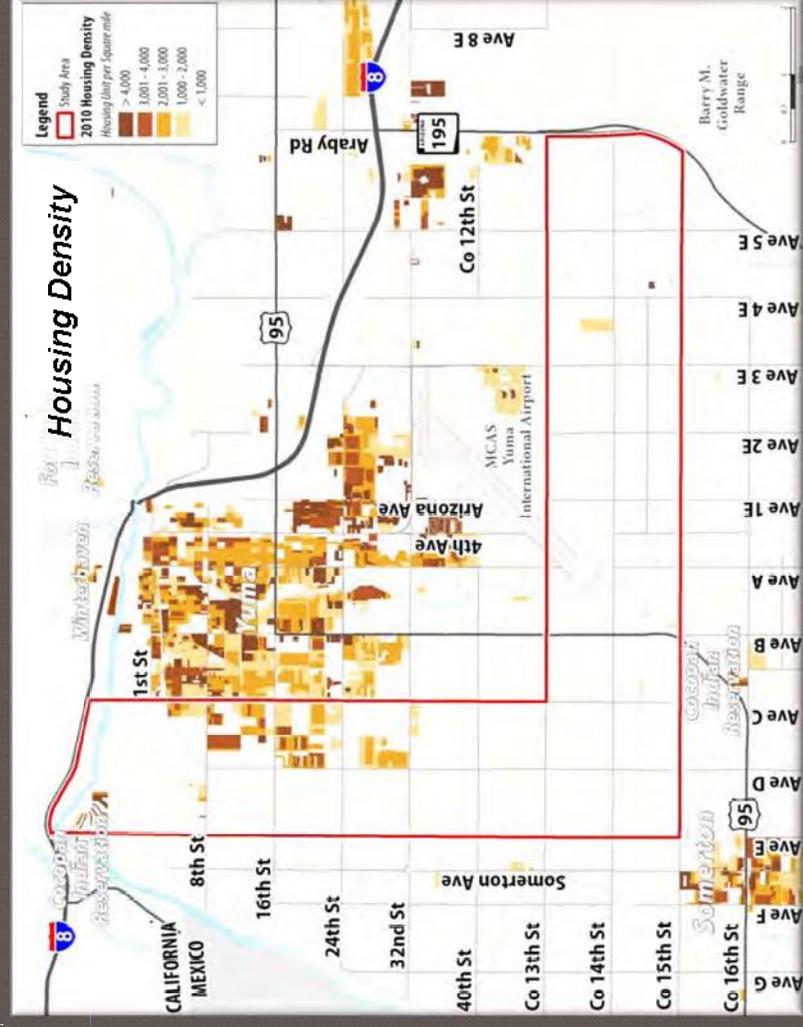
Socioeconomic

- Population
 - 55% of study area population lives in Yuma; 42% in unincorporated areas
 - 2000-2010 population: **growth** in cities of Yuma and Somerton, unincorporated areas, and Yuma County; **loss** in both Indian reservations



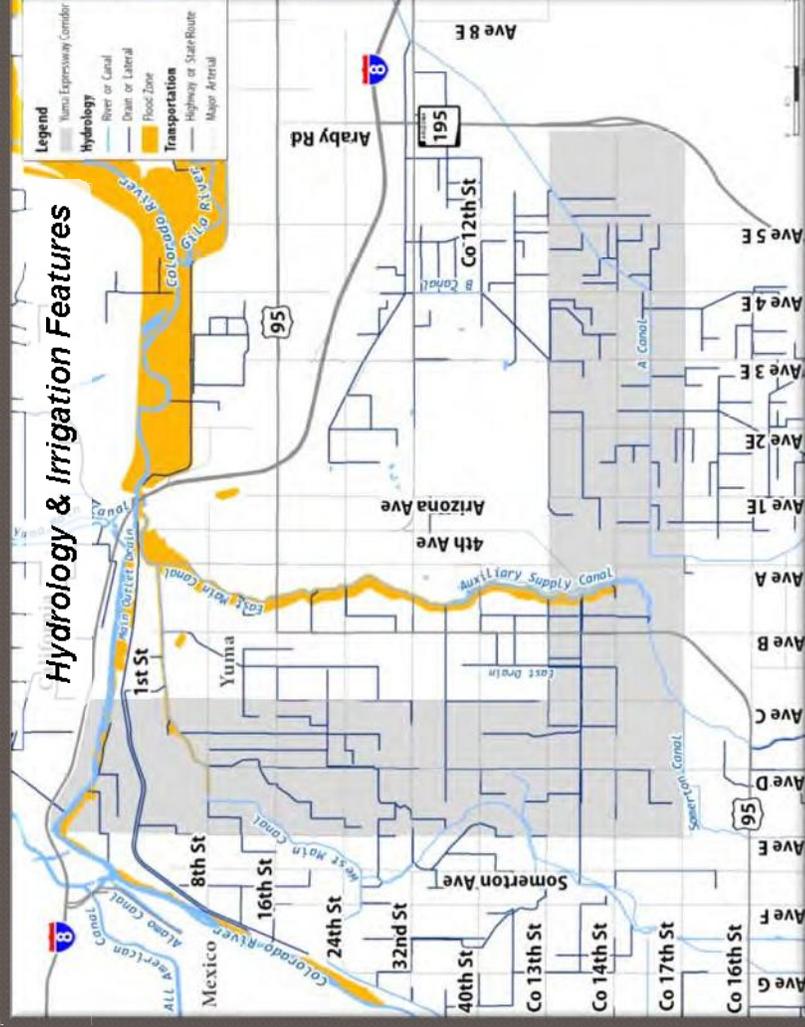
Socioeconomic

- **Housing**
 - Majority of vacant houses on Cocopah Indian Reservation
- **Employment**
 - Top employers:
 - > MCAS-YUMA
 - > Yuma Regional Medical Center
 - > City of Yuma
 - > Yuma County



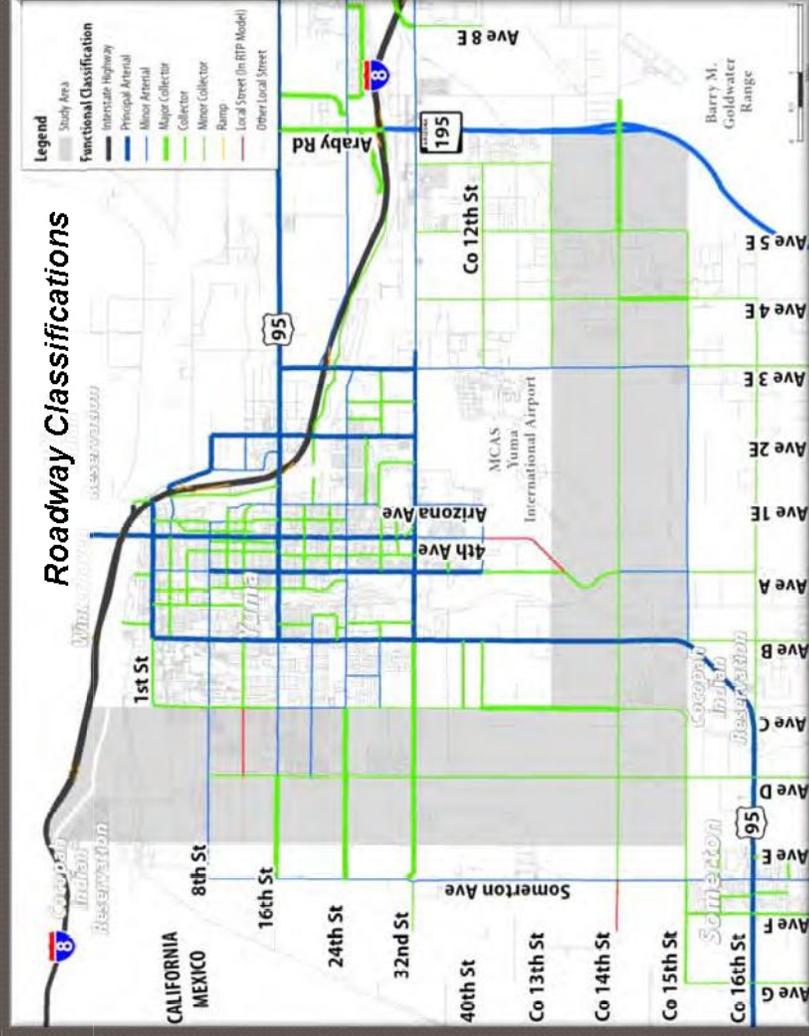
Topography & Utilities

- **Topography**
 - Flat topography, low elevation
 - Colorado River to the north
 - Canals, running north-south
 - Several floodplains
- **Utilities**
 - Both private and public utilities present



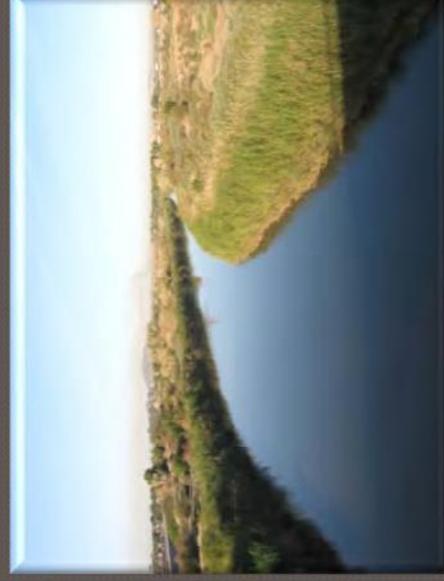
Transportation Infrastructure

- Roadway Classifications
 - Avenue D and County 14th Street are both “minor collectors”:
 - 2-lane; 50mph; low traffic volumes



Environmental Considerations

- 2010 U.S. Census
 - Environmental Justice populations present but comparable to/less than Yuma County
- Additional Environmental Issues
 - Six protected animal species potentially occur in the study area
 - Protected farmland present
 - Environmental challenges at Colorado River



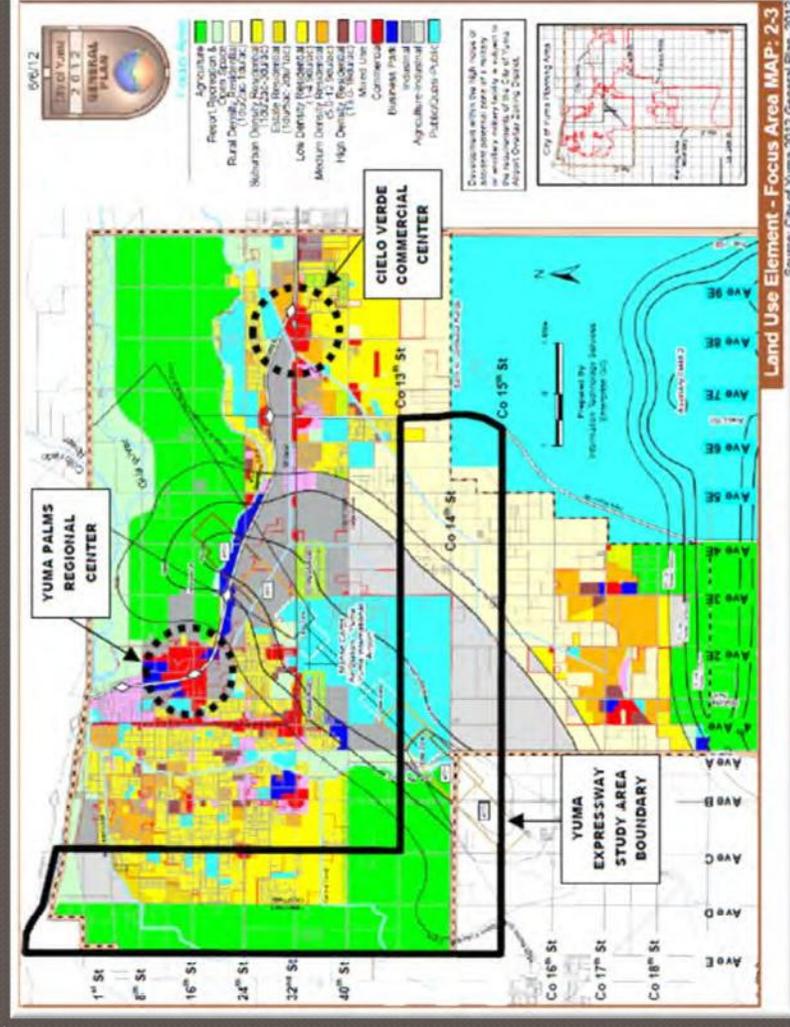
Inventory of Current Conditions

- Several previous studies have addressed the Yuma Expressway project
- Primarily agricultural and low-density residential within the study area
- City of Yuma is the population and employment hub for the southwest Yuma County region
- Potential environmental considerations present

Future Conditions

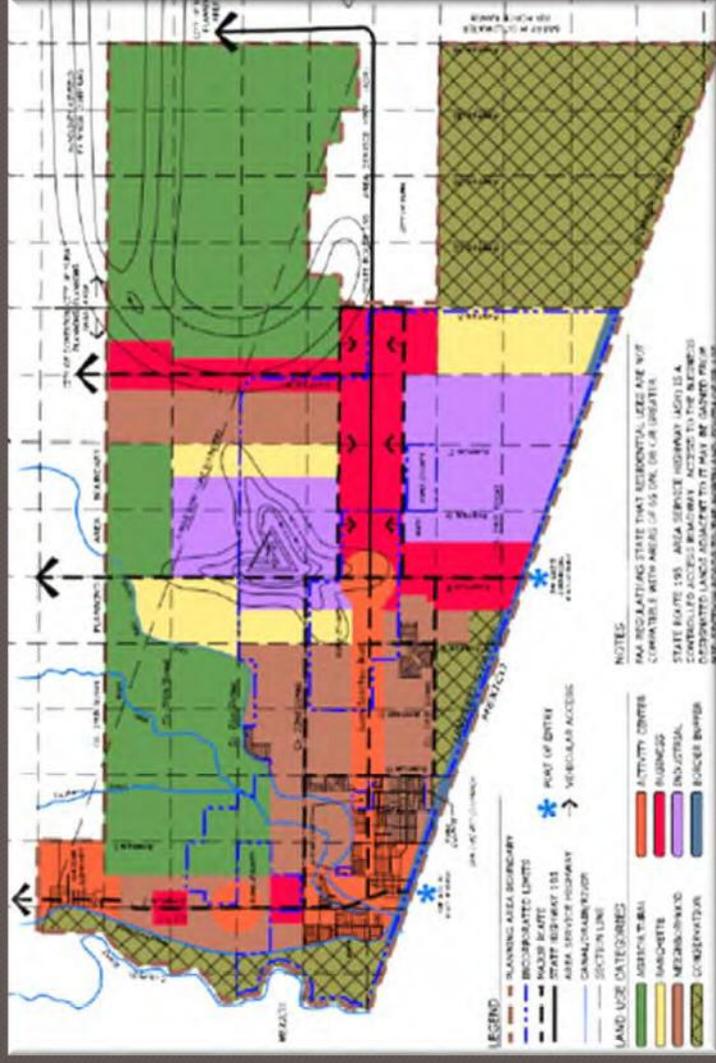
Land Use & Development

- City of Yuma 2012 General Plan
 - Minimize encroachment into prime agricultural lands
 - Growth Element addresses Yuma Expressway



Land Use & Development

- City of San Luis 2010 General Plan
 - Growth predicted to occur north and east
 - Protection and maintenance of agricultural lands a priority



Land Use & Development

- **Yuma County 2020 Comprehensive Plan**
 - Future residential development to maintain rural character
 - Limited development within the study area due to close proximity of MCAS-YUMA and Barry M. Goldwater Range
- **Imperial County, California General Plan**
 - Winterhaven, CA popular destination for seasonal residents, trend expected to continue

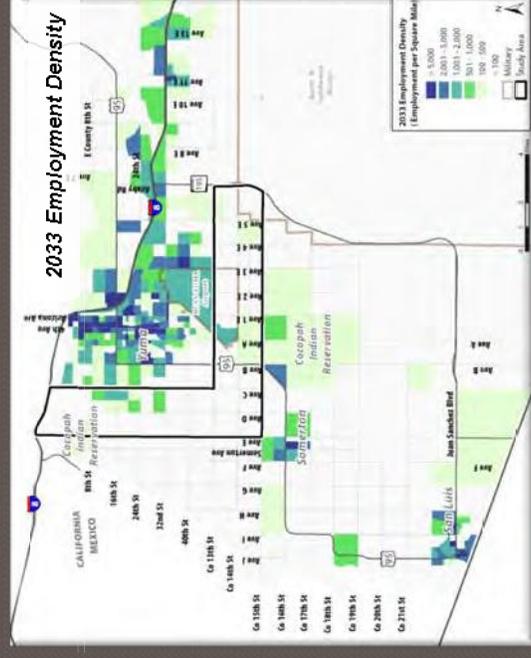
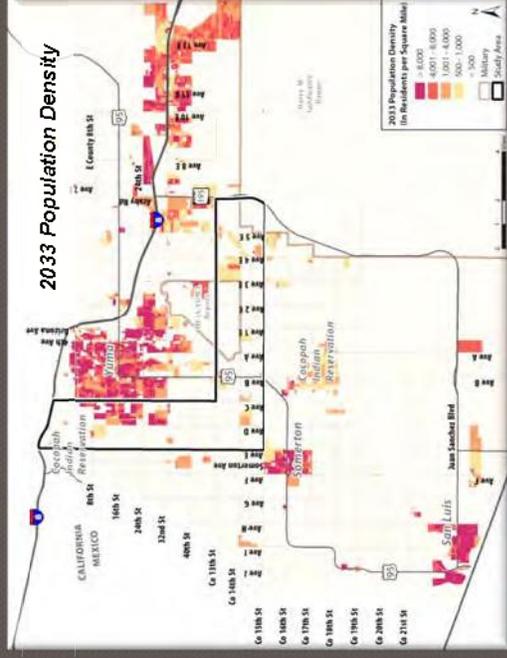
Land Use & Development

- MCAS-YUMA Master Plan
 - Main gate/entrance moved south, access from County 14th Street
 - Extension of MCAS-YUMA roadway Frazier Avenue



Socioeconomic

- Population
 - Yuma County projected to increase by nearly 60% by 2033
 - Growth concentrated in San Luis and Somerton
- Employment
 - 90% increase in employment predicted for San Luis and Somerton by 2033



Transportation Infrastructure

- Capacity improvements for existing (rural, two-lane) Avenue D and County 14th Street will be required at a population threshold of approximately:

370,000 residents within Yuma County.

(current Yuma County population ~200,000)

Inventory of Future Conditions

- Consensus on the importance of agricultural and military uses preservation among local planning agencies
- Absence of large commercial or residential growth within the study area
- SW Yuma County will continue to grow, the majority of which will occur outside the study area
- Existing infrastructure will remain largely unchanged through the next two decades

Next Steps

What Happens Next?

- Incorporation of feedback from September 25th public meeting
- Develop and refine alternative options
- 2nd round of public involvement
- Selection of a preferred alternative
- Final report and recommendations

Questions & Comments

Contact Us

- E-Mail:

kkugler@rbf.com

- Regular Mail:

RBF Consulting

Attn. Kevin Kugler

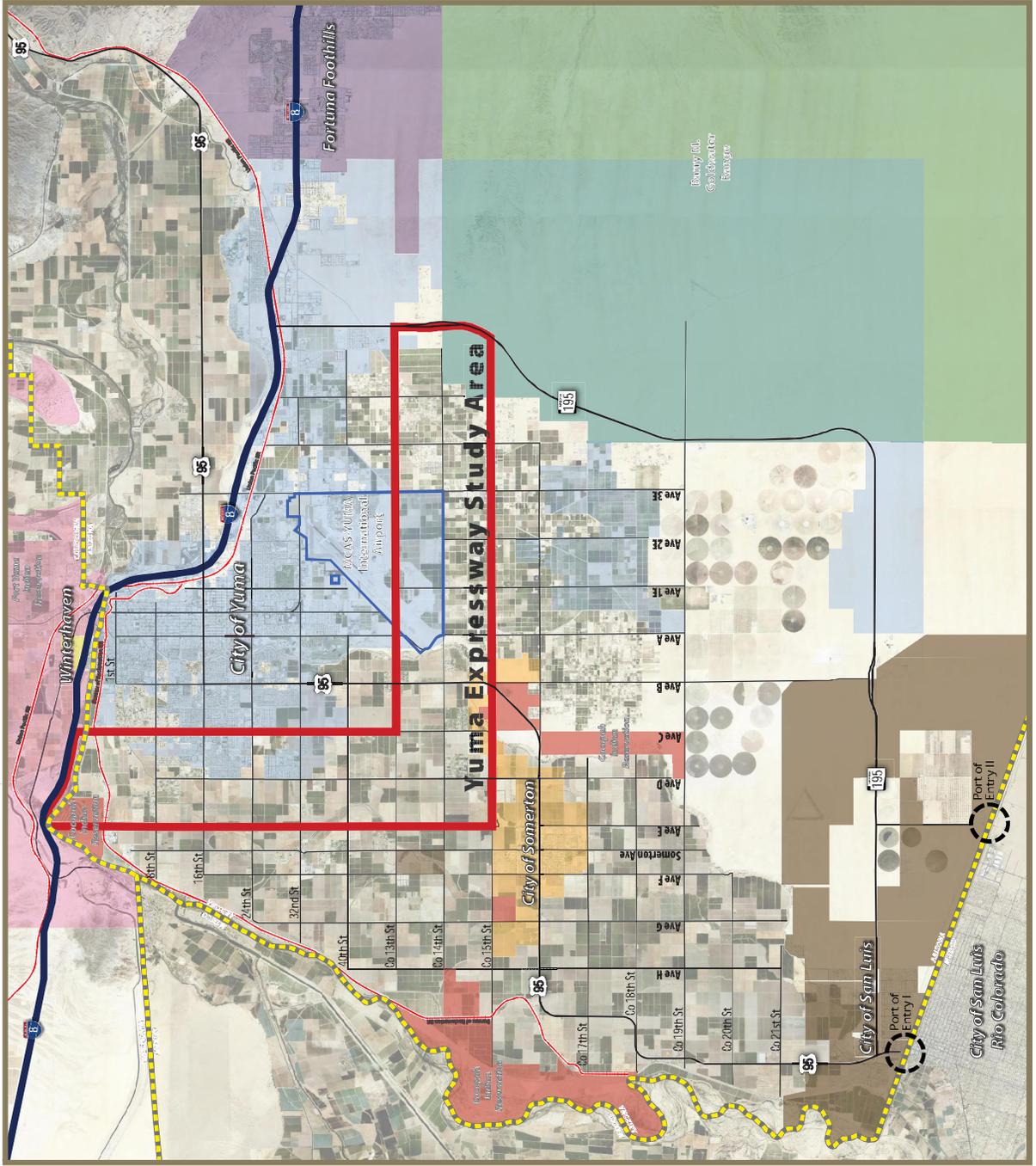
16605 N. 28th Avenue, Suite 100

Phoenix, AZ 85053

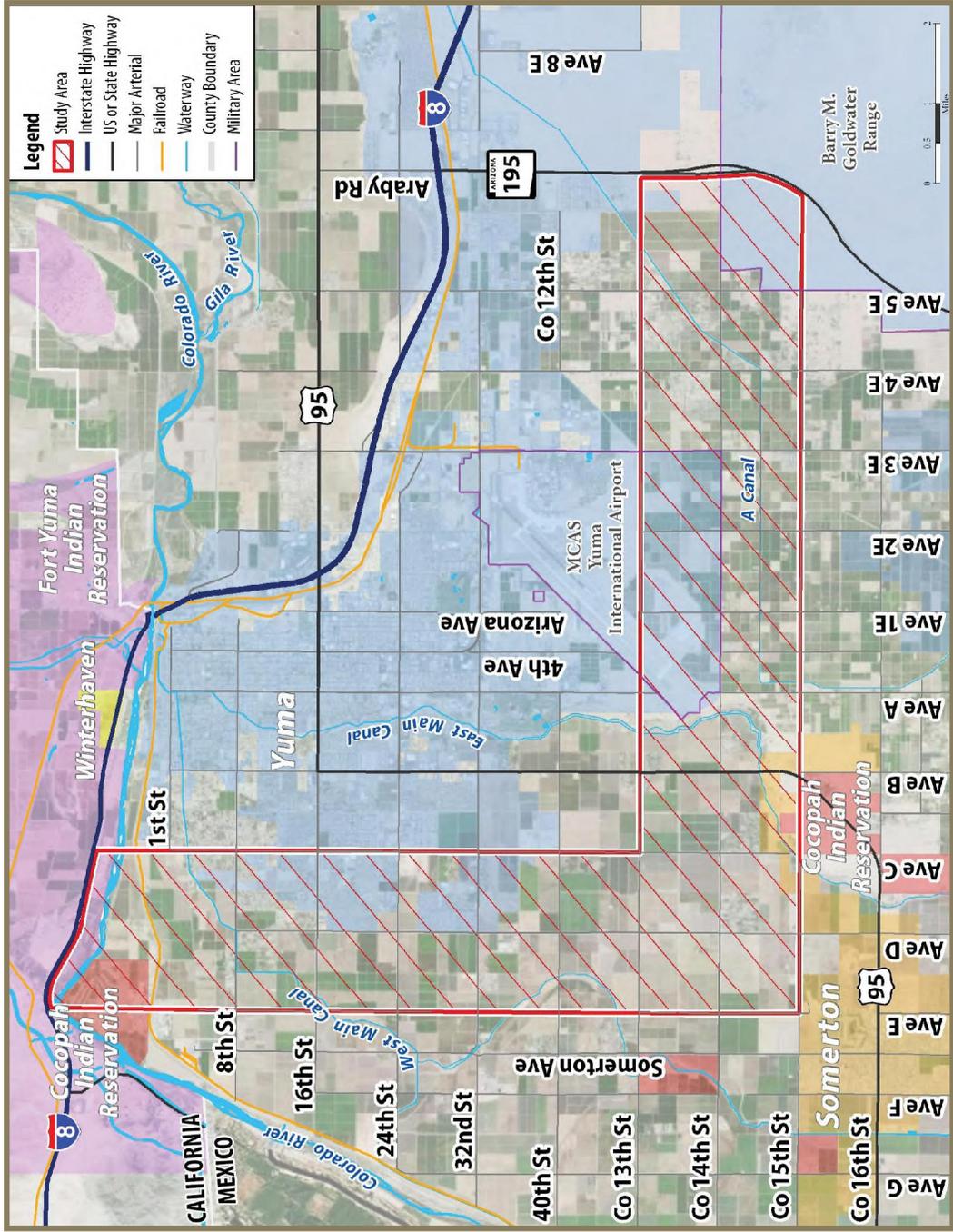
- Phone:

1-602-467-2200

VICINITY MAP



STUDY AREA



Appendix D – Comment Forms, Electronic Comments, and Title VI

Yuma Expressway Study

COMMENT FORM

Please provide us any comments regarding the study or your input about a potential new corridor alignment that would link southwest Yuma to Interstate 8.

