Northern Parkway/ Tonopah Parkway Corridor Feasibility Study

Contract 2010-004
Project TT005

FINAL
Technical Memorandum 2
Environmental Overview

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1. INTRODUCTION

Technical Memorandum 2 (TM 2), entitled *Environmental Overview* (EO), focuses on environmental resources within and adjacent to the project study area for the *Northern Parkway: Tonopah Parkway to Turner Parkway and Tonopah Parkway: Northern Parkway to Interstate 10 Corridor Feasibility Study* (hereafter referred to as the *Northern Parkway/Tonopah Parkway CFS*, or "the project"). The purpose of an EO is to identify known environmental issues, constraints, and potential opportunities early in the project development stages. An EO is not intended to meet the needs of a National Environmental Policy Act (NEPA) environmental clearance document. Additional detailed information about the project is included in the following companion documents: *Existing and Future Corridor Features* (TM 1), *Conceptual Drainage Report* (TM 3), *Development and Evaluation of Candidate Alternative Alignments* (TM 4), and *Detailed Preferred Alignment* (TM 5).

1.1 Background and Study Need

In July 2008, the Maricopa Association of Governments (MAG) completed the *Interstate 10/Hassayampa Valley Transportation Framework Study* (known as the *Hassayampa Framework Study*), that recommended a comprehensive roadway network to meet the future traffic demands that result when the area west of the White Tank Mountains is completely developed (hereafter referred to as buildout travel demand). This long-range regional transportation network includes the "Arizona Parkway" as a new facility type to supplement more traditional roadway classifications in meeting projected travel demand.

The Arizona Parkway utilizes a distinct