COMMENTS: _____

Condition for the future
The Growth of South
Yuma. I was shocked of traffic
going both ways.
Even today sitting at Sahuila
High School there is a great amount
of traffic going south on Avenue B
and also going north.
There is a need for further study
Access to the North of I-8
with intersection at Algodos Mexican
Plains the study east of Ave D.

Optional

BENNIE CARLOS 2271 W 19th AVE YUMA AZ 85364

Name:

Address:

City:

State:

ZIP:

Phone:

Fax:

Email:

bc-fbla@peoplepc.com

Completed comment forms can be submitted to the project team at the completion of the public meeting or sent to the ADOT Outreach Team by **October 9, 2012**. Please send comments to Kevin Kugler c/o RBF Consulting, 16605 N. 28th Avenue, Suite 100, Phoenix, AZ 85053; Fax: 602.467.2204; or Email: kkugler@rbf.com.

Completion of this comment form is completely voluntary. All comments provided will become part of the study's documentation. Under state law, any identifying information provided will become part of the public record, and as such, must be released to any individual upon request.

12-413

ADOT



City of YUMA

FOR MORE INFORMATION:
azdot.gov/yumacxpressway

Yuma Expressway Study

COMMENT FORM

Please provide us any comments regarding the study or your input about a potential new corridor alignment that would link southwest Yuma to Interstate 8.

COMMENTS:

1. Express way will ^{change} ~~increase~~ land use?
2. Show land with water rights
3. Can express way be reduced to primary roads?
4. Can footprint be changed?
5. North end bridge connecting to California is important.
6. Yuma is not able to expand like Phoenix so why is an expressway needed.
7. Do Not build the Expressway!
8. Let high density housing go east to lands outside both irrigation Districts.
9. Will the corridor encourage the currently opposed railroad development? over →

Optional
Name: C. Sattzer Address: 3900 W US Highway 95, Somerton AZ ZIP: 85350
Phone: Fax: Email:

Completed comment forms can be submitted to the project team at the completion of the public meeting or sent to the ADOT Outreach Team by **October 9, 2012**. Please send comments to Kevin Kugler c/o RBF Consulting, 16605 N. 28th Avenue, Suite 100, Phoenix, AZ 85053; Fax: 602.467.2204; or Email: kkugler@rbf.com.

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12-410

ADOT



City of YUMA

FOR MORE INFORMATION:
azdot.gov/yumacxpressway

Yuma Expressway Study

COMMENT FORM CONT'D

ADDITIONAL COMMENTS:

10. Combine study with current studies
being done by Somerton & the
Cocopah Tribe.

Yuma Expressway Study

COMMENT FORM

Please provide us any comments regarding the study or your input about a potential new corridor alignment that would link southwest Yuma to Interstate 8.

COMMENTS:

① The study is too narrow concerning how it will serve the southwest residents of the county concerning the principle goal of connecting that west bound traffic to I-8 efficiently

② The study area is presently utilized as the corridor for moving large slow moving Ag equipment from the Yuma Valley to Ag lands east as far as Wellton-Mohawk Valley

③ Question to consider: How would the study area have changed if Yuma County had been awarded the grant. Use the grant (my tax dollars) to serve the better purpose

Optional

Name: Thomas R Smith Address: 1031 S Brahma LN Yuma AZ 85364
City: State: ZIP: Email: beezmans@coxrunner.com

Phone:

Fax:

Email:

Completed comment forms can be submitted to the project team at the completion of the public meeting or sent to the ADOT Outreach Team by **October 9, 2012**. Please send comments to Kevin Kugler c/o RBF Consulting, 16605 N. 28th Avenue, Suite 100, Phoenix, AZ 85053; Fax: 602.467.2204; or Email: kkugler@rbf.com.

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12-112

ADOT



City of YUMA

FOR MORE INFORMATION:
azdot.gov/yumaexpressway

Yuma Expressway Study

COMMENT FORM

Please provide us any comments regarding the study or your input about a potential new corridor alignment that would link southwest Yuma to Interstate 8.

COMMENTS: We don't need an Express Lane.

Keep the Express on the Mesa. Our farm land in

the valley will be needed for long years

Optional

Name: Lucas Redd Address: 4990 Wood County 14th St Yuma, AZ City: Yuma State: AZ ZIP: 85305
Phone: _____ Fax: _____ Email: _____

Completed comment forms can be submitted to the project team at the completion of the public meeting or sent to the ADOT Outreach Team by **October 9, 2012**. Please send comments to Kevin Kugler c/o RBF Consulting, 16605 N. 28th Avenue, Suite 100, Phoenix, AZ 85053; Fax: 602.467.2204; or Email: kkugler@rbf.com.

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FOR MORE INFORMATION:
azdot.gov/yumaexpressway

Yuma Expressway Study

COMMENT FORM

Please provide us any comments regarding the study or your input about a potential new corridor alignment that would link southwest Yuma to Interstate 8.

COMMENTS: Farming still grows Yuma. Any growth will come from South County, in particular San Luis and the new commercial Port of Entry. This study area will never have the type of growth necessary to support the type of highway like 195. Consider arterial passages into south county.

Optional

Name: Jeremy Claridge Address: 4317 W Co 14th St Yuma City: Yuma State: AZ ZIP: 85365
Phone: _____ Fax: _____ Email: jeremy.claridge@gmail.com

Completed comment forms can be submitted to the project team at the completion of the public meeting or sent to the ADOT Outreach Team by **October 9, 2012**. Please send comments to Kevin Kugler c/o RBF Consulting, 16605 N. 28th Avenue, Suite 100, Phoenix, AZ 85053; Fax: 602.467.2204; or Email: kkugler@rbf.com.

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12-412

ADOT



City of YUMA

FOR MORE INFORMATION:
azdot.gov/yumacexpressway

Yuma Expressway Study

COMMENT FORM

Please provide us any comments regarding the study or your input about a potential new corridor alignment that would link southwest Yuma to Interstate 8.

COMMENTS:

No Farm Land in Yuma Valley should be compromised

Community needs to protect the air station & farm land

Do not need expressway to head point

Expressway would adversely affect land & water rights throughout valley

There is a need for a bridge over the Colorado River at the mouth end of valley

Optional

Name:	Address:	City:	State:	ZIP:
James McDermott	3546 W Suns St	Scottsdale	AZ	85256
Phone:	Fax:	Email:		
927 210 0104	5145124@AOL.COM			

Completed comment forms can be submitted to the project team at the completion of the public meeting or sent to the ADOT Outreach Team by **October 9, 2012**. Please send comments to Kevin Kugler c/o RBF Consulting, 16605 N. 28th Avenue, Suite 100, Phoenix, AZ 85053; Fax: 602.467.2204; or Email: kkugler@rbf.com.

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12-19



FOR MORE INFORMATION:
azdot.gov/yumaexpressway

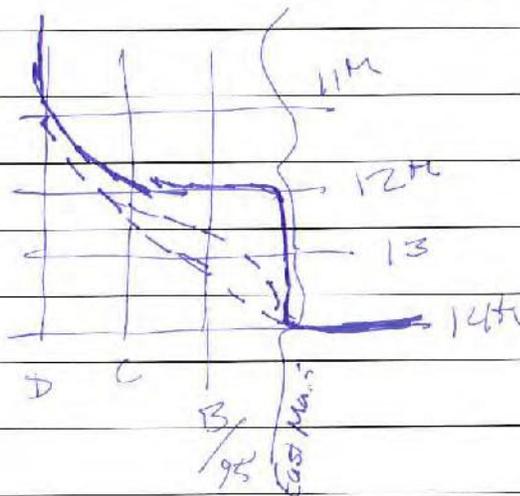
Yuma Expressway Study

COMMENT FORM

Please provide us any comments regarding the study or your input about a potential new corridor alignment that would link southwest Yuma to Interstate 8.

COMMENTS: _____

The Study needs to look at a corridor along the existing East Main Canal and Highway 95 from Co. 14th Street up to about Co. 12th Street - there is no need to go out to Ave. D until you get close to the urban part of city - don't go through the prime farmland.



Optional

Name:	Address:	City:	State:	ZIP:
Phone:	Fax:	Email:		

Completed comment forms can be submitted to the project team at the completion of the public meeting or sent to the ADOT Outreach Team by **October 9, 2012**. Please send comments to Kevin Kugler c/o RBF Consulting, 16605 N. 28th Avenue, Suite 100, Phoenix, AZ 85053; Fax: 602.467.2204; or Email: kkugler@rbf.com.

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FOR MORE INFORMATION:
azdot.gov/yumaexpressway

Yuma Expressway Study

COMMENT FORM

Please provide us any comments regarding the study or your input about a potential new corridor alignment that would link southwest Yuma to Interstate 8.

COMMENTS: I attended to learn about the long range plan,
I live in La Quinta at 32nd/D.
I was concerned about farm land as well
Ave D & 14th st. are major areas for farm
equipment.

Optional

Teri Freeman 4585 W. Irene St Yuma AZ 853104

Name:

Address:

City:

State:

ZIP:

Phone:

Fax:

Email:

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12-119



FOR MORE INFORMATION:
azdot.gov/yumaexpressway

Yuma Expressway Study

COMMENT FORM

Please provide us any comments regarding the study or your input about a potential new corridor alignment that would link southwest Yuma to Interstate 8.

COMMENTS: Concerns about route up "D" farmland & Canals. "D" and 14TH CRY ARE FARM EQUIPMENT Routes. 6 Lanes with Median & Frontage Road seems unrealistic for Community. WE ALREADY HAVE Hwy 95 / B why not continue AVE B to I-8? Less property owners affected and would provide I 8 access.

By 2033 our modes of transportation could dramatically change

Why weren't COY / CNTY ELECTED OFFICIALS THERE? DO WE REPRESENT OURSELVES?

Optional
Name: Bob Johnson Address: 1439 S. 35TH AVE YUMA AZ 85364
Phone: 9283439364(H) Fax: 9282108113(C) Email: bob.johnsonjr@roadrunner.com

Completed comment forms can be submitted to the project team at the completion of the public meeting or sent to the ADOT Outreach Team by **October 9, 2012**. Please send comments to Kevin Kugler c/o RBF Consulting, 16605 N. 28th Avenue, Suite 100, Phoenix, AZ 85053; Fax: 602.467.2204; or Email: kkugler@rbf.com.

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12-419



YOUR FAX DOESNT WORK

FOR MORE INFORMATION:
azdot.gov/yumaexpressway

Klyszeiko, Matthew

To: Gabriella Kemp
Subject: RE: My suggestion is to put in an UNDERGROUND SUBWAY SYSTEM (Like in NY)

From: Ezw1a@aol.com [<mailto:Ezw1a@aol.com>]
Sent: Tuesday, September 25, 2012 11:27 PM
To: Gabriella Kemp
Subject: My suggestion is to put in an UNDERGROUND SUBWAY SYSTEM (Like in NY)

Yep, let's do it right for our WINTER VISITORS and Our SOUTHERN VISITORS from MEXICO!!!!
A bypass road system in YUMA makes about as much sense as Putting OBAMA back in office in the upcoming election.
Oh, By The Way !! Where is the MONEY COMING FROM TO BUILD THIS Super Highway System with the ECONOMY
in the shape it's in ??????

Confidentiality and Nondisclosure Notice: This email transmission and any attachments are intended for use by the person(s)/entity(ies) named above and may contain confidential/privileged information. Any unauthorized use, disclosure or distribution is strictly prohibited. If you are not the intended recipient, please contact the sender by email, and delete or destroy all copies plus attachments.

Yuma Expressway Study

COMMENT FORM

Please provide us any comments regarding the study or your input about a potential new corridor alignment that would link southwest Yuma to Interstate 8.

COMMENTS: I don't believe Yuma needs another expressway,their is no
reason to take away farm,go without food to have an expressway that
will not be used that much.Look at 195 a total waste,it is not used
that much,and goes no where.A shorter route from San Luis to I 8
is not that much saving.I don't believ the way the country is going
their will be that much growth to Yuma to warrant an expressway.
Their is a lot of money spent on things that are not worth the
time and money spent on them.That is one reason the Country is in
such a crisis were in.Everybody is looking for Federal Funded
projects which is the wrong way to go,Gov't is in charge not the
people.Everybody is conditioned to the wrong way of doing thing
this is one thing wrong with our Country.Wake up America

Optional

Name:	<u>Omar Campbell</u>	Address:	<u>Cinthya 4643</u>	City:	<u>Somerton</u>	State:	<u>Arizona</u>	ZIP:	<u>85350</u>
Phone:	<u>928-210-3651</u>	Fax:		Email:					

Completed comment forms can be submitted to the project team at the completion of the public meeting or sent to the ADOT Outreach Team by **October 9, 2012**. Please send comments to Kevin Kugler c/o RBF Consulting, 16605 N. 28th Avenue, Suite 100\n, Phoenix, AZ 85053; Fax: 602.467.2204; or Email: kkugler@rbf.com.

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12-419



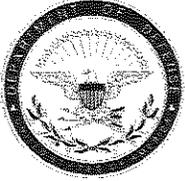
FOR MORE INFORMATION:
azdot.gov/yumaexpressway

Title VI

Title VI of the 1964 Civil Rights Act regulations provides that “no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance.” Related federal statutes and regulations requires ADOT’s Title VI/Nondiscrimination Program to include nondiscrimination protection on the basis of age, sex, disability and income status in all ADOT programs or activities.

A display board, brochures and survey cards were displayed and made available at the meeting regarding Title VI. Two (2) survey cards were received at this meeting and provided to ADOT’s Civil Rights Office. In addition, Title VI language was included in the newspaper advertisement(s) and project flier inviting the public to attend the meeting.

Appendix E – Marine Corps Air Station Comment Letter



UNITED STATES MARINE CORPS

MARINE CORPS AIR STATION
BOX 99100
YUMA, ARIZONA 85369-9100

5726
CP&L/Expressway
October 5, 2012

Mr. Kevin Kugler
c/o RBF Consulting
16605 N. 28th Avenue
Suite 100/n
Phoenix, AZ 85053

Dear Mr. Kugler:

The Marine Corps Air Station (MCAS) participated with the City of Yuma, Arizona Department of Transportation, Parsons Brinckerhoff, and other community transportation planners in a preliminary assessment and analysis of the feasibility of a proposed corridor alignment along the southwestern portions of the City of Yuma- The Yuma Expressway Study. The study was to evaluate the need for a roadway infrastructure and identify a corridor that would link southwest Yuma to Interstate-8. The study area included a two mile corridor centered on County 14th Street and Avenue D with project limits to the north (Interstate-8) and east (State Route (SR)-195).

MCAS is concerned about encroachment upon military operations conducted within our installation and within the Barry M. Goldwater Range (BMGR). The Area Service Highway (ASH) was routed through the BMGR to prevent encroachment. Bringing an expressway into an area creates opportunities for development. The impact to MCAS is increased numbers of people within aviation safety areas, height considerations, frequency interference, noise concerns, and military traffic congestion. Any development along County 14th and Avenue A would be limited due to airfield safety surfaces, such as height considerations. Road development along County 14th from Avenue A to Avenue 3E is limited to the 100 feet right of way that has been dedicated. No additional right of way is available to the north of County 14th Street.

Upon reviewing the existing and future conditions maps within the Expressway Study, the growth areas within the expressway corridor are mostly to the north of 32nd Street between Avenue C and D. An expressway within the whole study area is not practical. Commercial traffic from San Luis is supposed to be alleviated by the development of the Area Service Highway (ASH). Highway 95 is capable of handling traffic from San Luis to Somerton. Traffic within Somerton causes a concern due to the speed limits and Somerton is not connected to the Yuma Expressway study area.

For the above reasons, the development of a route within the expressway corridor study at this time may not be warranted. If you have any questions pertaining to this matter, please contact Paula Backs at the Community Planning and Liaison Office, (928) 269-2103. Thank you for the opportunity to comment.

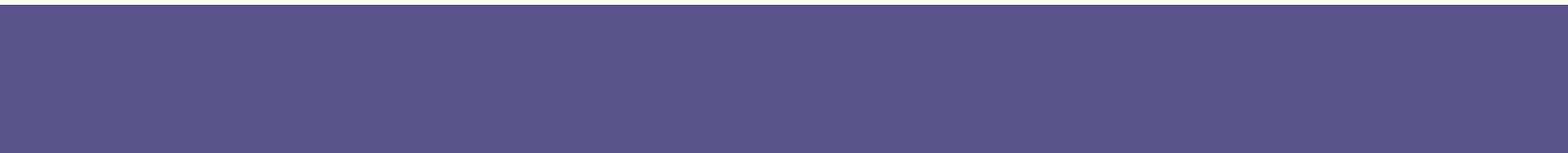
Sincerely,

A handwritten signature in black ink, appearing to read "Robert D. Misemer".

Robert D. Misemer
Community Liaison Officer
By direction of the
Commanding Officer



95





95

Appendix H - Public Open House #2 Meeting Summary



95

Public Open House #2 Meeting Summary

Meeting Date/Time: Thursday, January 17, 2013 (5:30 pm - 7:30 pm)

Meeting Location: City of Yuma Public Works Building Training Room
155 West 14th Street
Yuma, AZ 85364

Meeting Participants: 18 community members attended

Team Members: Mark Hoffman, ADOT
Paki Rico, ADOT
Dustin Krugel, ADOT
Russell Reichelt, City of Yuma
Paul Brooberg City of Yuma
Doug LaMont, Parsons Brinckerhoff
Greg Fly, Parsons Brinckerhoff
Kevin Kugler, RBF Consulting

Project Overview

The Arizona Department of Transportation (ADOT), in conjunction with the City of Yuma and its Transportation Consultant – Parsons Brinckerhoff and Public Involvement Consultant – RBF Consulting, is conducting the Yuma Expressway Corridor Study to evaluate the need and location for a proposed roadway corridor within the south and western portions of the City of Yuma.

Public Open House #2 Purpose

As part of the overall corridor study process, the Study Team developed a comprehensive and interactive Public Involvement Plan to inform and include the public in the transportation planning process.

The Public Involvement Plan focused on meetings with stakeholders and the public scheduled at key technical milestones in the study process. The goal of this approach is to ensure that input and feedback provided by citizens and stakeholders will be effectively integrated and considered in the development of the final study and in the conception of project recommendations.

This initial Public Involvement Report outlines the public involvement effort that was performed as part of Public Meeting/Open House #2. The purpose of the second Public Open House was to provide interested residents and other project stakeholders with a brief overview

of the project background information presented at the first open house and then focus upon the corridor alternatives considered for public input. These alternatives consisted of a combination of five (5) roadway types within three preliminary corridors that together yielded a combination of 13 potential alternatives for public consideration and comment.

Public Meeting Notification

The Study Team considered several methods to notify the public of the first Public Open House meeting. Given the large population of the study area and the regional nature of the proposed Yuma Expressway project, it was determined that a combination of press releases, public advertisements and posting of project fact sheets would be the most effective method to promote and encourage the greatest level of public participation.

The news release and project fact sheets were distributed via GovDelivery to generate local media interest in attending the meetings as well as to inform local municipal staff and public officials. Moreover, ADOT Communications sent a news release to all government officials in the City of Yuma, Yuma County and WACOG as well as ADOT Yuma District media and stakeholders on the ADOT distribution list. To notify Yuma area residents, an advertisement was published in the January 8th edition of the Yuma Sun newspaper that provided a brief project description and information on the Open House meeting. On January 8th, a tandem advertisement was also placed on the homepage of the Yuma Sun website. Meeting notification materials including Project Fact Sheet, Project Invitation and newspaper advertisement are included in Appendix A.



Mark Hoffman Welcoming Meeting Attendees



Greg Fly Presenting Alternatives

Public Meeting Overview

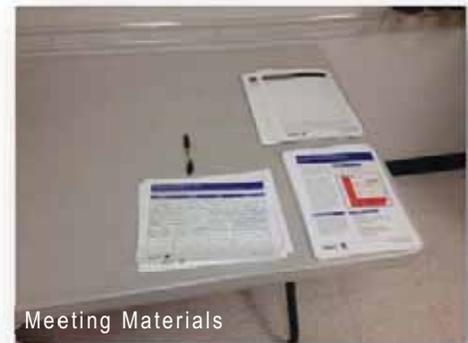
As part of the Yuma Expressway Study, a public Open House meeting was held on Thursday, January 17, 2013 at the City of Yuma Public Works Building Training Room located at 155 West 14th Street, Yuma, AZ to present and gather feedback on the alternatives considered for the Yuma Expressway Corridor.



Title VI Population Information on Display

In total, an estimated 18 people attended the Open House meeting, with 13 people signing in. This included attendance by print media. Meeting sign-in-sheets are included in Appendix B.

The formal presentation began promptly at 5:45 pm with Mark Hoffman, ADOT Project Manager, welcoming the group and thanking all for attending. Mr. Hoffman then introduced the project team and gave a brief description of the overall project. Following introductions, Mr. Hoffman encouraged attendees to sign-in as well as help themselves to project information material, comment cards and surveys that were located at the entrance to the meeting. He also explained that all the project information that was being presented tonight is also available online at www.azdot.gov/yumaexpressway. After completing his opening remarks, Mr. Hoffman then introduced Doug LaMont, Project Manager with Parsons Brinckerhoff, to begin the formal PowerPoint presentation.



Mr. LaMont began the formal presentation by recognizing and thanking the 13 agencies on the project Technical Advisory Committee (TAC) who have assisted in guiding the consultants' efforts throughout the study process. He noted that the TAC has provided the principal guidance for this project and that their involvement has been comprehensive and transparent.

Mr. LaMont then provided a brief project background and history for those attendees who were unable to attend the first open house in September. This included a brief review of past transportation planning efforts – the I-8 and US 95 Corridor Study in 1988 that recommended the Yuma Expressway corridor in close proximity to existing Avenue D and County 14th Street alignments. Mr. LaMont explained that the Yuma Expressway alignment then carried over into the 1990-2010 Countywide Transportation Master Plan and the City of Yuma General Plan. The City of Yuma Capital Improvement Plan (CIP) FY 2012 identified the planning phase of the Yuma Expressway as a priority III project. Mr. LaMont then reminded the attendees of the project study area and noted that this project began in 2012.

After providing attendees with a historical background of the Yuma Expressway, Mr. LaMont then discussed the fact that this study evaluated current and future traffic and land use trends in the study area. Utilizing Yuma Metropolitan Planning Organization (YMPO) data, it appears that improvements would not be warranted to the Yuma Expressway facility until there are approximately 370,000 residents in Yuma County. There are approximately 200,000 residents in Yuma County today. According to YMPO projections, a population of 370,000 will likely not be realized until the year 2033. Mr. LaMont underscored the fact that while this population threshold is nearly double the existing population, it is important to conduct long range planning now. Studies like this are needed in order to evaluate the acquisition of the necessary rights-of-way prior to the approval of adjacent land use decisions that could make the

acquisition of the right-of-way much more costly to taxpayers. He noted that the actual construction of any Expressway-like facility was many years, perhaps decades off into the future.

Mr. LaMont then turned the presentation over to Greg Fly, Deputy Project Manager with Parsons Brinckerhoff, to discuss the alternatives considered for this project.

Mr. Fly explained to the meeting attendees that there were five (5) different roadway types (including the no build option) that were considered by the project team. These five roadway types are:

- Existing Rural Two Lane Road (no build)
- Rural Freeway
- Expressway
- Principal Arterial
- Minor Arterial



Doug LaMont Speaking with Local Media

Mr. Fly then explained what a typical roadway cross-section would consist of for each roadway type. He discussed access and right-of-way characteristics for each roadway type. Each roadway cross-section was illustrated in the PowerPoint presentation. Please see Appendix C for the PowerPoint presentation for a view of the five roadway cross-sections.

Mr. Fly then identified and explained three different roadway corridors that were evaluated and applied to each roadway type. Corridor #1 represents the current Avenue D and County 14th alignments. Corridor #2 is shifted north of and east of the existing County 14th and Avenue D alignments. Corridor #2 attempted to account for access requirements for high density residential land uses planned in the area as well as future expansion plans of the MCAS. Corridor #3 consists of a hybrid between Corridor #1 and Corridor #2 in that it attempts to avoid existing residential land uses along Avenue D and 8th Street and zig-zags to avoid the Goldwater Range. Please see Appendix C for the PowerPoint presentation for a view of the three corridor alignments.

Mr. Fly explained that the combination of five roadway types and three corridors created a combination of 13 possible roadway types for further consideration and evaluation. Mr. Fly noted that a preliminary evaluation was performed for each of the 13 combinations with the objective of reducing those down to four (4) alternatives that would be reviewed in greater detail. The preliminary evaluation criteria used includes:

- Impacts to future traffic capacity
- Impacts to existing residences
- Impacts to existing agriculture
- Impacts to MCAS-Yuma Airport

- Access/frontage roads/duplication of facility type
- Environmental impacts

Mr. Fly said that after the preliminary analysis, Alternative's 1C, 1D, 3A, 3B and the No Build alternative carried forward into the secondary evaluation. These alternatives are described as follows:

- No Build – leave existing facility in place.
- 1C – Principal arterial built on existing Avenue D and County 14th Street alignment.
- 1D – Minor arterial built on existing Avenue D and County 14th Street alignment.
- 3A - Rural freeway constructed on corridor #3.
- 3B – Expressway constructed on corridor #3.

Mr. Fly then described the secondary evaluation criteria used. These are:

- Benefits to safety
- Cost
- Consistency with City of Yuma approved plans
- Implementation
- Right-of-way impacts
- Benefits to cross region travel times
- Colorado River constraints

Mr. Fly said that Alternative 3B had the best score for future concerns. Alternative 3B scored the highest primarily because it has the lowest impact to existing development, including the MCAS and Yuma Airport, it provides additional capacity to the existing roadway network and Avenue D and County 14th Street remain in place.

Mr. Fly then transitioned to discuss potential alternatives considered for connection to I-8. Three alternative alignments were evaluated in conjunction with two potential alignments – the Algodones Connection and the Winterhaven Connection. Please see Appendix C for the PowerPoint presentation for a view of these potential corridor alignments. Mr. Fly noted that there are many challenges to a Colorado River crossing and additional studies were necessary, but the “red” corridor identified for each connection point was the preferred alignment at this point.

Mr. Fly then concluded his presentation by explaining the next steps in the project. He noted that the public comment period was open until January 24, 2013 and encouraged attendees to submit written comments. Mr. Fly said that the final report and recommendations would be available in February 2013. Mr. LaMont added that it would be important for the City of Yuma and others to conduct periodic checks, perhaps every 5 years or so, of land use changes, population growth and conduct further analysis. He said this periodic review was needed to

ensure that the right-of-way necessary for the future facility can be obtained early in the process and thus reduce the cost to the taxpayers.

Following the presentation, Paki Rico joined Mr. LaMont and Mr. Fly for the Question and Comment period. Subsequent to the question and comment period, the meeting then moved to an open house format. Project staff made themselves available at project boards for one-on-one conversations. The formal meeting presentation and display boards are included in Appendix D.

Questions Posed During the PowerPoint Presentation and Open Discussion

The following is a summary of questions and responses provided by the project team during the conclusion of the PowerPoint presentation.

Q: 32nd Street to the north has a lot of residential development, some commercial...is there an opportunity to move the roadway to the west?

A: *At the September meeting, there was a lot of comment that advised the project team to place emphasis on preserving agriculture and that they did not want to see any corridor move any closer to Avenue E so they kept the corridor closer to Avenue D based on that public input.*

Q: What is the offset or width of the corridors as shown on the map?

A: *Each corridor is not meant to be precise in order to maintain flexibility for future studies. On average, each corridor width represents approximately ¼ mile wide. Future studies will evaluate in a finer grain of detail with respect to property ownership and existing constraints, etc.*

C: As a Barclay Ranch homeowner, I am concerned about the north/south portion of the corridor and access to I-8. Noise on Avenue D is a concern, but Avenue D makes sense. We need a larger road going north/south...not very many people going east/west to get out of town.

R: *The model indicates that County 14th receives traffic a lot faster than Avenue D. There is not a lot of traffic going to California. Traffic patterns will change if you build the facility. The residential land uses to the west of Avenue D does not generate enough traffic alone to warrant a larger facility. YMPO updates their model every 4 years and that should be reviewed.*

Q: There is not a lot of employment land uses to the west of Avenue D. What is the number of homes needed to trigger the need for a bigger road?

A: *The model doesn't exactly capture where the population base is per se, just the distribution of traffic. The model doesn't capture that finer detail at this level so it is*

difficult to say precisely.

Q: Why is this roadway even needed? We need access like Business 8 to encourage development. An expressway limits development due to limited access.

A: *Actually an expressway facilitates traffic flow better, it does not encourage or discourage growth and development. Access and land uses can be coordinated in a more effective manner.*

Q: Why are we even doing this study?

A: *In order to get traffic around town instead of through town as development and population increases over time. Historically, Yuma, like many other cities, widens the road after development has occurred. Acquiring right-of-way after development has occurred leads to higher acquisition costs. Front yard building setbacks can be very tight, or not allow for the widening of a roadway. Doing this plan now allows for the opportunity to plan ahead thereby allowing the city/county to work with property owners earlier in the development process to accommodate roadway footprints before development and not after development has occurred. This model will provide for the acquisition of rights-o-way at a lesser cost (than post development) and therefore reduce the use of taxpayers' dollars for future roadway projects.*

C: I live south of 32nd Street and east of Avenue 5E. The MCAS generates a lot of traffic, especially in morning and afternoon peak periods. I feel like a north/south interchange is being discredited. Avenue B is the #1 traffic congestion problem in the city. The information tonight is great but traffic from the valley driving on Avenue B and 4th is the problem. The model is not reflecting reality – north/south movements are the problem and there are too few north/south routes. County 14th could be worked on later.

R: *Your comments are good and we certainly appreciate them. No model is absolutely precise. Your comments are good for the YMPO to hear and they happen to be having a public meeting next week as they review and update their model. We encourage you to make your comments heard at that meeting.*

C: County 16th and Avenue B have the highest accident rates in town.

R: *Yes. There is a Design Concept Report (DCR) study in Somerton currently ongoing that will examine and potentially recommend another north/south corridor from the Somerton area towards Yuma.*

C: You mentioned that in the information you have gathered that there was not a lot of traffic taking Avenue D north/south.

- R: *The models are showing a Level of Service (LOS) A on 4th and 8th. A LOS of “A” is the best “score”, meaning least congested roadway. But 16th and Avenue B have an LOS of “D”.*
- C: But there is a lot of traffic from San Luis and Mexicali that generate lots of traffic from the south. There has been talk for a long time about a connection from Somerton Avenue to I-8 but that is likely just a dream, but we need another north/south roadway.
- R: *Understand your comment, it is well taken. It is important to be aware that if there is an intention to use federal dollars to construct a new roadway facility, an insufficient LOS will have to be demonstrated in order to justify the need for a new roadway and the use of federal dollars to construct that facility.*
- C: This is not helping Somerton, San Luis and border traffic if we make east/west roadway improvements. We need another north/south road like was previously mentioned.
- R: *Again, we understand your concern and your point is well taken. The YMPO model is not showing a demand for a north/south facility. As mentioned previously, perhaps it would be worthwhile to provide this comment at the upcoming YMPO open house that is scheduled for next week.*
- Q: If we build an expressway, will we still be able to preserve agricultural land uses in the area?
- A: *Yes, an expressway can be compatible with agricultural land uses. Of course a small amount of agriculture land would be necessary to allow for the actual roadway improvements.*
- C: Yes. We don't want to do anything to risk losing our cooling sheds. Yuma is the 7th largest agricultural producer in the country.
- R: *An expressway will not replace the business of agriculture. That issue is also influenced by the market and local land use decisions. If agriculture remains profitable, it is fair to assume that the agricultural land uses would continue forward. The roadway type will have little influence on this land use issue.*
- C: We should build a smaller footprint roadway, accomplish a balance between the two – 32nd Street does a good job.
- R: *Yes, agreed. There will be many steps along the way. This study is a very preliminary evaluation of the corridor to establish its potential need at some point in the future. It is a balancing act. Future studies would consider a closer examination of the challenges/obstacles to constructing a roadway. The specific corridor would be*

- evaluated on a property-by-property basis to identify physical constraints and design challenges.*
- Q: Does the study take into account the influx of winter visitors and the increased congestion during the winter months? Winter visitors tend to avoid 32nd Street.
- A: *The YMPO conducts their traffic counts twice per year, once in February and again in June. The YMPO performs a mathematical computation in the model to provide for a blended average to account for the seasonal fluctuation.*
- C: When a roadway limits access, it also limits the development potential of that area. Agriculture land uses are then indirectly promoted.
- R: *While access may be limited, it does not limit growth and development – in fact it can promote it if that is the local land use decision. While access may be more limited, signals are separated by a mile by example, development can actually be encouraged because of the higher capacity of the roadway to accommodate traffic trips.*
- C: I can think of an example in 2007 in Madison, Wisconsin where they were growing and they needed a highway, but there were some wetlands in the way. There are regulations used by local governments that can help preserve the right-of-way in advance of development, so development knows there is a roadway planned. Zoning stipulations and other land use controls can help retain the right-of-way and studies like this help identify the need for the road which makes it easier for local government agencies to acquire the right-of-way when there is an identified need. The access control issue can also be handled by local government agencies that can limit access, restrict land uses and otherwise control growth. This roadway can either function like 32nd Street with fairly unlimited access or could be like the Area Service Highway. The property owner ultimately will make a decision on whether to keep his property agriculture or sell to others.
- Q: How is land needed for the road acquired?
- R: *The City of Yuma typically acquires the property in one of two ways. First, if there is a development proposal where the property owner is seeking zoning or other approvals from the city, the city would require a half-street dedication of right-of-way for that particular road. The second option is for the city to purchase the needed property. This is typically done through negotiations with the property owner, using appraisals to determine the value or can be condemned through the use of eminent domain if absolutely necessary.*

Written Comments were collected and are located in Appendix E.

The formal presentation adjourned at approximately 7:10 pm. Individual and small group discussions between meeting attendees and members of the project team continued until approximately 7:25 pm.

APPENDIX A

YOUR INPUT IS NEEDED

Yuma Expressway Corridor Study | Thursday, Jan. 17

STUDY BACKGROUND

The Arizona Department of Transportation and the city of Yuma are working together on the Yuma Expressway Corridor Study. The purpose of the study is to assess the feasibility and alignment of a proposed high-capacity roadway corridor along the general alignment of County 14th and Avenue D.

At the first public meeting in September 2012, the study team presented current and future conditions. They also established that the need for a new roadway corridor is decades away. In the past few months, the project team has been working on how to address long-term transportation planning needs and how to define potential corridor alternatives based on technical data and input received from the public and stakeholders.

-
- ▶ Contact: Mark R. Hoffman, ADOT Project Manager
 - ▶ Email: MHoffman@azdot.gov
 - ▶ Phone: 602.712.7454
 - ▶ Web: azdot.gov/yumaexpressway

MEETING INFORMATION

You are invited to attend the second public meeting for the Yuma Expressway Corridor Study where you can receive a study update, view the conceptual corridor alternatives and ask questions or provide comments.

Date: Thursday, Jan. 17, 2013

Time: 5:30 to 7:30 p.m.

Location: City of Yuma
Public Works Building
Training Room
155 West 14th Street
Yuma, AZ 85364

A presentation will be given at 5:45 p.m. The study team will also be available before and after the presentation to answer any questions.

Pursuant to Title VI of the Civil Rights Act of 1964 and the Americans with Disabilities Act (ADA), ADOT does not discriminate on the basis of race, color, national origin, age, gender or disability. People who require a reasonable accommodation based on language or disability should contact Grisel Sato, ADOT Senior Community Relations Project Manager, at 602.712.4676 or GSato@azdot.gov. Requests should be made as early as possible to ensure the state has an opportunity to address the accommodation.



WE NEED YOUR INPUT!

YUMA EXPRESSWAY CORRIDOR STUDY

Thursday, Jan. 17, 2013

5:30 - 7:30 p.m.

City of Yuma

Public Works Building—Training Room

155 West 14th Street

Yuma, AZ 85364

A presentation will be given at 5:45 p.m.

The study team will also be available before and after the presentation to answer any questions.

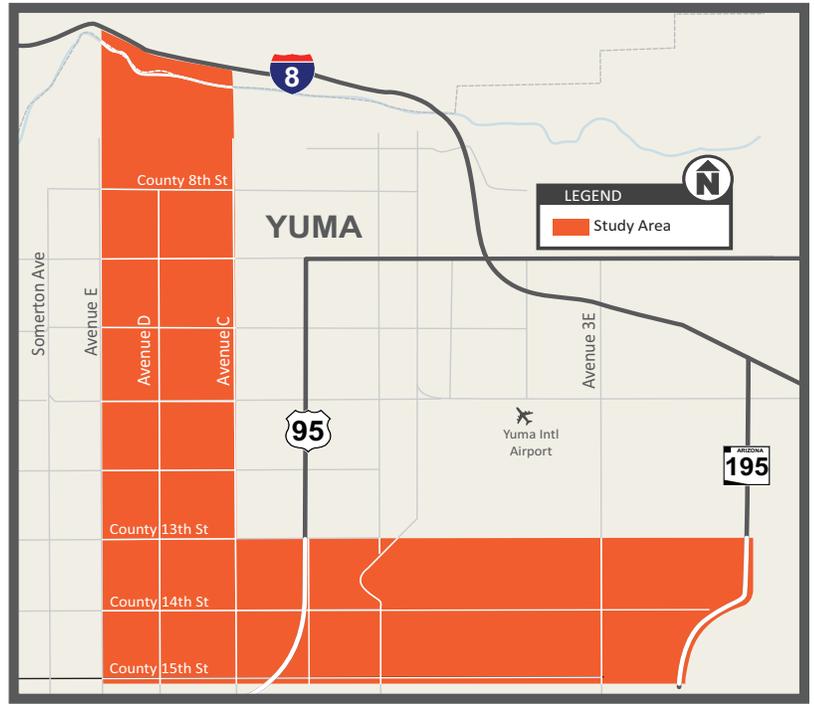
STUDY DESCRIPTION

The Arizona Department of Transportation and the city of Yuma are working together on the Yuma Expressway Corridor Study. The purpose of the study is to assess the feasibility and alignment of a proposed high-capacity roadway corridor along the general alignment of County 14th and Avenue D.

At the first public meeting in September 2012, the study team presented current and future conditions. They also established that the need for a new roadway corridor is decades away. In the past few months, the project team has been working on how to address long-term transportation planning needs and how to define potential corridor alternatives based on technical data and input received from the public and stakeholders.

WHAT TO EXPECT AT THE MEETING

You are invited to attend the second public meeting for the Yuma Expressway Corridor Study where you can receive a study update, view the conceptual corridor alternatives and ask questions or provide comments.



STAY INFORMED

- ▶ Mark R. Hoffman
Project Manager
Arizona Department of Transportation
206 S. 17th Avenue, MD 310B Phoenix, AZ 85007
Phone: 602.712.7454
Email: MHoffman@azdot.gov

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Open House to view concepts for the future potential Yuma Expressway Jan. 17

YUMA – The Arizona Department of Transportation, in coordination with the city of Yuma, has been working to assess the feasibility and alignment of a proposed high capacity roadway corridor along the general alignment of County 14th Street and Avenue D.

At the first public meeting in September 2012, the study team presented current and future conditions. They also established that the need for a new roadway corridor is decades away. In the past few months, the project team has been working on how to address long-term transportation planning needs and define potential corridor alternatives based on technical data and input received from the public and stakeholders.

The public is invited to attend the upcoming meeting to receive a study update, view the conceptual corridor alternatives, and ask questions or provide comments.

Date: Thursday, January 17

Time: 5:30 to 7:30 p.m.

Location: City of Yuma Public Works Building—Training Room
155 West 14th Street
Yuma, AZ 85364

For more information about the study, please visit www.azdot.gov/yumaexpressway or contact Community Relations Project Manager Grisel Sato at 602.712.4676 or gsato@azdot.gov. Local media should contact the ADOT Public Information Office at news@azdot.gov or 1.800.949.8057. Visit www.facebook.com/azdot or www.azdot.gov for more information about ADOT. For more information about ADOT projects and programs across Arizona see the agency's latest blog posts at <http://adotblog.blogspot.com>.

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Yuma Expressway Study Public Open House

FACT SHEET

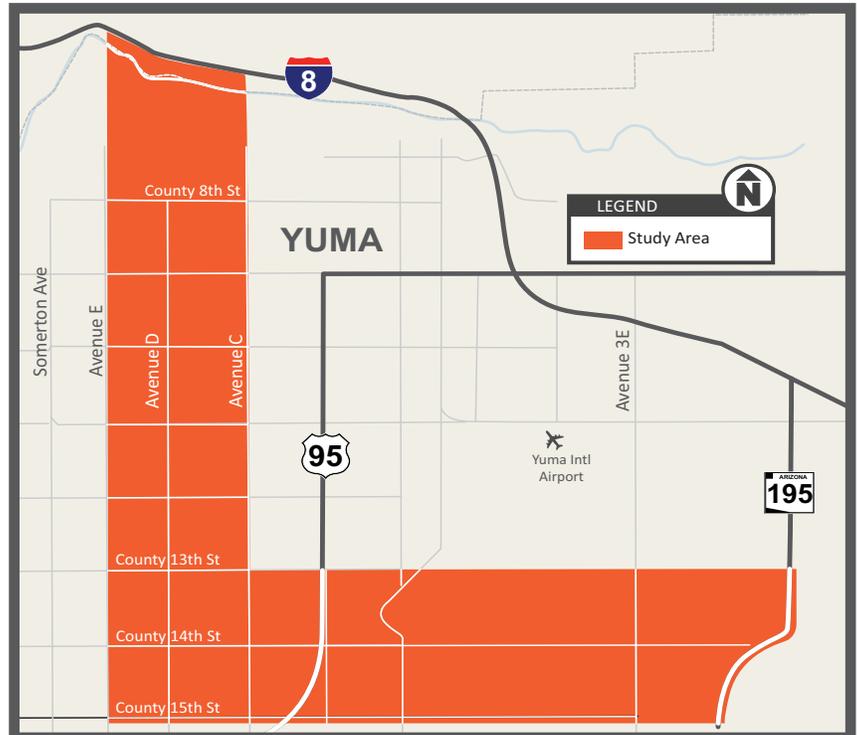
September 2012

The City of Yuma, in collaboration with the Arizona Department of Transportation, is conducting a preliminary assessment and analyzing the feasibility of a proposed corridor alignment along the southwestern portions of the City of Yuma.

The Yuma Expressway Study is intended to evaluate the need and determine a proposed location for roadway infrastructure improvements that will improve connections and traffic circulation for regional motorists. The study will identify a corridor that would potentially link southwest Yuma to Interstate 8. The proposed “Yuma Expressway” could provide substantial access for south Yuma County and cross border traffic heading west into California on Interstate 8. This project is the first step in a high-level planning evaluation that may be used as a basis for more detailed local project development in the future.

STUDY AREA

The study area includes a two mile corridor centered on County 14th Street and Avenue D with project limits at I-8 to the north and SR 195 to the east.



PUBLIC INVOLVEMENT

Public input is very important to the success of the study. Two public meetings will be held throughout the study process to gather information and suggestions from Yuma County residents. A study website has also been created to provide easy access to information:
azdot.gov/yumaexpressway.

STAY INFORMED

- ▶ Mark R. Hoffman
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Email: mhoffman@azdot.gov
- ▶ Gabriella Kemp
Senior Community Relations Officer
Arizona Department of Transportation
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Email: gkemp@azdot.gov

Yuma Expressway Public Open House

THURSDAY, JAN. 17 • 5:30 TO 7:30 P.M.

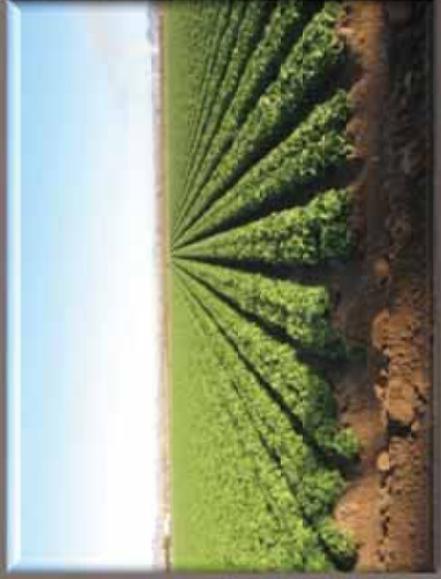
CITY OF YUMA • PUBLIC WORKS BUILDING—TRAINING ROOM • 155 WEST 14TH STREET • YUMA, AZ 85364

Completion of this sign-in sheet is completely voluntary and helps the project team keep an accurate record of meeting attendees. Under state law, any identifying information provided below will become part of the public record and, as such, must be released to any individual upon request. Please print clearly.

NAME	ADDRESS	PHONE	EMAIL
Chuck Searl	1837 W. Camino Salado	329-4362	
Eli Saldana	6651 Gile Ridge Rd	928-303-1323	esaldana@LAHESA.RV.COM
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PAULA BACKS	MCAS	928-269-2103	paulabacks@USMC.MIL
Marty Thomson	10722 S. Williams Ave	928-919-3586	MARTY.LISA_Y@Yahoo.com
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Michael Dominguez	2715 E 14th St.	928-539-7076	MDominguez@yajoba.AZ.gov
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David Nash	City Hall, 1 City Plaza		HNash
Mara Knauert	Yuma Sun		MKnauert@yumasun.com
Jacob Armstrong		619-709-4345	Jacob.armstrong@ut-cs.gov
Bruce Fenske	ADOT - Yuma	928-317-2138	BFenske@azdot.gov



APPENDIX C

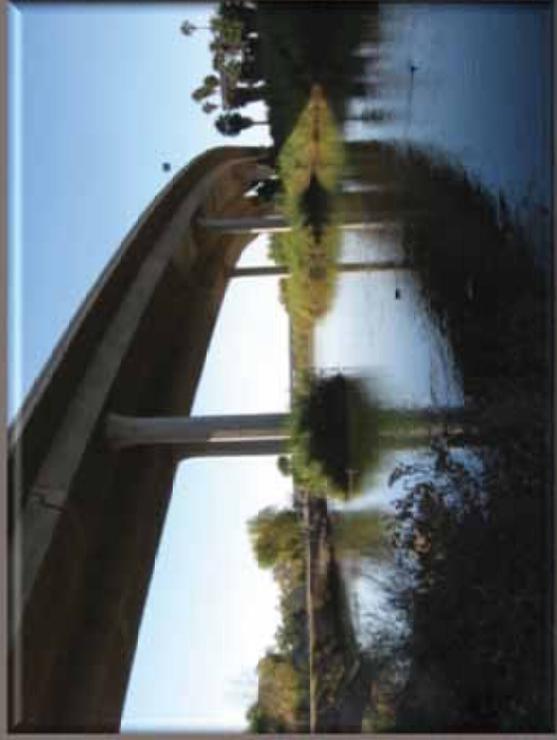


Yuma Expressway Corridor Study

Public Information Meeting
January 17, 2013

Today's Meeting

- Project Background
- Current/Future Conditions
- Alternatives Considered
- Next Steps
- Feedback: Questions/Comments



Speakers

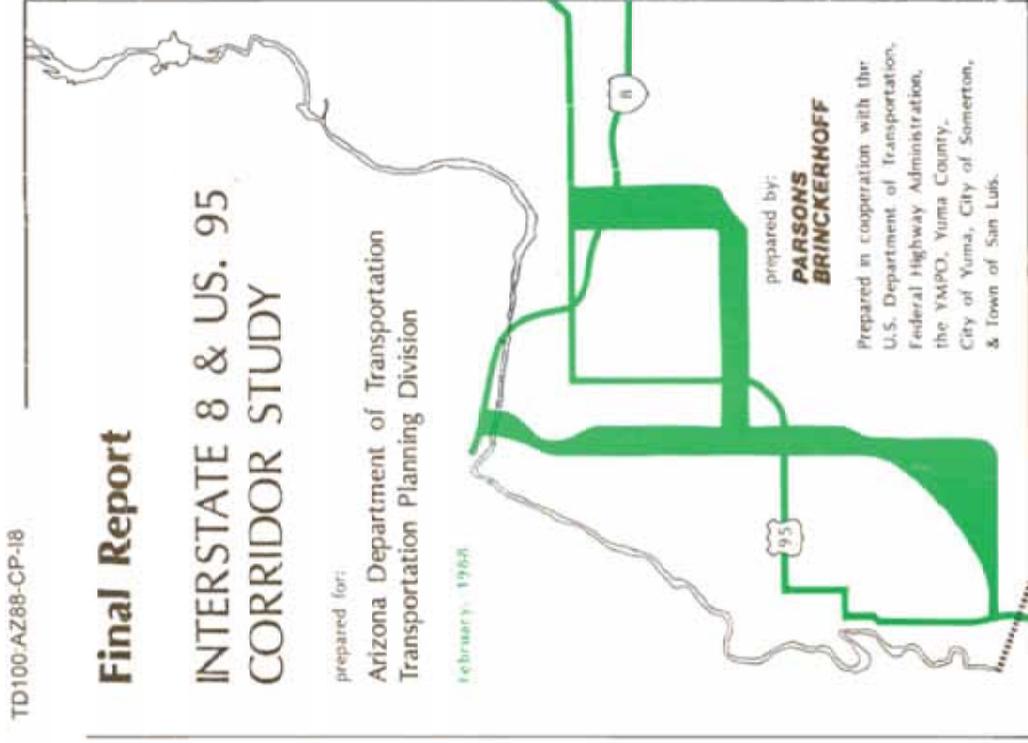
- ◉ Doug LaMont
 - Senior Engineering Manager, Parsons Brinckerhoff
 - Project Manager
- ◉ Greg Fly
 - Planner/Roadway Engineer, Parsons Brinckerhoff
 - Deputy Project Manager

Technical Advisory Committee (TAC)

- City of Yuma
- Arizona Department of Transportation (ADOT)
- Yuma County
- Yuma Metropolitan Planning Organization (YMPO)
- City of San Luis
- Cocopah Indian Tribe
- Quechan Indian Tribe
- City of Somerton
- Imperial County Transportation Commission (ICTC)
- Marine Corps Air Station (MCAS)
- Federal Highway Administration (FHWA)
- California Department of Transportation (Caltrans)
- Arizona Game and Fish Department (AZGFD)

Background

1988



● I-8 and US 95 Corridor Study

- Recommended Yuma Expressway corridor within close proximity of the existing Avenue D and County 14th Street alignment.
- Alignment carried over into 1990-2010 Countywide Transportation Plan.

Background

Current/Future
Conditions

Alternatives
Considered

Next Steps

2011

- Planning Assistance for Rural Areas (PARA)
 - City of Yuma applied for, and ADOT granted assistance



ADOT
**PLANNING
ASSISTANCE**
FOR RURAL AREAS
(PARA)

STUDIES

Background

Current/Future
Conditions

Alternatives
Considered

Next Steps

2012

- City of Yuma General Plan
 - Included Yuma Expressway along Avenue D and County 14th Street.
- City of Yuma Capital Improvement Program FY 2012 to 2021
 - Yuma Expressway (planning phase) included as Priority III project.
- March 27, 2012:

Yuma Expressway Corridor Study begins

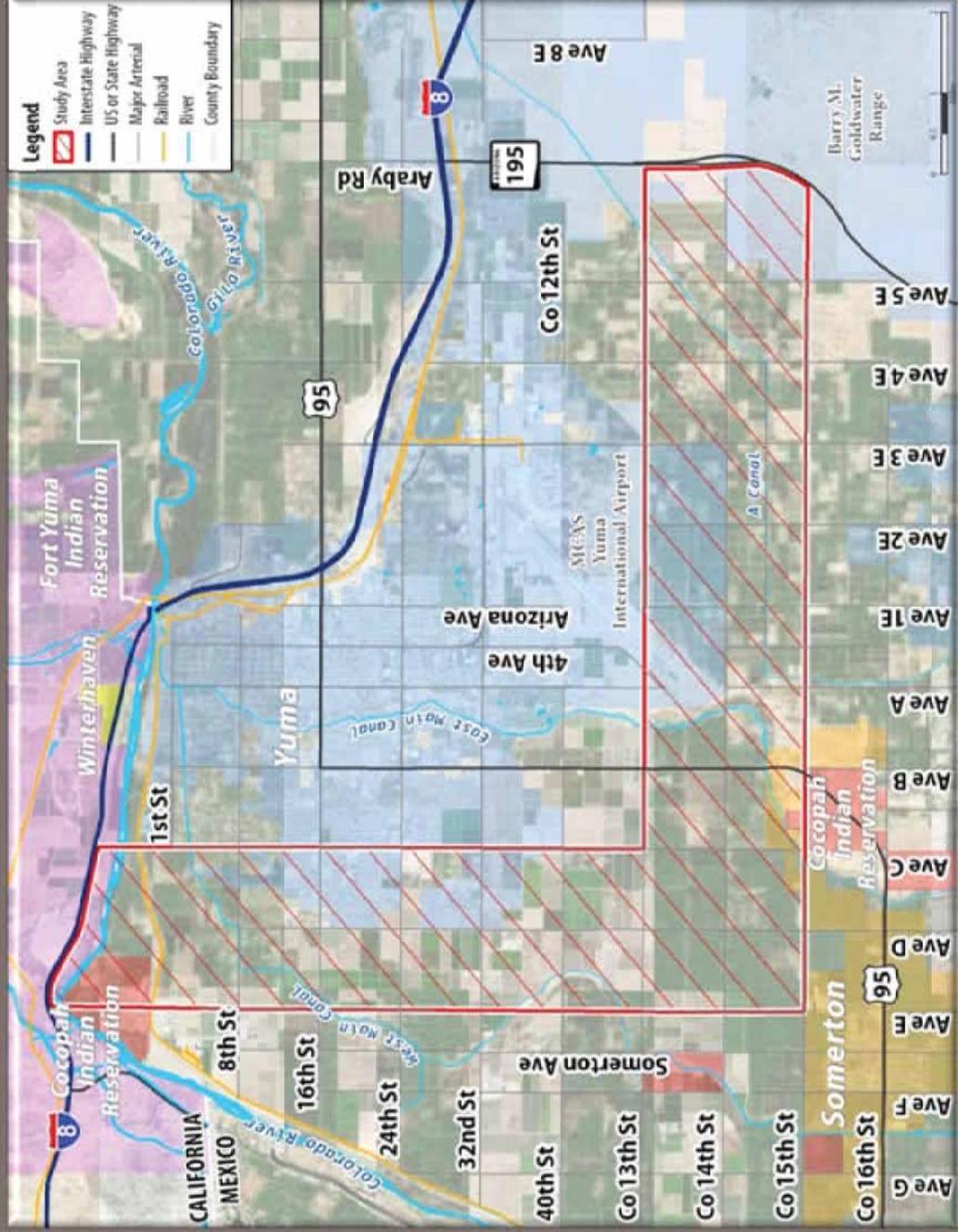
Background

Current/Future Conditions

Alternatives Considered

Next Steps

Study Area



Background

Current/Future
Conditions

Alternatives
Considered

Next Steps

Transportation Infrastructure

- Capacity improvements for existing roadways within the study area (rural, two-lane) will be required at a population threshold of approximately:

370,000 residents within Yuma County.

(current Yuma County population ~200,000)

Alternatives Considered

Background

Current/Future
Conditions

Alternatives
Considered

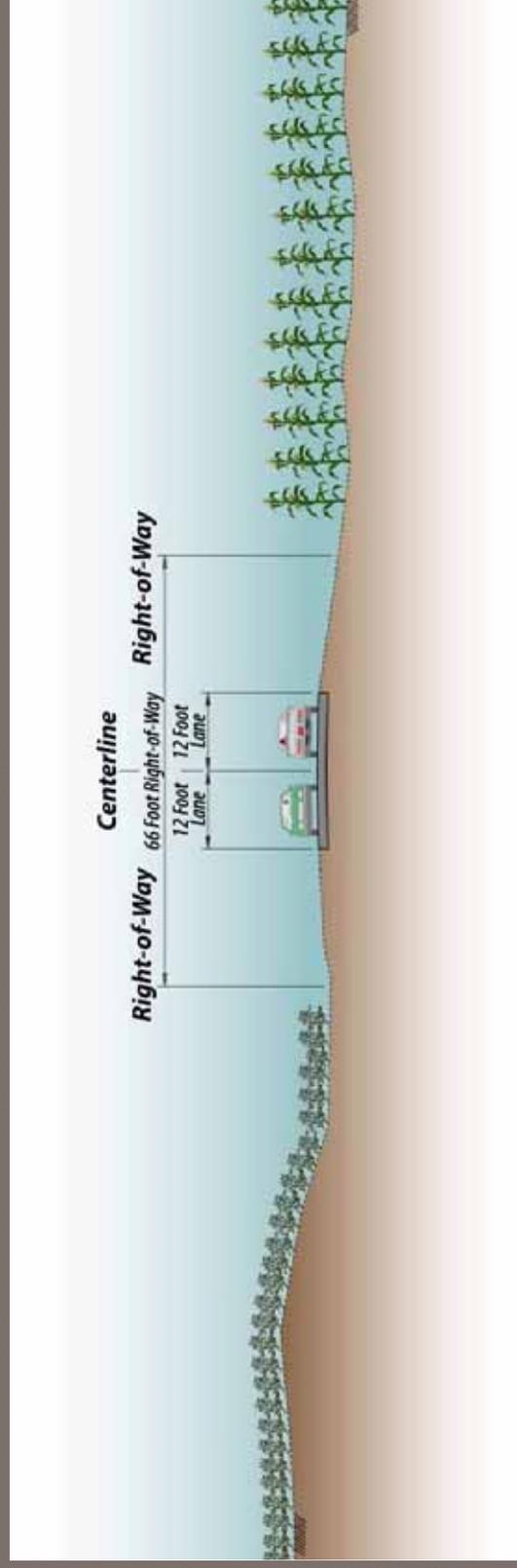
Next Steps

Roadway Types (Typical Sections)

- Existing Rural Two Lane (No Build)
- Rural Freeway
- Expressway
- Principal Arterial
- Minor Arterial

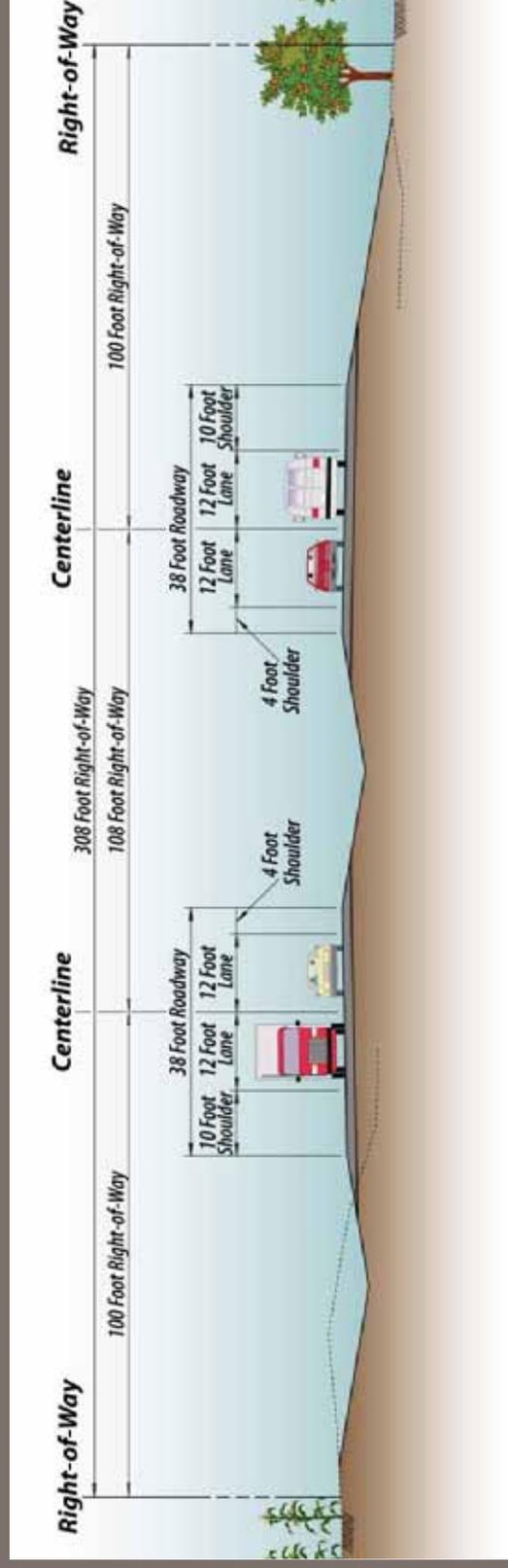
Roadway Types (Typical Sections)

- Existing Rural Two Lane (No Build)
 - One lane in each direction
 - Unpaved shoulders
 - Standard right of way width is 66 feet



Roadway Types (Typical Sections)

- Rural Freeway
 - Two lanes in each direction
 - Controlled access (grade separated)
 - Standard right of way width is 308 feet



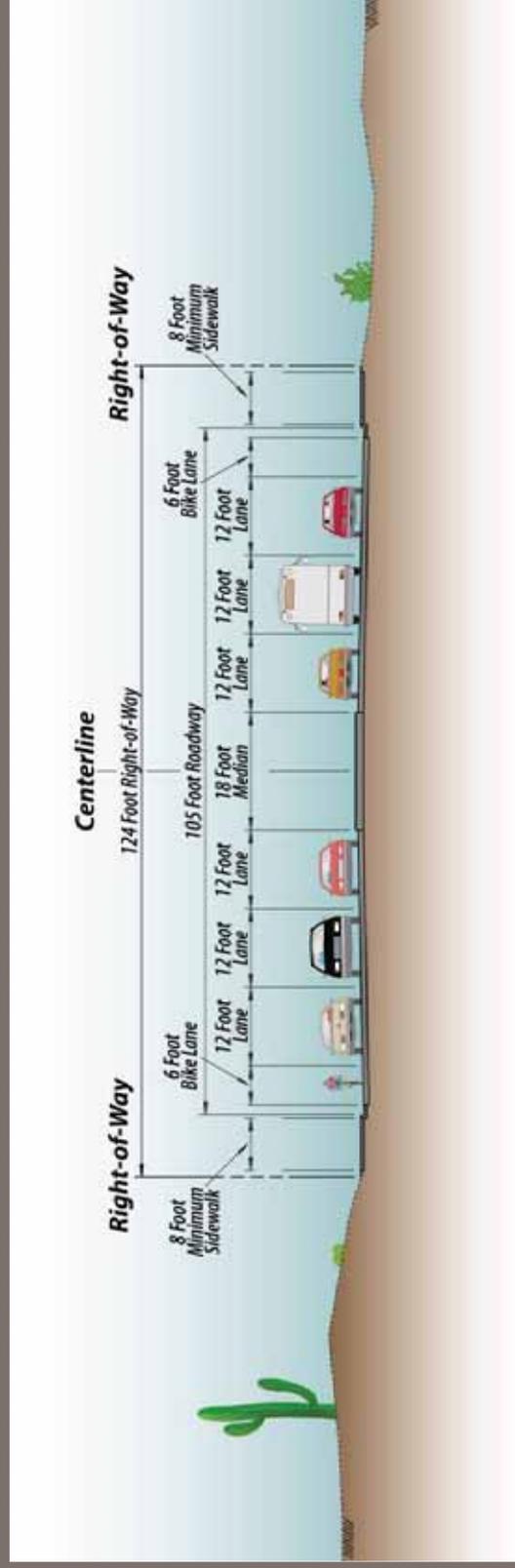
Roadway Types (Typical Sections)

- Expressway
 - Three lanes in each direction
 - Controlled access
 - Standard right of way width is 160 feet



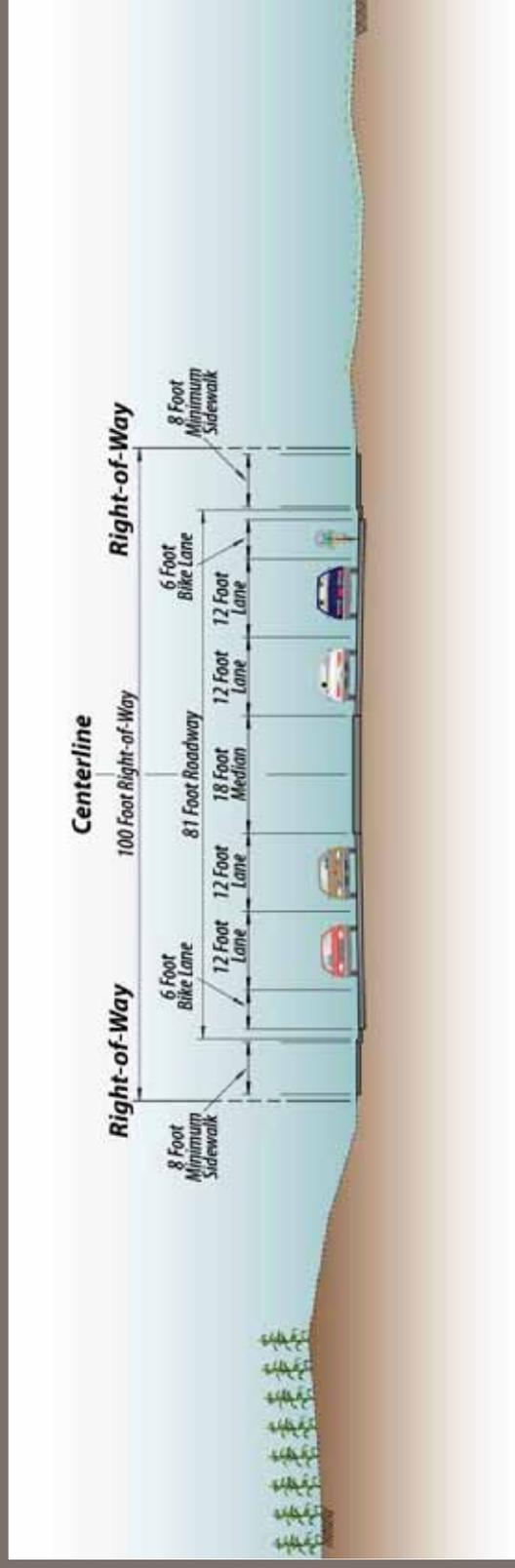
Roadway Types (Typical Sections)

- Principal Arterial
 - Three lanes in each direction
 - Limited access
 - Standard right of way width is 124 feet



Roadway Types (Typical Sections)

- Minor Arterial
 - Two lanes in each direction
 - Limited access
 - Standard right of way width is 100 feet



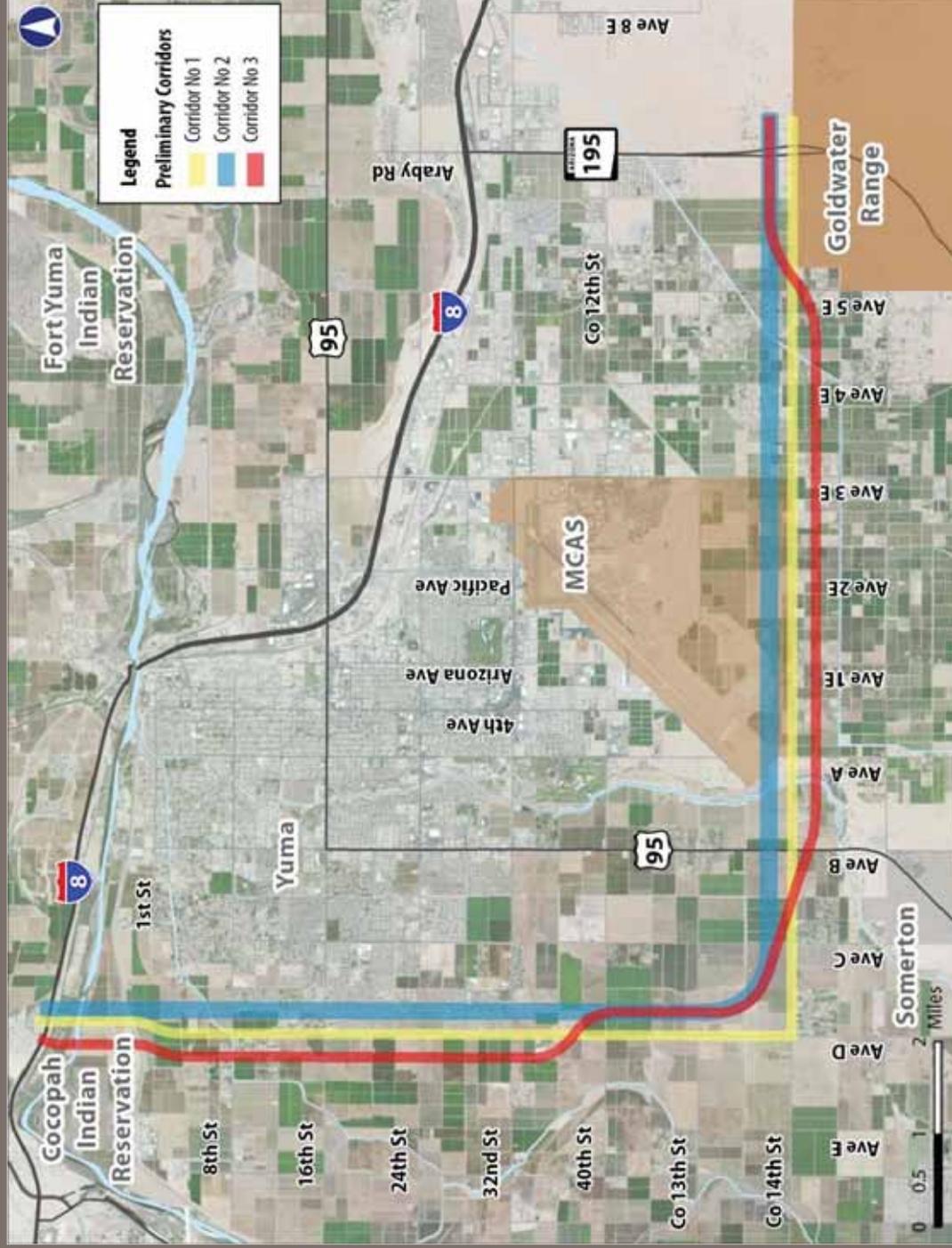
Background

Current/Future
Conditions

Alternatives
Considered

Next Steps

Preliminary Corridors



Background

Current/Future
Conditions

Alternatives
Considered

Next Steps

Proposed Alternatives

13 Combinations of Roadway Types and Corridors

	CORRIDOR NO. 1 EXISTING AVE D & CO. 14 th STREET	CORRIDOR NO. 2 1/4 MILE OFFSET EAST AND NORTH	CORRIDOR NO. 3 1/4 MILE OFFSET
RURAL TWO LANE (EXIST)	NO BUILD		
RURAL FREEWAY	1A	2A	3A
EXPRESSWAY	1B	2B	3B
PRINCIPAL ARTERIAL	1C	2C	3C
MINOR ARTERIAL	1D	2D	3D

Background

Current/Future
Conditions

Alternatives
Considered

Next Steps/
Implementation

Preliminary Evaluation Criteria

- Impacts to future traffic capacity
- Impacts to existing residences
- Impacts to existing agriculture
- Impacts to MCAS-Yuma Airport
- Access/frontage roads/duplication of facility type
- Environmental impacts

Preliminary Evaluation Criteria

- Alternatives 1C, 1D, 3A, 3B, and No Build carried into the Secondary Evaluation
 - No Build (leave existing facility in place)
 - Alternative 1C (principal arterial constructed on existing Avenue D and County 14th Street)
 - Alternative 1D (minor arterial constructed on existing Avenue D and County 14th Street)
 - Alternative 3A (rural freeway constructed on corridor 3 *RED*)
 - Alternative 3B (expressway constructed on corridor 3 *RED*)

Background

Current/Future
Conditions

Alternatives
Considered

Next Steps/
Implementation

Secondary Evaluation Criteria

- Benefits to safety
- Cost
- Consistency with COY approved plans
- Implementation
- Right of way impacts
- Benefits to cross region travel times
- Colorado River constraints

Secondary Evaluation Criteria

- Alternatives 3B had the best score for future concerns.
 - Avoids as much existing development as possible.
 - Expressway provides additional capacity to the existing roadway network, possibly relieving existing congestion within the City of Yuma.
 - Low impact to MCAS-Yuma Airport.
 - Corresponds to previously approved City of Yuma planning documents.
 - Avenue D and County 14th Street will remain.

Background

Current/Future
Conditions

Alternatives
Considered

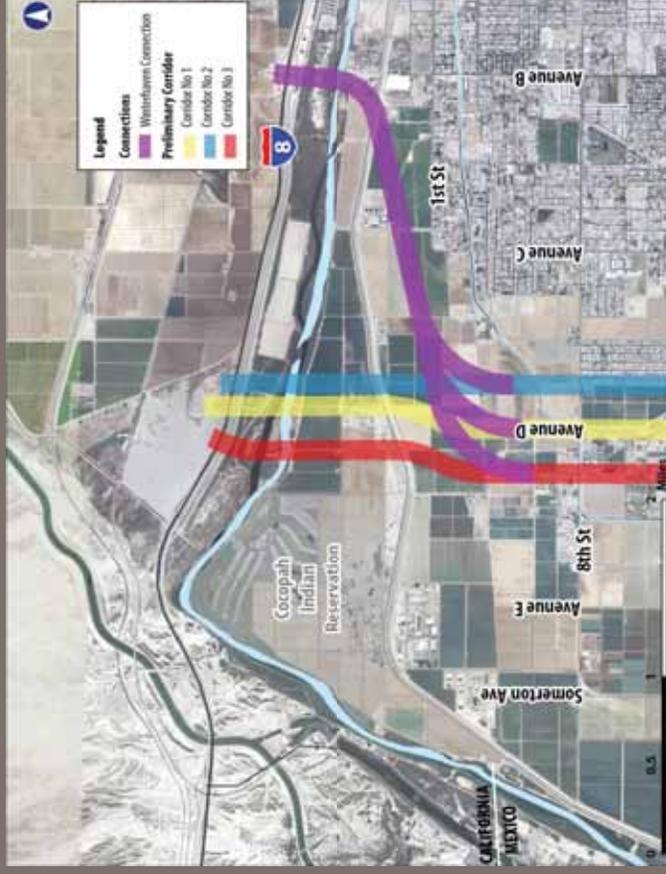
Next Steps/
Implementation

Alternative I-8 Connections

Algodones Connection



Winterhaven Connection



Next Steps

Background

Current/Future
Conditions

Alternatives
Considered

Next Steps/
Implementation

What Happens Next?

- Public Comment open until January 24, 2013.
- Final Report and recommendations in February 2013.
- Yuma Expressway will warrant further analysis as the land use and population change within the region.

Questions & Comments

Contact Us

- ◉ E-Mail:

kkugler@rbf.com

- ◉ Regular Mail:

RBF Consulting

Attn. Kevin Kugler

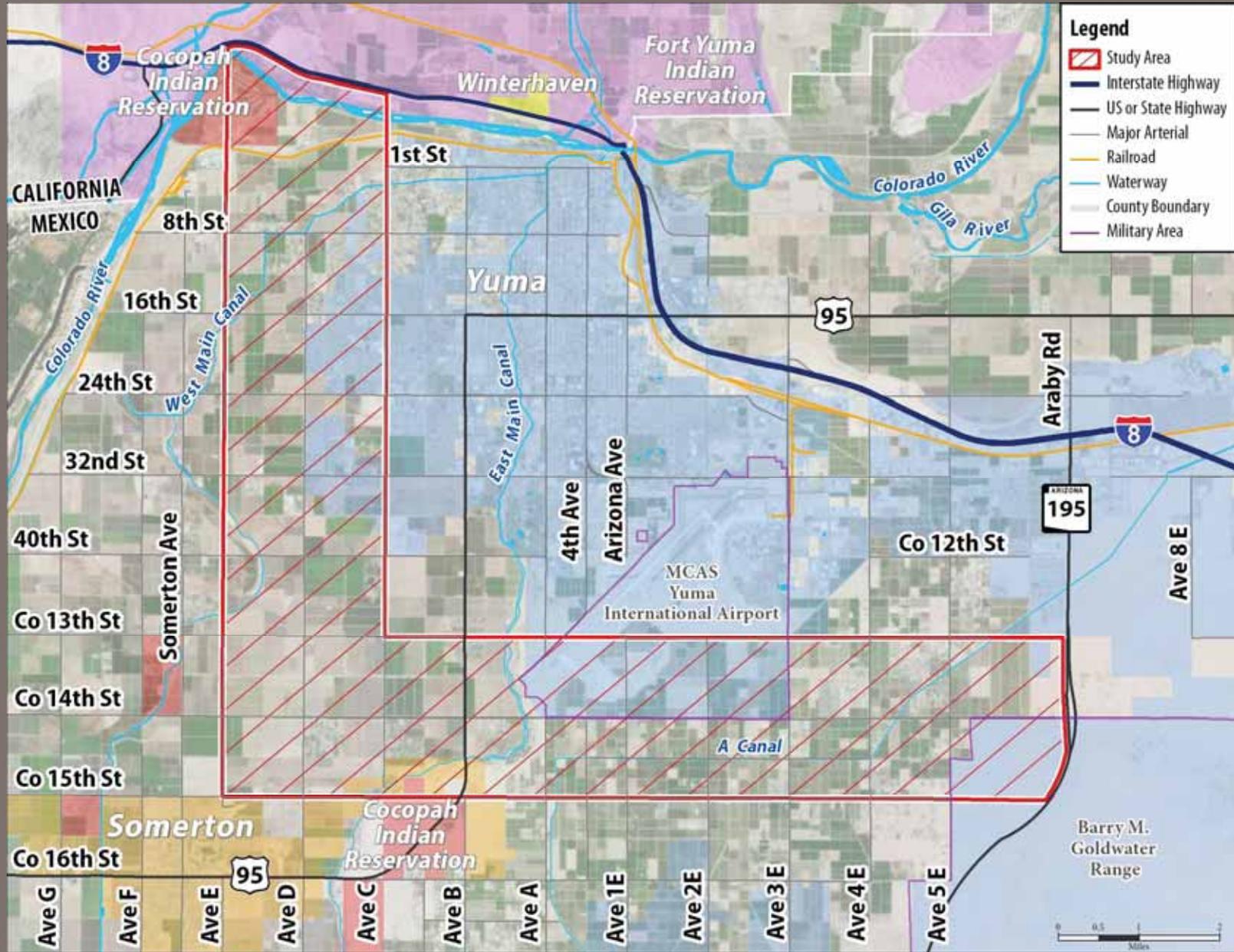
16605 N. 28th Avenue, Suite 100

Phoenix, AZ 85053

- ◉ Phone:

1-602-467-2200

APPENDIX D

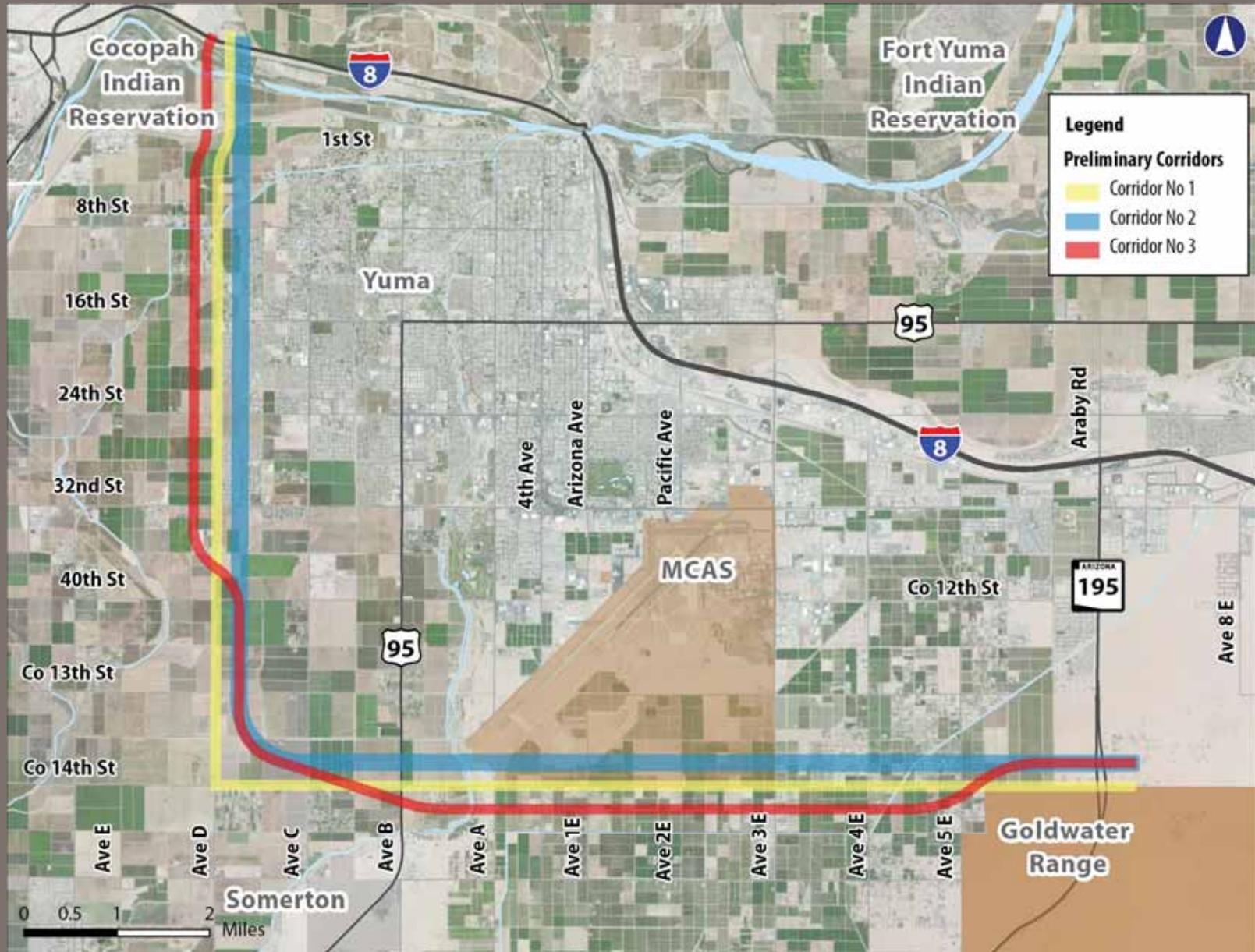


Legend

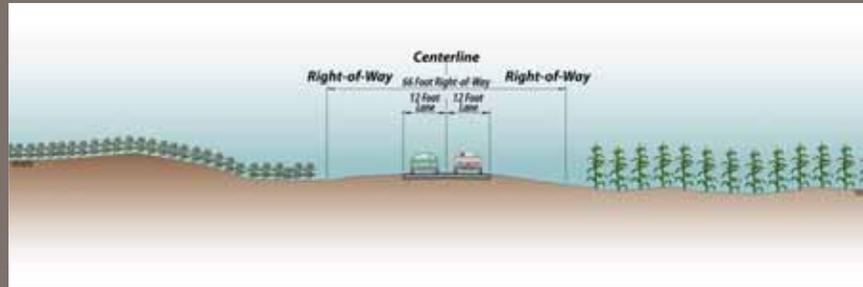
- Study Area
- Interstate Highway
- US or State Highway
- Major Arterial
- Railroad
- Waterway
- County Boundary
- Military Area



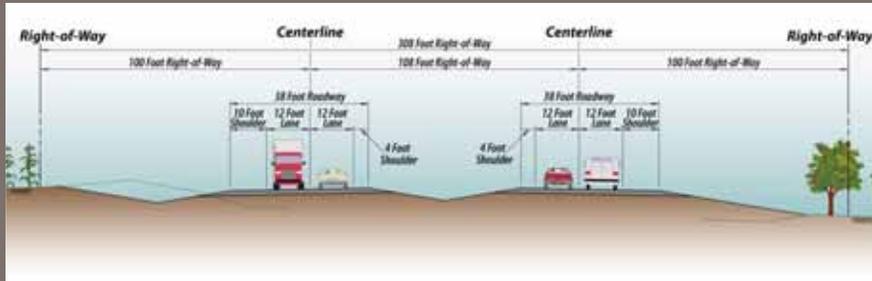
Study Area



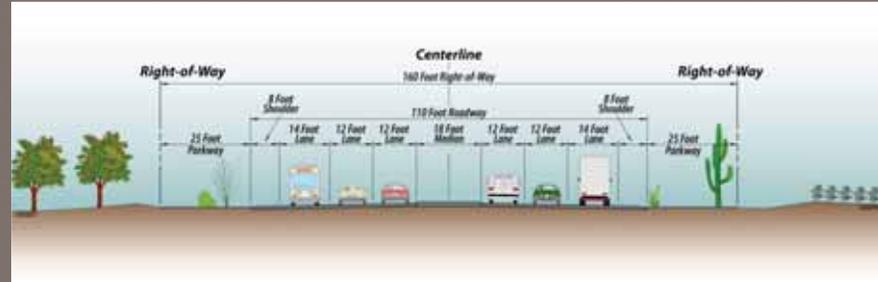
Corridor Map



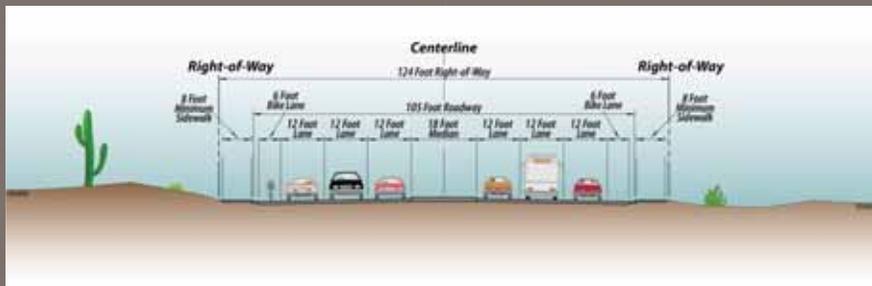
Existing Rural Two Lane



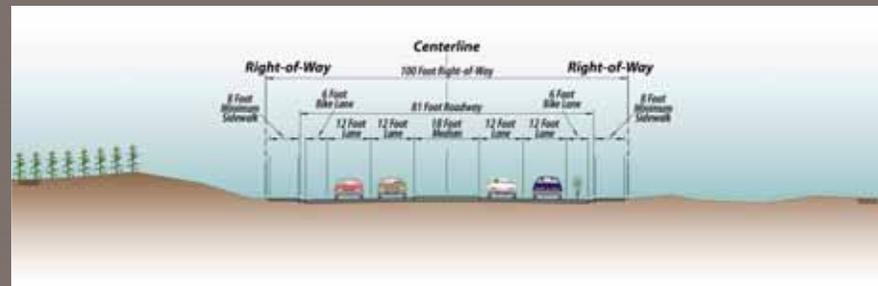
Rural Freeway



Expressway



Major Arterial



Minor Arterial

Preliminary Matrix

EVALUATION CRITERIA	NO BUILD	ALTERNATIVE 1A RURAL FREEWAY	ALTERNATIVE 1B EXPRESSWAY	ALTERNATIVE 1C PRINCIPAL ARTERIAL	ALTERNATIVE 1D MINOR ARTERIAL	ALTERNATIVE 2A RURAL FREEWAY	ALTERNATIVE 2B EXPRESSWAY	ALTERNATIVE 2C PRINCIPAL ARTERIAL	ALTERNATIVE 2D MINOR ARTERIAL	ALTERNATIVE 3A RURAL FREEWAY	ALTERNATIVE 3B EXPRESSWAY	ALTERNATIVE 3C PRINCIPAL ARTERIAL	ALTERNATIVE 3D MINOR ARTERIAL
Impacts to Future Traffic Capacity	• No Change	• Minimal Score (+1) A Freeway facility has the capacity to move large volumes of vehicles	• Minimal Score (+1) An Expressway has the capacity to move large volumes of vehicles	• Moderate Score (+2) A Principal Arterial will operate at an acceptable LOS for a majority of the day	• Major Score (+3) A Minor Arterial will experience congestion as the region fully develops	• Minimal Score (+1) A Freeway facility has the capacity to move large volumes of vehicles	• Minimal Score (+1) An Expressway has the capacity to move large volumes of vehicles	• Moderate Score (+2) A Principal Arterial will operate at an acceptable LOS for a majority of the day	• Major Score (+3) A Minor Arterial will experience congestion as the region fully develops	• Minimal Score (+1) A Freeway facility has the capacity to move large volumes of vehicles	• Minimal Score (+1) An Expressway has the capacity to move large volumes of vehicles	• Moderate Score (+2) A Principal Arterial will operate at an acceptable LOS for a majority of the day	• Major Score (+3) A Minor Arterial will experience congestion as the region fully develops.
Impacts to Existing Residences	• None	• Major Score (+3) Impacts many existing residential properties located adjacent to existing Avenue D and Co. 14 th St.	• Major Score (+3) Impacts many existing residential properties located adjacent to existing Avenue D and Co. 14 th St.	• Moderate Score (+2) Partial acquisition of various existing Residential properties located adjacent to existing Avenue D and Co. 14 th St.	• Minimal Score (+1) Partial acquisition of a few existing Residential properties located adjacent to existing Avenue D and Co. 14 th St.	• Major Score (+3) Impacts many existing residential development located within Corridor #2	• Major Score (+3) Impacts many existing residential development located within Corridor #2	• Major Score (+3) Impacts many existing residential development located within Corridor #2	• Major Score (+3) Impacts many existing residential development located within Corridor #2	• Moderate Score (+2) Impacts a fair amount of existing Residential Development located within Corridor #3	• Moderate Score (+2) Impacts a fair amount of existing Residential Development located within Corridor #3	• Moderate Score (+2) Impacts a fair amount of existing Residential Development located within Corridor #3	• Moderate Score (+2) Impacts a fair amount of existing Residential Development located within Corridor #3
Impacts to Existing Agriculture	• None	• Major Score (+3) The Avenue D and Co 14 th St. existing 66 foot R/W will be far short of the required 300 foot R/W.	• Major Score (+3) An additional 100 foot of R/W is required.	• Moderate Score (+2) An additional 58 foot of R/W is required.	• Minimal Score (+1) An Additional 34 foot of R/W is required.	• Moderate Score (+2) Impacts the least amount of agriculture lands of the 3 Corridors.	• Moderate Score (+2) Impacts the least amount of agriculture lands of the 3 Corridors.	• Moderate Score (+2) Impacts the least amount of agriculture lands of the 3 Corridors.	• Moderate Score (+2) Impacts the least amount of agriculture lands of the 3 Corridors.	• Major Score (+3) Impacts the largest amount of Agriculture Lands.	• Major Score (+3) Impacts the largest amount of Agriculture Lands.	• Major Score (+3) Impacts the largest amount of Agriculture Lands.	• Major Score (+3) Impacts the largest amount of Agriculture Lands.
Impacts to MCAS-Yuma Airport	• None	• Moderate Score (+2) Future plans of MCAS show improvements extending to Co 14 th St, while a 300 foot corridor may impact planned improvements	• Moderate Score (+2) Future plans of MCAS show improvements extending to Co 14 th St, while a 160 foot corridor may impact planned improvements	• Minimal Score (+1) Future plans of MCAS show improvements extending to Co 14 th St. Construction of a Principal Arterial on Co 14 th St will mesh with MCAS improvements	• Minimal Score (+1) Future plans of MCAS show improvements extending to Co 14 th St. Construction of a Minor Arterial on Co 14 th St will mesh with MCAS improvements	• Major Score (+3) Corridor #2 cuts across the existing MCAS runway and the planned improvements on the south side of the airbase.	• Major Score (+3) Corridor #2 cuts across the existing MCAS runway and the planned improvements on the south side of the airbase.	• Major Score (+3) Corridor #2 cuts across the existing MCAS runway and the planned improvements on the south side of the airbase.	• Major Score (+3) Corridor #2 cuts across the existing MCAS runway and the planned improvements on the south side of the airbase.	• Minimal Score (+1) Corridor #3 is located south of Co 14 th St	• Minimal Score (+1) Corridor #3 is located south of Co 14 th St	• Minimal Score (+1) Corridor #3 is located south of Co 14 th St	• Minimal Score (+1) Corridor #3 is located south of Co 14 th St
Access/Frontage Roads/Duplication of Facility Type	• None	• Major Score (+3) Freeway typical section requires grade separated crossings. Frontage roads may be required to maintain existing access	• Moderate Score (+2) Frontage roads may be required to maintain existing access.	• Minimal Score (+1) Direct access to roadway will be maintained, right in-right out	• Minimal Score (+1) Direct access to roadway will be maintained, right in-right out	• Moderate Score (+2) Freeway typical section requires grade separated crossings. Avenue D and Co 14 th St remain as local access	• Minimal Score (+1) Avenue D and Co 14 th St remain as local access	• Moderate Score (+2) Avenue D and Co 14 th St remain as local access, However two parallel roadways located within a ¼ mile with high accessibility may be unreasonable	• Moderate Score (+2) Avenue D and Co 14 th St remain as local access, However two parallel roadways located within a ¼ mile with high accessibility may be unreasonable	• Moderate Score (+2) Freeway typical section requires grade separated crossings. Avenue D and Co 14 th St remain as local access	• Minimal Score (+1) Avenue D and Co 14 th St remain as local access	• Moderate Score (+2) Avenue D and Co 14 th St remain as local access, However two parallel roadways located within a ¼ mile with high accessibility may be unreasonable	• Moderate Score (+2) Avenue D and Co 14 th St remain as local access, However two parallel roadways located within a ¼ mile with high accessibility may be unreasonable
Environmental Impacts*	• No Impacts to prime farmland • Moderate Impacts to Air Quality (localized if any)	• Minimal Score (+1) Impacts to Prime Farmland • No Impacts to Air Quality (localized if any)	• Minimal Score (+1) Impacts to Prime Farmland • No Impacts to Air Quality (localized if any)	• Minimal Score (+1) Impacts to Prime Farmland • No Impacts to Air Quality (localized if any)	• Minimal Score (+1) Impacts to Prime Farmland • No Impacts to Air Quality (localized if any)	• Moderate Score (+2) Impacts to Prime Farmland • No Impacts to Air Quality (localized if any)	• Moderate Score (+2) Impacts to Prime Farmland • No Impacts to Air Quality (localized if any)	• Moderate Score (+2) Impacts to Prime Farmland • No Impacts to Air Quality (localized if any)	• Moderate Score (+2) Impacts to Prime Farmland • No Impacts to Air Quality (localized if any)	• Moderate Score (+2) Impacts to Prime Farmland • No Impacts to Air Quality (localized if any)	• Moderate Score (+2) Impacts to Prime Farmland • No Impacts to Air Quality (localized if any)	• Moderate Score (+2) Impacts to Prime Farmland • No Impacts to Air Quality (localized if any)	• Moderate Score (+2) Impacts to Prime Farmland • No Impacts to Air Quality (localized if any)
Total Preliminary Evaluation Score (Lowest 4 Scores and No Build to Secondary Eval.)	• N/A	• Score (13)	• Score (12)	• Score (9)	• Score (8)	• Score (13)	• Score (12)	• Score (14)	• Score (15)	• Score (11)	• Score (10)	• Score (12)	• Score (13)

Secondary Matrix

EVALUATION CRITERIA	NO BUILD	ALTERNATIVE 1C PRINCIPAL ARTERIAL	ALTERNATIVE 1D MINOR ARTERIAL	ALTERNATIVE 3A RURAL FREEWAY	ALTERNATIVE 3B EXPRESSWAY
Safety	Low (+3) <ul style="list-style-type: none"> ✓ Driveway and intersection conflicts will exist. ✓ Open median will allow left turn conflicts ✓ Congestion will add to accidents. ✓ No provisions for pedestrians 	Medium (+2) <ul style="list-style-type: none"> ✓ Driveway and intersection conflicts will exist. ✓ Closed median will restrict left turn movements. ✓ Conflicts with pedestrians possible. 	Low (+3) <ul style="list-style-type: none"> ✓ Driveway and intersection conflicts will exist. ✓ Closed median will restrict left turn movements. ✓ Congestion will add to accidents. ✓ Conflicts with pedestrians possible. 	High (+1) <ul style="list-style-type: none"> ✓ Access control and grade separated interchanges reduce conflict points between vehicles. ✓ Virtually eliminates conflicts with pedestrians 	High (+1) <ul style="list-style-type: none"> ✓ Limited access points reduce conflict points between vehicles. ✓ Vehicle pedestrian interaction is reduced.
Cost	Minimal (+1) <ul style="list-style-type: none"> ✓ The facility is currently in place the only costs necessary are to maintain the existing Avenue D and County 14th Street. 	Moderate (+2) <ul style="list-style-type: none"> ✓ Roadway \$3,167,000 per mile (excluding right-of-way and major bridges) (including roadway construction and interchanges) ✓ 124 foot right-of-way through agriculture ✓ 124 foot right-of-way through residential ✓ Two interchanges (I-8 & SR 195) ✓ Colorado River Bridge 	Moderate (+2) <ul style="list-style-type: none"> ✓ Roadway \$2,837,000 per mile (excluding right-of-way and major bridges) (including roadway construction and interchanges) ✓ 100 foot right-of-way through agriculture ✓ 100 foot right-of-way through residential ✓ One interchange (I-8) ✓ Colorado River Bridge 	Major (+3) <ul style="list-style-type: none"> ✓ Roadway \$15,174,000 per mile (excluding right-of-way and major bridges) (including roadway construction and interchanges) ✓ 300 foot right-of-way through agriculture ✓ 300 foot right-of-way through residential ✓ Five interchanges ✓ Two directional interchanges ✓ Two Colorado River Bridges 	Moderate (+2) <ul style="list-style-type: none"> ✓ Roadway \$4,002,000 per mile (excluding right-of-way and major bridges) (including roadway construction and interchanges) ✓ 160 foot right-of-way through agriculture ✓ 160 foot right-of-way through residential ✓ Two Interchanges (I-8 & SR 195) ✓ Colorado River Bridge
Consistent with City of Yuma Approved Plans	No (+2) <ul style="list-style-type: none"> ✓ The 2012 City of Yuma General Plan identifies Ave. D and Co. 14th as Future Expressways. ✓ The 2005 City of Yuma Major Roadways Plan identifies Ave. D and Co. 14th as Future Expressways 	No (+2) <ul style="list-style-type: none"> ✓ The 2012 City of Yuma General Plan identifies Ave. D and Co. 14th as Future Expressways. ✓ The 2005 City of Yuma Major Roadways Plan identifies Ave. D and Co. 14th as Future Expressways 	No (+2) <ul style="list-style-type: none"> ✓ The 2012 City of Yuma General Plan identifies Ave. D and Co. 14th as Future Expressways. ✓ The 2005 City of Yuma Major Roadways Plan identifies Ave. D and Co. 14th as Future Expressways 	No (+2) <ul style="list-style-type: none"> ✓ The 2012 City of Yuma General Plan identifies Ave. D and Co. 14th as Future Expressways. ✓ The 2005 City of Yuma Major Roadways Plan identifies Ave. D and Co. 14th as Future Expressways 	Yes (+1) <ul style="list-style-type: none"> ✓ The 2012 City of Yuma General Plan identifies Ave. D and Co. 14th as Future Expressways. ✓ The 2005 City of Yuma Major Roadways Plan identifies Ave. D and Co. 14th as Future Expressways
Implementation	Minimal (+1) <ul style="list-style-type: none"> ✓ No implementation needed. Avenue D and County 14th Street are existing. 	Minimal (+1) <ul style="list-style-type: none"> ✓ Future development adjacent to Co. 14th St and Avenue D to construct half street improvements. ✓ Once fully developed or traffic demands require improvements, local agencies will complete roadway improvements along undeveloped Lands. 	Minimal (+1) <ul style="list-style-type: none"> ✓ Future development adjacent to Co. 14th St and Avenue D to construct half street improvements. ✓ Once fully developed or traffic demands require improvements, local agencies will complete roadway improvements along undeveloped Lands. 	Major (+3) <ul style="list-style-type: none"> ✓ Freeway would have to be built in large (2 Mile Min) phases/segments. ✓ Then state agencies would be required to construct the facility. 	Moderate (+2) <ul style="list-style-type: none"> ✓ Expressway would have to be built in small phases/segments (1 mile or less). ✓ Local agencies would be required to construct facility
Right-of-Way Impacts	Minimal (+1) <ul style="list-style-type: none"> ✓ No right-of-way required. Avenue D and County 14th Street are existing. 	Moderate (+2) <ul style="list-style-type: none"> ✓ The 124' foot right-of-way width requirement would require additional land on either side of Avenue D and County 14th St. ✓ However if the land is developed in the distant future the community could require developers to dedicate the necessary right-of-way for the half street improvement. 	Minimal (+1) <ul style="list-style-type: none"> ✓ The 100' foot right-of-way width requirement would require additional land on either side of Avenue D and County 14th St. ✓ However if the land is developed in the distant future the community could require developers to set aside the necessary right-of-way for the half street improvement. 	Major (+3) <ul style="list-style-type: none"> ✓ The 300' foot right-of-way width requirement would create a large footprint through existing agriculture lands and possible future development. ✓ However as the land use/development changes in the distant future the local community could begin preserving/acquiring the required right of way, in a variety of ways depending upon the parcel sizes, types of development, and negotiations. ✓ Any dedication requirements should be justified by the impacts of the development. 	Moderate (+2) <ul style="list-style-type: none"> ✓ The 160' foot right-of-way width requirement would create a large footprint through existing agriculture lands. ✓ However as the land use/development changes in the distant future the local community could begin preserving/acquiring the required right of way, in a variety of ways depending upon the parcel sizes, types of development, and negotiations. ✓ Any dedication requirements should be justified by the impacts of the development.
Benefit to Cross Region Travel Times	Low (+3) <ul style="list-style-type: none"> ✓ There are no additional benefits to the region for east/west and north/south transportation 	Moderate (+2) <ul style="list-style-type: none"> ✓ With three through lanes in each direction, conflicting turn movements, and direct access from adjacent development. The cross region travel time within the study area will increase as additional development occurs 	Low (+3) <ul style="list-style-type: none"> With two through lanes in each direction, conflicting turn movements, and direct access from adjacent development. The cross region travel times within the study area will significantly increase as additional development occurs. 	High (+1) <ul style="list-style-type: none"> ✓ With two lanes in each direction, controlled access, high speed design, and the existing Avenue D and County 14th Street remaining. The cross region travel times will remain low long into the future. 	High (+1) <ul style="list-style-type: none"> ✓ With three lanes in each direction, limited access, and the existing Avenue D and County 14th Street remaining. The cross region travel times will remain low long into the future.
Colorado River Constraints	Minimal (+1) <ul style="list-style-type: none"> ✓ There will not be any impacts to Colorado River. 	Moderate (+2) <ul style="list-style-type: none"> ✓ The soils in the Colorado River near the Avenue D alignment are typically a silt loam. ✓ The Colorado River has water flow year round therefore construction could be affected. ✓ Environmental concerns may affect bridge design and type. 	Moderate (+2) <ul style="list-style-type: none"> The soils in the Colorado River near the Avenue D alignment are typically a silt loam. The Colorado River has water flow year round therefore construction could be affected. Environmental concerns may affect bridge design and type. 	Moderate (+2) <ul style="list-style-type: none"> ✓ The soils in the Colorado River near the Avenue D alignment are typically a silt loam. ✓ The Colorado River has water flow year round therefore construction could be affected. ✓ Environmental concerns may affect bridge design and type. 	Moderate (+2) <ul style="list-style-type: none"> ✓ The soils in the Colorado River near the Avenue D alignment are typically a silt loam. ✓ The Colorado River has water flow year round therefore construction could be affected. ✓ Environmental concerns may affect bridge design and type.
Total Secondary Evaluation Score (Low Score is Preferred)	Score (12)	Score (13)	Score (14)	Score (15)	Score (11)

Yuma Expressway Corridor Study

COMMENT FORM

Please provide us any comments regarding the study or your input about the potential Yuma Expressway corridor alignment.

COMMENTS: I like the north/south aspect of I-8 access on the west side of town - we don't currently have any. I live in Barkley Ranch (County 17th & D Ave), Yuma needs I-8 access on the western edge of town.

This study needs to evaluate the residential development on the west side of town.

This study needs to evaluate ~~per~~ consider winter visitor influx/impact on traffic (increase in traffic).

Optional

Greg McShane 4862 W 30th Place Yuma AZ 85364
Name: Address: City: State: ZIP:
928-317-9213 N/A mcshaneqm@aol.com
Phone: Fax: Email: ✓

Completed comment forms can be submitted to the project team at the completion of the public meeting or sent to the ADOT Outreach Team by Jan. 24, 2013. Please send comments to Kevin Kugler c/o RBF Consulting, 16605 N. 28th Avenue, Suite 100, Phoenix, AZ 85053; Fax: 602.467.2204; or Email: KKugler@rbf.com.

Completion of this comment form is completely voluntary. All comments provided will become part of the study's documentation. Under state law, any identifying information provided will become part of the public record, and as such, must be released to any individual upon request.

13-014

ADOT



FOR MORE INFORMATION:
azdot.gov/yumaexpressway

Yuma Expressway Corridor Study

COMMENT FORM

Please provide us any comments regarding the study or your input about the potential Yuma Expressway corridor alignment.

COMMENTS: While I support the expressway alternative the preferred alternative along the North-South needs to be at least a mile or two from the Ave D alignment. This will reduce impact to established residential subdivisions and also allow opportunity future commercial development adjacent to the expressway but away from the residential subdivisions.

Optional

Triguna Israel

Name:

Address:

City:

State:

ZIP:

928-210-3040

trigunaisrael@p-e-g.us

Phone:

Fax:

Email:

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13-014

ADOT



FOR MORE INFORMATION:
azdot.gov/yumaexpressway

Yuma Expressway Corridor Study

COMMENT FORM

Please provide us any comments regarding the study or your input about the potential Yuma Expressway corridor alignment.

COMMENTS:

North and South traffic should be looked at and not just Ave D.

Optional

Name: Address: City: State: ZIP:

Phone: Fax: Email:

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13-014



FOR MORE INFORMATION:
azdot.gov/yumaexpressway

Kugler, Kevin

From: Marty Hoganson <martylisa_y@yahoo.com>
Sent: Thursday, January 17, 2013 11:06 PM
To: Kugler, Kevin
Subject: Yuma corridor Plan

Comment: Yuma Expressway Corridor Study 1-17-2013

I attended the public open house this evening in Yuma. Thanks for the opportunity to comment.

I understand this corridor planning is for an event in the distant future, but I think it should be built much earlier and to a smaller design. If the next thirty years is anything like the past thirty years, I believe the city should be looking for the next area in which to expand their business community. A freeway or expressway would require frontage roads therefore a huge footprint to facilitate this expansion. I think the present Business I-8 or east 32nd street is what it should look like. It easily moves large volumes of traffic, serves a vibrant business community, and does it with a smallish footprint. If the Avenue "D" section were to include a bridge over the river and I-8 freeway access it would provide the best of all worlds for those using the north leg, either local traffic or San Luis / Somerton traffic. The east-west leg (County 14) would complete the loop for those doing business in or living in the south-east part of town. Combine it with another option to the Foothills (40th maybe) and the section would relieve traffic congestion between town and Foothills developments.

Presently we should be developing better access to the city on north-south routes from housing developments to the south, and to the Foothills by additional routes south of the freeway. Avenue B (95 south) in town is already too busy. Avenue A south is just poorly done near MCAS. The 4th Avenue Extension isn't helpful. Avenue 3-E south is tied up by Marine Base traffic that can only become worse. Avenue 4-E is really too far east to much serve as a link to town from the south. County 14 to 195 provides the only relief in sight, but it stops too soon. With the Marine base expansion nearing completion the traffic on these routes will soon be incredibly heavy, years before anything is done to relieve it. How is the Yuma Expressway Corridor Study going to help any of this? I guess it is good to plan for 20 years from now, however, despite what your studies say we need improvements now. Has your study included the MCAS expansion at all? I hope we are not to use Phoenix or the Atlantic Coast's traffic volumes as a bench mark. It appears the master plan is to do nothing until the community has been half choked to death by traffic and bad roadways. Hasn't the past thirty years taught us anything? I expect the expressway, as it is now proposed, will never be built. Pressing issues and clearer minds will send the plan to the garbage

can, and all of this planning will be for nothing. Back to the drawing board! You can do better.

Marty Hoganson
10722 S Williams Ave.
Yuma, AZ 85365

Yuma Expressway Corridor Study

COMMENT FORM

Please provide us any comments regarding the study or your input about the potential Yuma Expressway corridor alignment.

COMMENTS: THE YUMA COUNTY WATER USER'S ASSOCIATION
OPPOSES THE DEVELOPMENT OF A HIGHWAY WITHIN
THE YUMA VALLEY. PLEASE FIND ATTACHED LETTERS,
DATED OCTOBER 16, 2012 AND OCTOBER 12, 2012,
CLARIFYING OUR CONCERNS.

Optional

OMAR PENUNURI 3800W CO. 15TH ST SOMERTON AZ 85350
Name: Address: City: State: ZIP:
928-627-8824 x 25 openurwri@ycwua.org
Phone: Fax: Email:

Completed comment forms can be submitted to the project team at the completion of the public meeting or sent to the ADOT Outreach Team by **Jan. 24, 2013**. Please send comments to Kevin Kugler c/o RBF Consulting, 16605 N. 28th Avenue, Suite 100, Phoenix, AZ 85053; Fax: 602.467.2204; or Email: KKugler@rbf.com.

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13-014

ADOT



FOR MORE INFORMATION:
azdot.gov/yumaexpressway



YUMA COUNTY WATER USERS' ASSOCIATION

MAILING ADDRESS:
POST OFFICE BOX 5775
YUMA, ARIZONA 85366-5775
OFFICE: (928) 627-8824

SHIPPING ADDRESS:
3800 WEST COUNTY 15TH STREET
SOMERTON, ARIZONA 85350
FAX: (928) 627-3065

EMAIL ADDRESS:
OFFICE@YCWUA.ORG

COPY

October 16, 2012

Parsons Brinckerhoff
Attention: Doug LaMont, P.E.
350 West Washington Street, Suite 300
Tempe, AZ 85281

Subject: Yuma Expressway Study

Dear Mr. LaMont,

The Yuma County Water Users' Association (Association) has been asked by the Arizona Department of Transportation (ADOT) in a letter dated September 7, 2012 to provide feedback to your firm concerning the potential development of the Yuma Expressway. As President of the Association's Board of Governors (Board), I respectfully submit this letter to address common concerns held between myself and other Board members, all of whom are farmers, that would be impacted by the development of the outlined study.

The area of study outlines a two-mile corridor that is centered upon County 14th Street and Avenue D. The Association manages certain lands and rights-of-way on behalf of the U.S. Bureau of Reclamation (Reclamation) for approximately 9-1/2 linear miles of the proposed corridor. Based purely upon using the center-line of the referenced streets above, more than two dozen separate facilities managed by the Association would require extensive relocation efforts. Such efforts would include major pipelining, replacement and extension of box-culverts, canal relocation and concrete lining, relocation of critical supervisory control and data acquisition (SCADA) sites, and relocation of power lines owned and operated by the Association. Shifting the proposed project to either side of the center-line would not result in a decreased need of relocation, but conversely could possibly involve even more extensive work to accommodate a roadway. This work not only requires extensive rights-of-way considerations (all facilities are in Reclamation right-of-way), but also would be subjected to a very limiting construction schedule, as extended outages to any of our facilities would have very swift negative consequences to the Yuma Valley's year-round farming operations, groundwater pumping, and drainage system operations. Planned outages to these critical facilities are subject to the approval of the Association's management and Board. Such possible construction projects would be reimbursable by ADOT to the Association and would factor in the extensive bypass pumping of irrigation flows as well as drainage flows and groundwater control.

The Board feels the construction of such an expressway within the Yuma Valley would result in detrimental effects to the operational and maintenance activities that we are required to perform under contract with Reclamation. Within the Association's management area of the proposed alignment, approximately three dozen road crossings and linear alignments are utilized by the Association's employees in the daily course of construction, maintenance, and operations. We feel that the

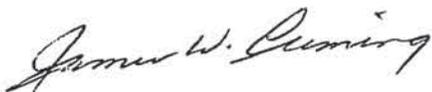
development of an expressway would severely impact the Association's ability to efficiently perform those duties, as a result of having to navigate around a highway of this type. Limited road crossings would also result in a delayed response of critical personnel and heavy equipment to the site of a major canal breach. Delays of any type only compound the physical damage, financial impact, and potential risk to human health and safety caused by these canal breaches. The Association simply cannot accept such increased risks to our response to such incidents.

To that end, the Board also strongly advises ADOT consider the impact of such a roadway to the farms that operate in this area throughout the year. Requiring tractors, implements, and related equipment to detour from what was historically used as a route to a new crossing will certainly result in increased fuel consumption, wear-and-tear on equipment, and exposure to the public. At times, tractors pulling implements would inevitably be on the proposed highway, presenting a risk to both the tractor operator and other motor vehicles on the highway. It would certainly not be in the interest of public and employee safety to have a highway of this magnitude in an area that is so heavily farmed. The potential for major accidents on such type of route could be very high.

Based on a width of 600 feet, a 4-lane highway with its associated buffer zones would consume over 690 acres of prime, fertile farmland that is cropped year-round. Expand that area to a width of 800 feet, and the land total adds up to over 920 acres. Farm land in this area sells for upwards of \$35 thousand per acre. This would net an expense to the proposed project of between \$24 million and \$32 million in land acquisitions within the Association's area of interest alone. Additional concerns are expressed to the potential impact to food safety, as the fields adjacent to the proposed highway are prime producers of leafy green vegetables, among other crop types. As much of the public is aware of, leafy green vegetables are the focus of much scrutiny in the national headlines. We take food safety very seriously and make it our top priority; with untold increases on traffic on such a highway, we would certainly be subjected to an increased risk to food safety in the event of a motor vehicle accident involving trucks that might be carrying harmful cargo.

It is the impression of the Board that the development of State Route 195 served to shuttle border-related cargo traffic in an efficient and safe manner to Interstate 8. We feel the development of an additional route along the proposed alignment is not only wholly unnecessary, but would result in steep financial impact to taxpayers, financial harm to the produce market in the form of loss of productive ground, elimination of prime farmland, and undue risk and danger to farm workers and the public at large. We continue our firm opposition to the development of such a highway in the Yuma Valley, as we have for the past 24 years.

Sincerely,



James W. Cuming
President

cc: Arizona Department of Transportation, Multimodal Planning Division, Mark Hoffman



YUMA COUNTY WATER USERS' ASSOCIATION

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3800 WEST COUNTY 15TH STREET
SOMERTON, ARIZONA 85350
FAX: (928) 627-3065

EMAIL ADDRESS:
OFFICE@YCWUA.ORG

October 12, 2012

Parsons Brinckerhoff
ATTN: Doug LaMont, PE
350 West Washington Street, Suite 300
Tempe, AZ 85281

Re: Yuma Expressway Study

The Yuma County Water Users' Association (YCWUA) manages United States Bureau of Reclamation Rights-of-Way (USBR) within the Valley Division of the Yuma Project. YCWUA has reviewed the Yuma Expressway Study and has the following comments:

1. See attached **Exhibit A**. **Exhibit A** depicts our YCWUA Headquarters, Four Residences, a Substation, Canals, Drains, Electrical Overhead Powerlines and Wells Rights-of-Way managed by YCWUA within the Yuma Expressway Study limits.
2. If the Yuma Expressway Highway is ever constructed some of the facilities and utilities identified on **Exhibit A** will have to be relocated away from the centerline or alignment of the Yuma Expressway Highway. New Exclusive Rights-of-Way will need to be acquired for the USBR for any relocated facilities and utilities.
3. An encroachment license will have to be issued for the Yuma Expressway Highway for any encroachment within and across YCWUA Rights-of-Way. All Highway Plans along Avenue D and County 14th Street within the YCWUA limits will have to be submitted for review, comments, approval and licensing by YCWUA.
4. YCWUA opposes the Yuma Expressway Highway, as new Rights-of-Way requirements in the Yuma Valley will take valuable farmland out of production.

If you have concerns or questions regarding the comments, please contact myself at (928) 627-8824 x25 (Sr. Engineering Technician, Lands and ROW).

Sincerely

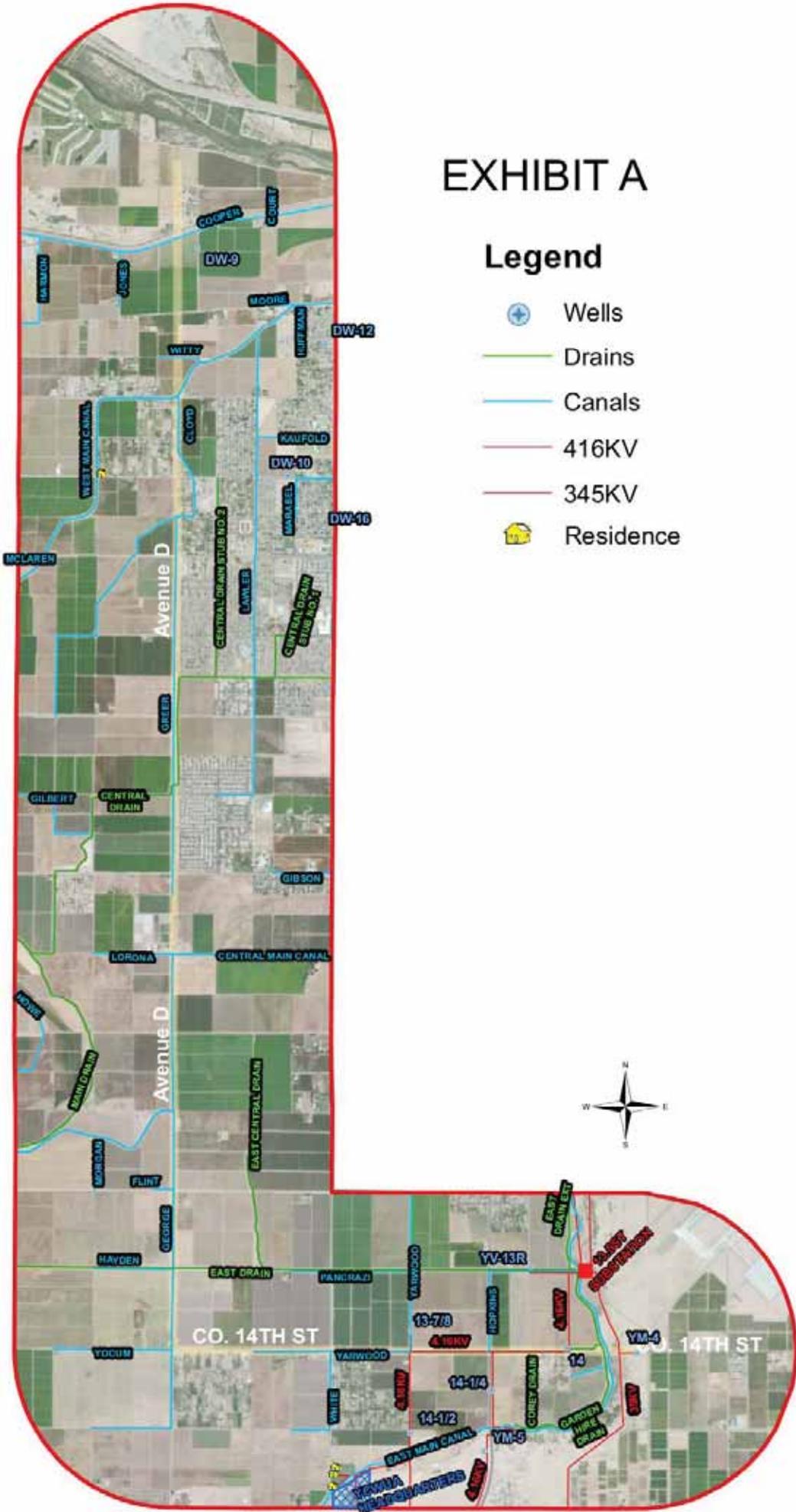

Omar Peñuñuri
Senior Engineering Technician,
Lands and ROW

cc: USBR

EXHIBIT A

Legend

- Wells
- Drains
- Canals
- 416KV
- 345KV
- Residence



-----Original Message-----

From: cameade@roadrunner.com [mailto:cameade@roadrunner.com]

Sent: Saturday, January 19, 2013 7:42 AM

To: Mark Hoffman

Subject: Yuma Expressway

Dear Sir, Today I had the shock of my life when I read an article in the Yuma Sun about the Yuma Expressway. I discovered that a roadway was going to be built through my house, destroying my plans and financial future. I did not even receive the courtesy of a letter telling me that my future was in danger. If this plan is implemented, even if it won't be built for decades, my property value is zero. No one will buy my property from now on because it will be part of this roadway. This was to be my forever home. We spent our entire lives saving and planning this home now it is worthless. I am so outraged that I can not even express to you the depths of my feelings. I moved out of the City of Yuma's limits so I wouldn't have to deal with their high handed tactics and now I find out they and ADOT are planning to take my house and lands. I oppose this plan and am disgusted that I had to find out about it from an article in the newspaper. I and other land owners should have had the courtesy of a letter telling us of the plan and the public meeting being held. Cheryl Meade

ADOT RESPONSE

Ms. Meade

Thank you for sending your comments and concerns regarding the Yuma Expressway Study. It is unfortunate that you were not aware of the two public input meetings conducted on 25 September 2012 and January 17 of this year. While no individual invitations were mailed out to property owners within the study area, advance notice was published in the newspaper for both public meetings. As requested by the City of Yuma, the Yuma Expressway Study is an initial evaluation to determine the viability of a new corridor, approximate when the need for the new corridor would occur and identify a preferred alternative to assist the city with long-range transportation planning. The preferred alternative is an identified corridor, not the specific location of a potential roadway. Selection of the exact location of a new roadway will be part of additional evaluations that would be subject to public review and comment at some unidentified time in the future. At present, there are no further Yuma Expressway activities that are scheduled to occur within the next five years.

Thank you for taking the time to provide your thoughts and concerns regarding this potential project. You can access study material developed during the project along with public meeting materials on the study webpage at www.azdot.gov/yumaexpressway.

Mark Hoffman

Arizona Department of Transportation

Multimodal Planning Division

206 S. 17th Ave MD#310B

Phoenix, AZ 85007

602.712.7454



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Appendix I – Planning and Environmental Linkages Checklist

Planning and Environmental Linkages

Questionnaire and Checklist

The Planning and Environmental Linkage (PEL) process, a specific product of implementing SAFETEA-LU,¹ seeks to develop subarea and corridor studies that can be used more directly to inform the NEPA² process. Effective, conceptual-level transportation planning studies that follow the PEL process provide opportunities both to identify important issues of concern early and to build the agency, stakeholder, and public understanding necessary to successfully address them. Such early, integrated planning is not driven solely by regulatory requirements and the quest for more efficient and effective processes, although those are desirable results. Transportation and environmental professionals—as well as those in metropolitan planning organizations, state and federal resource agencies, and nongovernmental organizations—are finding that early collaboration helps achieve broader transportation and environmental stewardship goals through better decisions regarding programs, planning, and projects.

This document has been developed by the Arizona Department of Transportation (ADOT) to provide guidance, particularly to transportation planners and environmental planners, regarding how to most effectively link the transportation planning and NEPA processes. By considering the questions and issues raised in this questionnaire, transportation planners will become more aware of potential gaps in their subarea or corridor studies, better understand the needs of future users of the studies, and be reminded of the benefits of wider and/or deeper collaboration with agencies, the public, and other stakeholders. Environmental planners who fill out the checklist will assume a new role in the transportation planning process: becoming an advocate for early awareness of environmental issues before the NEPA process begins.

This questionnaire and checklist will be used to effectively influence the scope, content, and process employed for ADOT transportation planning studies that focus on specific transportation corridors or on transportation network subareas (versus statewide transportation studies). Completion of this questionnaire and checklist will support the PEL process and serve dual objectives:³

- provide guidance to transportation planners on the level of detail needed to ensure that information collected and decisions made during the transportation planning study can be used during the NEPA process for a proposed transportation project
- provide the future NEPA study team with documentation on the outcomes of the transportation planning process, including the history of decisions made and the level of detailed analysis undertaken

When conducting a transportation planning study that links to the future NEPA process, major issues include:⁴

- identifying the appropriate level of environmental analysis for the study

¹ Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (Public Law 109-59)

² National Environmental Policy Act of 1969

³ Objectives are based on the Federal Highway Administration's online document: *Case Studies: Colorado: Colorado Department of Transportation: Tools and Techniques to Implement PEL*, <www.environment.fhwa.dot.gov/integ/case_colorado2.asp> (accessed October 24, 2011).

⁴ Further guidance is available in the Federal Highway Administration's *Guidance on Using Corridor and Subarea Planning to Inform NEPA*, dated April 5, 2011, available online at <www.environment.fhwa.dot.gov/integ/corridor_nepa_guidance.pdf>.

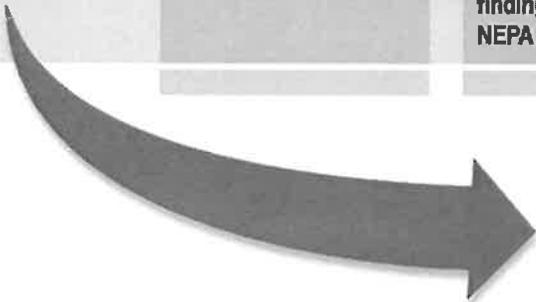
- identifying the appropriate level of agency, stakeholder, and public involvement
- defining unique study concurrence points for seeking agreement from relevant resource agencies, stakeholders, and members of the public
- developing a process to ensure that the study will be recognized as valid within the NEPA process
- identifying when to involve resource agencies in the study, and to what extent they influence decision making

These issues should be considered throughout the transportation planning study process. Users of this *ADOT Planning and Environmental Linkages Questionnaire and Checklist* should review the entire document at the beginning of the study to familiarize themselves with whatever local and general issues may be operative. The questionnaire is provided in two parts: one to be completed by transportation planners at the beginning of the study and one to be completed at the end. The checklist (Part 3) should be used by environmental planners throughout the study and should be finalized at the end of the study.

Upon completion of the transportation planning study, this document should be included as an appendix to the study's final report to document how the study meets the requirements of 23 Code of Federal Regulations § 450.212 or § 450.318 (Subpart B: Statewide Transportation Planning and Programming or Subpart C: Metropolitan Transportation Planning and Programming, respectively).

The flowchart on the following page outlines the major inputs, decision points, and outcomes that occur during implementation of a transportation planning study using the PEL process.

	Transportation Planners	Both	Environmental Planners
PEL Launch	<p>Review Part 1 and Part 2 of questionnaire</p> <p>Complete Part 1 of questionnaire</p>	<p>Become familiar with local and general issues</p> <p>Modify study scope to include or deepen analysis of specific resources or environmental issues</p>	<p>Review checklist</p> <p>Advocate inclusion of resources and issues</p> <p>Seek resource agency assistance in changing study scope</p>
Analysis and Comment	<p>Define, clarify, analyze, and screen modes, corridors, and alternatives (including no-action alternative)</p> <p>Involve relevant stakeholders, agencies, and public in comments and reviews to ensure later acceptability and defensibility in NEPA</p>	<p>Become familiar with local and general issues</p> <p>Modify study scope to include or deepen analysis of specific resources or environmental issues</p>	<p>Continue to advocate addressing collection and analysis of data pertinent to effective application in NEPA process</p>
PEL Completion	<p>Complete Part 2 of questionnaire</p>	<p>Include questionnaire and checklist in appendix to study</p> <p>Document relevant findings for use in later NEPA documents</p>	<p>Complete checklist (Part 3)</p>



Beginning of NEPA Process

Environmental planners review completed PEL questionnaire and checklist and confirm that study recommendations and analyses can support the anticipated NEPA process(es) and document type(s), including, if applicable, incorporation into the content of a Notice of Intent

Questionnaire for Transportation Planners – Part 1

This part of the questionnaire should be completed by transportation planners at the beginning of the transportation planning study. Please note that planners should also review the second part of the questionnaire to understand what additional issues will need to be considered and documented as the study progresses.

Project identification
<i>What is the name of the study? What cities and region does it cover? What major streets are covered? For corridor studies, what are the intended termini?</i>
<p>Yuma Expressway Corridor Study</p> <p>The study area is mainly located within Yuma County, Arizona with the exception of the northern terminus which is in Imperial County, California. The City of Yuma, City of Somerton, Cocopah Indian Reservation, and Fort Yuma Indian Reservation are also partially covered by the study area.</p> <p>Major streets include Araby Road (SR 195), Avenue B (US 95), Avenue C, Avenue D, County 14th Street, 32nd Street, 24th Street, 16th Street, and Avenue 3E.</p> <p>The intended termini are SR 195 to the east, and Interstate 8 (in California) to the north.</p>
<i>Who is the study sponsor?</i>
Arizona Department of Transportation
<i>Briefly describe the study and its purpose.</i>
This study presents existing conditions in the study area including socio-economic and transportation-related characteristics, as well as physical and environmental features. The intent is to evaluate the needs for roadway infrastructure improvement along the corridor and recommend solutions.
<i>Who are the primary study team members (include name, title, organization name, and contact information)?</i>
<p>Mark Hoffman: Project Manager, ADOT/Multimodal Planning Division, 602-712-7454/MHoffman@azdot.gov</p> <p>Russell Reichelt: Engineering Design Manager, City of Yuma, 928-373-4516/Russell.Reichelt@yumaaz.gov</p>
<i>Does the team include advisory groups such as a technical advisory committee, steering committee, or other? If so, include roster(s) as attachment(s).</i>
Yes; there is a Technical Advisory Committee (TAC) in place. For roster, see Attachment A.

Have previous transportation planning studies been conducted for this region? If so, provide a brief chronology, including the years the studies were completed. Provide contact names and locations of the studies and study websites.

1988: ADOT Interstate 8/US 95 Corridor Study – Southwestern corner of Yuma County

This report is on file at the ADOT Research Center.

1998: ADOT State Route 95 Yuma Area Service Highway Design Concept Report – south and east of the study area

This report is on file at the ADOT Research Center.

http://www.co.imperial.ca.us/IVAG/ProjectBriefs/02_IC_TransportationPlan.pdf

2005: ADOT Yuma Area Service Highway Environmental Assessment (EA) – south and east of the study area

Final EA text: http://www.azdot.gov/highways/EPG/EPG_Common/PDF/EAs/195_Yuma_Area_Service_Highway/ash_final_ea_text.pdf

Final EA attachments: http://www.azdot.gov/highways/EPG/EPG_Common/PDF/EAs/195_Yuma_Area_Service_Highway/ash_appendix_b.pdf

2003: Flat-tailed Horned Lizard Rangewide Management Strategy

http://www.fws.gov/southwest/es/arizona/Documents/SpeciesDocs/FTHL/Rangewide_Plan_Final_FTHL.pdf

2005: City of Yuma Major Roadways Plan

http://www.ci.yuma.az.us/Documents/COY_MajorRoadwaysPlan2005.pdf

2006: City of Somerton, Small Area Transportation Study

http://mpd.azdot.gov/mpd/Systems_Planning/PDF/SATS/CompletedSATS/CityOfSomerton.pdf

2007: Imperial County (California) Long Range Transportation Plan Update– northern terminus of the study area

Prepared by the California Department of Transportation (Caltrans) District 11, Transportation Planning Branch

<http://www.imperialcounty.net/ivag/ProjectBriefs/2007-20ImperialCountyTransPlan/ImperialCounty2007TransportationPlanFinalMay2008.pdf>

2007: Marine Corps Air Station Yuma Master Plan – southern portion of the study area

Paula Backs, Community and Planning Liaison

2008: Marine Corps Air Station Yuma Traffic Study – southern portion of the study area

Paula Backs, Community and Planning Liaison

2009: Yuma International Airport Master Plan

http://www.azdot.gov/MPD/Airport_Development/library/MP_PDF/Yuma/Yuma_Master_Plan_Final.pdf

2009: Imperial Valley Association of Governments San Diego-Imperial County I-8 Corridor Strategic Plan

http://www.sandag.org/uploads/projectid/projectid_333_10127.pdf

2009: Caltrans-District 11, I-8 Imperial County Transportation Concept Summary

http://www.dot.ca.gov/dist11/departments/planning/pdfs/tcs/09_I_8_ImperialTCS.pdf

2010: YMPO Travel Demand Model 2009 Update

http://ympo.org/wp-content/uploads/2011/08/Model-DocumentationYMPO_Pat.pdf

2010: Yuma Metropolitan Planning Organization Regional Transportation Plan

http://ympo.org/wp-content/uploads/2011/05/Regional_transp_plan.pdf

2010: Caltrans State Route 186 Transportation Concept Study

http://www.dot.ca.gov/dist11/departments/planning/pdfs/tcs/2010_SR_186_IC_TCS.pdf

2011: Lower Colorado Multi-Species Conservation Program: Yellow-billed Cuckoo Distribution, Abundance, and Habitat Use on the Lower Colorado River and Tributaries, 2010 Annual Report

http://www.southsierraresearch.org/Information/ReportsAndPublications/SSRS_Reports/YBCU_LCR/SSRS_YBCU_LCR_2010.pdf

2012: City of Yuma General Plan

<http://www.yumaaz.gov/18495.htm>

2012: Yuma County 2020 Comprehensive Plan (Circulation Element)

<http://www.co.yuma.az.us/Modules/ShowDocument.aspx?documentid=14074>

City of Yuma Capital Improvement Program (Fiscal Years 2012-2021)

http://www.ci.yuma.az.us/Documents/COY_CapitalImprovementProgram.pdf

Yuma County Capital Improvement Plan (Fiscal Years 2010-2014)

<http://www.co.yuma.az.us/index.aspx?page=924>

Yuma Metropolitan Planning Organization Transportation Improvement Plan (Fiscal Years 2012-2016)

<http://ympo.org/transportation-improvement-plan-tip/>

What current or near-future planning (or other) studies in the vicinity are underway or will be undertaken? What is the relationship of this study to those studies? Provide contact names and locations of the studies and study websites.

None were identified.

Study objectives	
What are your desired outcomes for this study? (Mark all that apply.)	
<input checked="" type="checkbox"/> Stakeholder identification <input checked="" type="checkbox"/> Stakeholder roles/responsibilities definition <input checked="" type="checkbox"/> Travel study area definition <input type="checkbox"/> Performance measures development <input checked="" type="checkbox"/> Development of purpose and need goals and other objectives <input checked="" type="checkbox"/> Alternative evaluation and screening <input type="checkbox"/> Alternative travel modes definition	<input checked="" type="checkbox"/> Scheduling of infrastructure improvements over short-, mid-, and long-range time frames <input checked="" type="checkbox"/> Environmental impacts <input type="checkbox"/> Mitigation identification <input type="checkbox"/> Don't know <input type="checkbox"/> Other _____
Have system improvements and additions that address your transportation need been identified in a fiscally constrained regional transportation plan?	
Yes; this project is identified as a Priority III project for FY 2012 in the City of Yuma Capital Improvement Program (FY 2012-2021)	
Will a purpose and need statement ⁵ be prepared as part of this effort? If so, what steps will need to be taken during the NEPA process to make this a project-level purpose and need statement?	
Yes. The data didn't identify a need until the 2045-50 timeframe. Since conditions change over time, future conditions should be reevaluated in about 10-15 years and the purpose and need updated at that time. All the data supporting a purpose and need would need to be updated during the NEPA process.	
Establishment of organizational relationships	
Is a partnering agreement in place? If so, who are signatories (for example, affected agencies, stakeholders, organizations)? Attach the partnering agreement(s).	
No.	
What are the key coordination points in the decision-making process?	
The TAC Advisory Committee is in place with recurring meetings.	
Planning assumptions and analytical methods	
Is the time horizon of the study sufficiently long to consider long-term (20 years or more from completion of the study) effects of potential scenarios?	
Yes.	
What method will be used for forecasting traffic volumes (for example, traffic modeling or growth projections)? What are the sources of data being used? Has USDOT validated their use?	
Growth projections included in the updated 2009 Yuma Travel Demand Model will be used to forecast traffic volumes. Data sources include annual growth rate and growth factor.	

⁵ For an explanation of purpose and need in environmental documents, please see the Federal Highway Administration's (FHWA's) "NEPA and Transportation Decisionmaking: The Importance of Purpose and Need in Environmental Documents," <[Purpose and Need](#)>. This website provides links to five additional resources and guidance from FHWA that should be helpful in understanding the relationship between goals and objectives in transportation planning studies and purpose and need statements of NEPA documents.

<p><i>Will the study use FHWA's Guide on the Consistent Application of Traffic Analysis Tools and Methods⁶? If not, why not? How will traffic volumes from the travel demand model be incorporated, if necessary, into finer-scale applications such as a corridor study?</i></p>
<p>Since this project is at the early stage of the project development cycle (alternative selection), the traffic analysis is limited to the planning-level roadway segment LOS analysis, which makes references to daily traffic volumes. Highway Capacity Manual (HCM) method and criteria will be applied. The future daily traffic volumes will be obtained from YMPO demand model. The volumes from the demand model will be further fine tuned with the comparison to the estimation from existing counts multiplied by historical growth factors.</p>
<p><i>Do the travel demand models base their projections on differentiations between vehicles?</i></p>
<p>The YMPO demand model has the individual projections for personal cars, medium and large sized heavy vehicles, which takes into account differentiations between vehicles.</p>
<p>Data, information, and tools</p>
<p><i>Is there a centralized database or website that all State resource agencies may use to share resource data during the study?</i></p>
<p>No. A centralized database does not exist at this time. Resource agencies were contacted to provide the necessary resource data.</p>

⁶ FHWA November 2011 publication: <[Traffic Analysis Tools and Methods](#)>

Questionnaire for Transportation Planners – Part 2

This part of the questionnaire should be completed by transportation planners at the end of the transportation planning study. This completed document should become an appendix to the study's final report to document how the study meets the requirements of 23 Code of Federal Regulations § 450.212 or § 450.318.

Purpose and need for this study

How did the study process define and clarify corridor-level or subarea-level goals (if applicable) that influenced modal infrastructure improvements and/or the range of reasonable alternatives?

The study process defined the corridor-level goals that influenced the range of reasonable alternatives by examining the existing conditions (i.e. Socioeconomic, Topographic, Transportation Infrastructure and Environmental) and future conditions (i.e. Land Use Plans, Future Socioeconomic, and Planned Transportation Infrastructure) of the study area and surrounding communities. The information was then presented to the public for comment and opinion. Using the comments from the public and the project Transportation Advisory Committee (TAC), various alternatives were generated and evaluated against reasonable criteria.

What were the key steps and coordination points in the decision-making process? Who were the decision-makers and who else participated in those key steps?

The key steps and coordination points for the decision-making process included an outreach process to obtain input from the project TAC, various stakeholders for the project, and the public. The study included recurring TAC meetings in which the information gathered by the consultant was discussed and evaluated. See Attachment A to the PEL checklist for a complete list of the decision makers.

How should this study information be presented in future NEPA document(s), if applicable? Are relevant findings documented in a format and at a level of detail that will facilitate reference to and/or inclusion in subsequent NEPA document(s)?⁷

The information included in this study should be presented in future NEPA documents by referencing the public involvement and the interagency coordination that took place. The study team conducted two public open house meetings that consisted of presentations and Q&A sessions. The first public meeting addressed the need for improvements to the existing facilities and the timing of those improvements. Information presented at the second public meeting focused on the identification and preliminary evaluation of alternatives. In addition, the interagency coordination and the alternative identification/evaluation on the study should be presented in future NEPA documents.

Were the study's findings and recommendations documented in such a way as to facilitate an FHWA or Federal Transit Administration decision regarding acceptability for application in the NEPA process? Does the study have logical points where decisions were made and where concurrence from resource or regulatory agencies, stakeholders, and the public was sought? If so, provide a list of those points.

Yes; the study's findings were documented in such a way as to facilitate an FHWA decision regarding acceptability for application in the NEPA process. The study has logical points where decisions were made and where concurrence from regulatory agencies, stakeholders, and public was sought.

1. TAC Meeting No. 1 Project Kickoff Meeting
2. TAC Meeting No. 2 Discussion and concurrence regarding the information presented in Existing Conditions Working Paper No.1
3. TAC Meeting No. 3 Discussion and concurrence regarding the information presented in Future Conditions Working Paper No.2
4. Public Meeting No. 1 Presentation and public comment on Future and Existing Conditions for study*
5. TAC Meeting No. 4 Discussion and concurrence regarding Public Meeting No. 1 and Corridor Alternatives Working Paper No.3
6. Public Meeting No. 2 Presentation and public comment on study findings.*

*See Appendix G and H of the Yuma Expressway Final report for full public meeting summaries

⁷ For an explanation of the types of documents needed under the NEPA process and the nature of the content of those documents, please see "NEPA Documentation: Improving the Quality of Environmental Documents," <[Documentation](#)>.

Establishment of organizational relationships – tribes and agencies⁸			
Tribe or agency	Date(s) contacted	Describe level of participation	Describe the agency's primary concerns and the steps needed to coordinate with the agency during NEPA scoping.⁹
<i>Tribal</i>			
Quechan Tribe (of Fort Yuma Indian Reservation)	Throughout the study. Included on all TAC distributions Feb 2012 – Feb 2013	TAC member. Limited attendance to meetings and few comments to study documents	No concerns were noted by Quechan Tribe. Continue outreach to Quechan Tribe during NEPA scoping and alternative impact analyses. Consultation during Section 106 process
Cocopah Indian Tribe	Throughout the study. Included on all TAC distributions Feb 2012 – Feb 2013	TAC member. Attended meetings on a regular basis	No concerns were noted by Cocopah Indian Tribe. Continue outreach to Cocopah Indian Tribe during NEPA scoping and alternative impact analyses. Consultation during Section 106 process
<i>Federal</i>			
Bureau of Land Management	September 2012 via stakeholder scoping letter	No comments received	None. Continued outreach during future studies and NEPA scoping.
Bureau of Reclamation	September 2012 via stakeholder scoping letter	No comments received	None. Continued outreach during future studies and NEPA scoping.
Federal Highway Administration	Throughout the study. Included on all TAC distributions Feb 2012 – Feb 2013	TAC member. Limited attendance to meetings and few comments to study documents	None. Continued outreach during future studies and NEPA scoping.
MCAS	Throughout the study. Included on all TAC distributions Feb 2012 – Feb 2013	TAC member. Attended meetings on a regular basis. Had comments on all documents	Primary concerns involve potential impacts to MCAS and Barry Goldwater Range. Continued involvement with MCAS
U.S. Border Patrol	September 2012 via stakeholder scoping letter	No comments received	None. Continued outreach during future studies and NEPA scoping.
<i>State</i>			
Arizona Game and Fish Department	Throughout the study. Included on all TAC distributions Feb 2012 – Feb 2013	TAC member. Attended meetings on a regular basis. Had comments on all documents	Primary concerns involve potential impacts to existing endangered species and habitats. Continued involvement with Game and Fish
Arizona Department of Transportation	Throughout the study. Included on all TAC distributions Feb 2012 – Feb 2013	TAC member. Attended meetings on a regular basis. Had comments on all documents	None. Continued outreach during future studies and NEPA scoping.
California Department of Transportation	Throughout the study. Included on all TAC distributions Feb 2012 – Feb 2013	TAC member. Attended meetings on a regular basis. Had comments on all documents	Impacts to traffic in California and Interstate 8 connection Continued outreach during future studies and NEPA scoping.

⁸ Users may add rows to this table to accommodate additional tribes and agencies. Unused rows may be deleted.

⁹ If the transportation planning study final report does not adequately document interactions (for example, meeting minutes, resolutions, letters) with the relevant agencies, append such information to the end of this questionnaire and checklist.

Establishment of organizational relationships – tribes and agencies⁸			
Tribe or agency	Date(s) contacted	Describe level of participation	Describe the agency's primary concerns and the steps needed to coordinate with the agency during NEPA scoping.⁹
County			
Yuma County	Throughout the study. Included on all TAC distributions Feb 2012 – Feb 2013	TAC member. Attended meetings on a regular basis. Had comments on all documents	Primary concerns involve implementation process Continued involvement with Yuma County
Local			
Yuma Mesa Irrigation and Drainage District	September 2012 via stakeholder scoping letter	Provided comments on study	There is no need for the project. The route is too far south of City for traffic to use. District facilities will be impacted by construction. Operations will be impacted by delays required to cross road. Loss of income if land is taken out of production. Existing Irrigation infrastructure is in need of repair. Money would be better spent on restoration rather than roads. Continued outreach to Yuma Mesa Irrigation and Drainage District during NEPA scoping and project development
Yuma County Water Users Association	September 2012 via stakeholder scoping letter	Provided comments on study	Impacts to existing YCWUA and Bureau of Reclamation infrastructure. Impacts to operation activities. Safety concerns with agriculture equipment and traveling public. Reduction in farmland. Safety concerns with hazardous materials that would be transported. Continued outreach
City of Yuma	Throughout the study. Included on all TAC distributions Feb 2012 – Feb 2013	TAC member. Attended meetings on a regular basis. Had comments on all documents	Primary concern is future need for the facility. Continued outreach to City of Yuma.
City of Somerton	Throughout the study. Included on all TAC distributions Feb 2012 – Feb 2013	TAC member. Attended meetings on a regular basis.	Primary concern is possible impacts to City of Somerton Continued outreach to City of Somerton.
City of San Luis	Throughout the study. Included on all TAC distributions Feb 2012 – Feb 2013	TAC member. Attended meetings on a regular basis.	Primary concern is possible impacts to City of San Luis Continued outreach to City of San Luis.
Transportation agencies			
Yuma Metropolitan Planning Organization (YMPO)	Throughout the study. Included on all TAC distributions Feb 2012 – Feb 2013	TAC member. Attended meetings on a regular basis. Had comments on all documents	Primary concern is the overall transportation planning for the region Continued outreach to YMPO
Imperial County Transportation Commission (ICTC)	Throughout the study. Included on all TAC distributions Feb 2012 – Feb 2013	TAC member. Attended meetings on a regular basis. Had comments on documents	Primary concern is the potential impact of a new transportation facility on the overall transportation planning for Imperial County, California. Continued outreach to ICTC

Establishment of organizational relationships – stakeholders and members of the public¹⁰			
Public and stakeholders	Date(s) contacted	Describe level of participation	Describe the primary concerns expressed by members of the public and stakeholders.
Public			
Members of the public	September 2012 January 2012	Public meeting attendance	What is the need for the facility? The negative impacts on the existing agriculture. The negative impacts to existing residential and commercial development
Stakeholders			
Yuma County Farm Bureau	September 2012 via stakeholder scoping letter	No comments received	None. Continued outreach during future studies and NEPA scoping.
Yuma Airport Authority	September 2012 via stakeholder scoping letter	No comments received	None. Continued outreach during future studies and NEPA scoping.
Arizona Public Service (APS) SW Division	September 2012 via stakeholder scoping letter	No comments received	None. Continued outreach during future studies and NEPA scoping.
Western Area Power Administration	September 2012 via stakeholder scoping letter	No comments received	None. Continued outreach during future studies and NEPA scoping.
Greater Yuma Port Authority	September 2012 via stakeholder scoping letter	No comments received	None. Continued outreach during future studies and NEPA scoping.
Yuma Fresh Vegetables Association	September 2012 via stakeholder scoping letter	No comments received	None. Continued outreach during future studies and NEPA scoping.
Yuma County Airport Authority	September 2012 via stakeholder scoping letter	No comments received	None. Continued outreach during future studies and NEPA scoping.
Greater Yuma Economic Development Corporation	September 2012 via stakeholder scoping letter	No comments received	None. Continued outreach during future studies and NEPA scoping.

Planning assumptions and analytical methods
<i>Did the study provide regional development and growth assumptions and analyses? If so, what were the sources of the demographic and employment trends and forecasts?</i>
Yes; the study provided regional development and growth assumptions and analyses. The sources were from US census data and growth factors from the YMPO transportation model.
<i>What were the future-year policy and/or data assumptions used in the transportation planning process related to land use, economic development, transportation costs, and network expansion?</i>
The assumptions used in the planning process were that the study area will go through a slow change in land use, economic development will continue to occur in southwestern Yuma County, the cost of transportation will increase, and the City of Yuma existing planning documents show expansion to the roadway network.

¹⁰ Users may add rows to this table to accommodate additional stakeholders.

<p><i>Were the planning assumptions and the corridor vision/purpose and need statement consistent with each other and with the long-range transportation plan? Are the assumptions still valid?</i></p> <p>Yes; the planning assumptions and the corridor purpose and need statement are consistent with each other and the long-range transportation plan. However, the study anticipates a change in land use over many years which will cause the need for additional study in the future.</p>
<p>Data, information, and tools</p>
<p><i>Are the relevant data used in the study available in a compatible format that is readily usable? Are they available through a centralized web portal?</i></p> <p>No; the data was gathered from many sources and inserted into the report. The data is not available through a centralized web portal.</p>
<p><i>Are the completeness and quality of the data consistent with the quality (not scale or detail) of inputs needed for a NEPA project-level analysis¹¹?</i></p> <p>Yes</p>
<p><i>Are the data used in the study regularly updated and augmented? If regularly updated, provide schedule and accessibility information.</i></p> <p>No; the data will only be updated as each responsible agency conducts new studies or updates its planning documents.</p>
<p><i>Have the environmental data been mapped at scales that facilitate comparison of effects across different resources and at sufficient resolution to guide initial NEPA issue definition? If not, what data collection and/or manipulation would likely be needed for application to the NEPA scoping process?</i></p> <p>Yes, the environmental data has been mapped at a scale that would facilitate a comparison of effects across different resources and at sufficient resolution to guide initial NEPA issue definition.</p>

¹¹ For an explanation of the types of information needed to evaluate impacts in environmental documents, please see FHWA's "NEPA and Transportation Decisionmaking: Impacts," <[Analysis of Impacts](#)>. This website provides links to six additional resources and guidance that should be helpful in understanding the types of impacts that need to be assessed, their context, and their intensity.

Examine the Checklist for Environmental Planners, at the back of this document, for more detail about potential impacts that could be mapped. Below is an abbreviated list of resources that could occur in the study area and may be knowable at this time and at the study's various analytical scales:

Resource or issue	Is the resource or issue present in the area?	Would any future transportation policies or projects involve the issue? Would there be impacts on the resource?	Resource or issue	Is the resource or issue present in the area?	Would any future transportation policies or projects involve the issue? Would there be impacts on the resource?
Sensitive biological resources	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Section 4(f) ¹² wildlife and/or waterfowl refuge, historic site, recreational site, park	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
Wildlife corridors	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Section 6(f) ¹³ resource	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
Wetland areas	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Existing development	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
Riparian areas	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Planned development	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
100-year floodplain	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Title VI/ Environmental Justice populations ¹⁴	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
Prime or unique farmland or farmland of statewide or local importance	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Utilities	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
Visual resources	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Hazardous materials	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
Designated scenic road/byway	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Sensitive noise receivers ¹⁵	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
Archaeological resources	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Air quality	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
Historical resources	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Other (list) _____	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable

¹² Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 U.S. Code § 303, as amended); see <[Section 4\(f\)](#)>.

¹³ Section 6(f) of the Land and Water Conservation Fund Act

¹⁴ refers to Title VI of the 1964 Civil Rights Act and 1994 Executive Order 12898 on environmental justice

¹⁵ under FHWA's Noise Abatement Criterion B: picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals

Did the study incorporate models of, for example, species/habitat locations (predictive range maps), future land use, population dynamics, stormwater runoff, or travel demand? What models were used? Did the study adequately document what models were used, who was responsible for their use, and how they were used (with respect to, for example, calibration, replicability, contingencies, and exogenous factors)?

No models were created within the study. The existing YMPO travel demand model was used as the basis for predicting the future traffic within the study area. No other models were used during the study. The study report does document these points.

In scoping, conducting, and documenting the planning study, participants have come across documents and leads from agency staff and other sources that the environmental planners may be able to use in conducting their studies. List any applicable memoranda of understanding, cost-share arrangements, programmatic agreements, or technical studies that are underway but whose findings are not yet published, etc.

None

Development of alternatives

Were resource agencies, stakeholders, and members of the public engaged in the process of identifying, evaluating, and screening out modes, corridors, a range of alternatives,¹⁶ or a preferred alternative (if one was identified—the latter two refer to corridor plans)? If so, how? Did these groups review the recommendation of a preferred mode(s), corridor(s), range of alternatives (including the no-build alternative), or an alternative? Were the participation and inputs of these groups at a level acceptable for use in purpose and need statements or alternatives development sections in NEPA documents? If not, why not?

Yes; resource agencies, stakeholders, and members of the public were engaged in the process of identifying a preferred alternative. The resource agencies and stakeholders discussed possible alternatives and criteria that could be used to evaluate the alternatives. These groups did review the proposed preferred alternative. Using the criteria and the public input from two public meetings, a preferred alternative was recommended. The participation and input from these groups is at a level acceptable for use in an alternative development section in a NEPA document.

Describe the process of outreach to resource agencies, the public, and other stakeholders. Describe the documentation of this process and of the responses to their comments. Is this documentation adequate in breadth and detail for use in NEPA documents?

The process of outreach for the resource agencies was in the form of reviewing project documents and issuing comments. The comment resolutions were included in the TAC meeting minutes. The public comments were collected and combined in the public meeting summary report. The stakeholder comments were included as formal letters. This documentation is acceptable for use in NEPA documents. Responses to stakeholder comments were not created.

If the study was a corridor study, describe the range of alternatives considered (if any), screening process, and screening criteria. Include what types of alternatives were considered (including the no-build alternative) and how the screening criteria were selected. Was a preferred alternative selected as best addressing the identified transportation issue? Are alternatives' locations and design features specified?

The corridor study included and identified multiple alternatives, which ranged from a No Build Alternative to a Freeway Build Alternative. The build alternatives were located either on top of the existing roadways or along a new corridor parallel to Ave D and Co 14th Street. Two evaluation matrices were used to score and evaluate alternatives. The screening criteria includes impacts to future traffic capacity, impacts to existing residences, impacts to existing agriculture, impacts to MCAS-Yuma Airport, access/frontage roads/duplication of facility type, environmental impacts, benefits to safety, cost, consistency with City of Yuma approved plans, implementation, right-of-way impacts, benefit to cross region travel times, and Colorado River constraints from Safety to impacts with existing residential development. The screening criteria were drafted/selected by the transportation planner based upon TAC discussions and reviews. A preferred alternative was recommended based upon the criteria established, the anticipated future capacity restrictions, and input from the TAC, other stakeholders, and the public. The alternative location and design features are documented in the study report.

¹⁶ For an explanation of the development of alternatives in environmental documents, please see FHWA's "NEPA and Transportation Decisionmaking: Development and Evaluation of Alternatives," <[Alternatives](#)>.

<p><i>Also regarding whether the study was a corridor study, for alternatives that were screened out, summarize the reasons for their rejection. Are defensible, credible rationale articulated for their being screened out? Did the study team take into account legal standards¹⁷ needed in the NEPA process for such decisions? Did the study team have adequate information for screening out the alternatives?</i></p>
<p>The alternatives that were screened out were due to large impacts to existing residential development, impacts to MCAS expansion plans, inconsistency with approved plans, maintenance of access issues, implementation issues, cost, safety, environmental impacts, and agriculture impacts. The reasons are defensible and the rationale is explained in the study report. Yes; the team had adequate information for the screening out process.</p>
<p><i>What issues, if any, remain unresolved with the public, stakeholders, and/or resource agencies?</i></p>
<p>The main issues that remain are when will the project be needed and when will funding be available for additional studies and potential implementation. The study recommends further evaluation as the region grows and traffic increases.</p>
<p>Formally joining PEL with the NEPA process</p>
<p><i>Lead federal agencies proposing a project that will undergo the NEPA process will want to most effectively leverage the transportation planning study's efforts and results. How could a Notice of Intent (for an environmental impact statement¹⁸) refer to the study's findings with respect to preliminary purpose and need and/or the range of alternatives to be studied?</i></p>
<p>The NOI can summarize the findings of the Yuma Expressway Study Final Report relative to the preliminary purpose and need, as well as the alternatives development process.</p>
<p><i>Could a Notice of Intent in the NEPA process clearly state that the lead federal agency or agencies will use analyses from prior, specific planning studies that are referenced in the transportation planning study final report? Does the report provide the name and source of the planning studies and explain where the studies are publicly available? If not, how could such relevant information come to the environmental planners' attention and be made available to them in a timely way?</i></p>
<p>Yes; a NOI could clearly state that the lead federal agency will use analysis from prior, specific planning studies that are referenced in the Yuma Expressway Study Final Report. The report provides the name and sources of the planning studies; however, it does not indicate where the studies are publically available. The relevant information can be gathered from the agencies and sources identified.</p>
<p><i>List how the study's proposed transportation system would support adopted land use plans and growth objectives.</i></p>
<p>At this time the existing land use plans do not support the proposed transportation system. However it is anticipated with the growth rate in the Yuma area and the planned expansion of the MCAS the land use plans will evolve and change.</p>
<p><i>What modifications are needed in the goals and objectives as defined in the transportation study process to increase their efficient and timely application in the NEPA process?</i></p>
<p>No modifications are needed.</p>
<p><i>Jurisdictional delineations of waters of the United States frequently change. Housing and commercial developments can alter landscapes dramatically and can be constructed quickly. Noise and air quality regulations can change relatively rapidly. Resource agencies frequently alter habitat delineations to protect sensitive species. Will the study data's currency, relevance, and quality still be acceptable to agencies, stakeholders, and members of the public for use in the NEPA process? If not, what will be done to rectify this problem? Who will be responsible for any needed updating?</i></p>
<p>The study showed that the possible implementation of a Yuma Expressway is many years away and dependent on more detailed analyses. The study data's currency, relevance, and quality will be acceptable as preliminary information for the NEPA process. However, additional study will be needed using updated information as land use changes occur in the future to determine if proposed transportation improvements, such as a Yuma Expressway, are warranted. The sponsoring agency will be responsible for updating.</p>
<p>Other issues</p>
<p>Are there any other issues a future NEPA study team should be aware of (mark all that apply)? In the space below the check boxes, explain the nature and location of any issue(s) checked.</p>

¹⁷ 23 Code of Federal Regulations (CFR) § 771.123(c), 23 CFR § 771.111(d), 40 CFR § 1502.14(a), 40 CFR § 1502.14(b) and (d), 23 CFR § 771.125(a)(1); see FHWA Technical Advisory T 6640.8A, October 30, 1987, <[FHWA Technical Advisory T 6640.8A](#)>.

¹⁸ While Notices of Intent are required by some federal agencies for environmental assessments, they are optional for FHWA. Please see "3.3.2 Using the Notice of Intent to Link Planning and NEPA," in *Guidance on Using Corridor and Subarea Planning to Inform NEPA* (Federal Highway Administration, April 5, 2011), <[Notice of Intent](#)>.

- | | |
|--|--|
| <input checked="" type="checkbox"/> Public and/or stakeholders have expressed specific concerns | <input type="checkbox"/> Contact information for stakeholders |
| <input type="checkbox"/> Utility problems | <input checked="" type="checkbox"/> Special or unique resources in the area |
| <input checked="" type="checkbox"/> Access or right-of-way issues | <input checked="" type="checkbox"/> Federal regulations that are undergoing initial promulgation or revision |
| <input type="checkbox"/> Encroachments into right-of-way | <input type="checkbox"/> Other _____ |
| <input checked="" type="checkbox"/> Need to engage—and be perceived as engaging—specific landowners, citizens, citizen groups, or other stakeholders | |

Concurrence

By signature, we concur that the transportation planning document meets or exceeds the following criteria in terms of acceptability for application in NEPA projects:

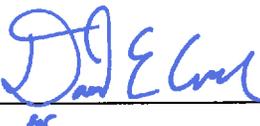
- Public involvement (outreach and level of participation)
- Stakeholder involvement (outreach and level of participation)
- Resource agencies' involvement and participation
- Documentation of the above efforts
- Applicability of the general findings and conclusions for use, by reference, in NEPA documents

Approved by:  Date: 05/08/2013

JENNIFER TOTH
State Engineer
Arizona Department of Transportation

Approved by:  Date: 5/3/13

SCOTT OMER
Director
Multimodal Planning Division, Arizona Department of Transportation

Approved by:  Date: 5/14/13

KARLA PETTY
Division Administrator
Federal Highway Administration

Checklist for Environmental Planners – Part 3

By completing this checklist, environmental planners will be able to systematically evaluate the transportation planning study with regard to environmental resources and issues. It provides a framework for future NEPA studies by identifying those resources and issues that have already been evaluated, and those that have not. The role of environmental planners during the study's various stages is laid out in the flowchart on page 3. This role includes timely advocacy for resources and issues that will later be integral to NEPA processes.

Checklist for environmental planners

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Natural environment				
Sensitive biological resources	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Literature review of USFWS and AGFD Databases. A biological review will need to be performed during the NEPA evaluation.
Wildlife corridors	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Much of the study area is fragmented by farmland. There is a potential for wildlife corridors near the Goldwater Range. Coordination with AZ Game & Fish as early as possible in the development process since identifying potential impacts could take up to two years.
Invasive species	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Invasive species should be evaluated and mitigations identified in the NEPA document.
Wetland areas	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	There are wetlands near the Colorado River. This will require further evaluation during NEPA.
Riparian areas	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	There are riparian areas near the Colorado River. Will require further evaluation during NEPA.
100-year floodplain	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Will require evaluation during NEPA.
Clean Water Act Sections 404/401 waters of the United States	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	An individual 404 permit will be required to construct a bridge across the Colorado River.
Prime or unique farmland	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Corridor 1 has minimal impacts. Moderate impacts are predicted for the other corridors.
Farmland of statewide or local importance	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Will require evaluation during NEPA.

Checklist for environmental planners

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Sole-source aquifers	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Will require evaluation during NEPA.
Wild and scenic rivers	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	Update during NEPA.
Visual resources	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Will require evaluation during NEPA.
Designated scenic road/byway	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Will require evaluation during NEPA.
Cultural resources				
Archaeological resources	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Will require evaluation during NEPA.
Historical resources	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Will require evaluation during NEPA.
Section 4(f) and Section 6(f) resources				
Section 4(f) wildlife and/or waterfowl refuge	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Will require evaluation during NEPA.
Section 4(f) historic site	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Will require evaluation during NEPA.
Section 4(f) recreational site	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	City parks and recreational sites are located in the area. The current alignments avoid the parks . Will require evaluation during NEPA.
Section 4(f) park	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	City parks and recreational sites are located in the area. The current alignments avoid the parks . Will require evaluation during NEPA.
Section 6(f) resource	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Will require evaluation during NEPA.

Checklist for environmental planners

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Human environment				
Existing development	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	The area is growing. Development impacts will need to be re-evaluated during NEPA.
Planned development	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	The area is growing. Development impacts will need to be re-evaluated during NEPA.
Displacements	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Some displacements are likely but will be dependent on future development.
Access restriction	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	The level of access restriction will depend on future development and will need to be evaluated during NEPA.
Neighborhood continuity	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	The preferred alternative impacts agricultural lands. The affects to neighborhood continuity will depend on future development and will need to be evaluated during NEPA.
Community cohesion	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	The community will be affected. Good planning practices that include identification of the proposed corridor can minimize impacts to the community.
Title VI/Environmental justice populations	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Will require re-evaluation during NEPA.
Physical environment				
Utilities	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	
Hazardous materials	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Hazardous materials will need to be evaluated during NEPA.
Sensitive noise receivers	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Noise impacts will need to be impacted during NEPA.
Air quality	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Air quality impacts would similar for all the alternatives. This issue will need to be evaluated during NEPA.
Other (list)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	

Identification of potential environmental mitigation activities
<i>Could the transportation planning process be integrated with other planning activities, such as land use or resource management plans? If so, could this integrated planning effort be used to develop a more strategic approach to environmental mitigation measures?</i>
This study can be used to inform regional planning activities, with the recognition that the project need doesn't fully develop until the 2045-50 timeframe.
<i>With respect to potential environmental mitigation opportunities at the PEL level, who should ADOT consult with among federal, State, and local agencies and tribes and how formally and frequently should such consultation be undertaken?</i>
Given the long time horizon of this project, it is premature to identify mitigation. The need for this project should be updated in the future. If the need moves up the Arizona Game & Fish Department should be contacted to discuss the potential need for a wildlife corridor near the Goldwater Range and, if necessary a schedule of steps that may be needed to evaluate this issue.
<i>Off-site and compensatory mitigation areas are often creatively negotiated to advance multiagency objectives or multiple objectives within one agency. Who determined what specific geographic areas or types of areas were appropriate for environmental mitigation activities? How were these determinations made?</i>
It is premature to discuss compensatory mitigation for this project.
<i>To address potential impacts on the human environment, what mitigation measures or activities were considered and how were they developed and documented?</i>
Given the potential for development in this area and the long time horizon of this project it is premature to discuss mitigation measures related to the human environment.

Prepared by: Thor Anderson Date: 3 May 2013

PEL Program Manager

Multimodal Planning Division, Arizona Department of Transportation

Attachment A: Technical Advisory Committee: Yuma Expressway (PARA) Study

Name	Organization	Title	Address	City/State/Zip	Phone	email
Study Area Representatives						
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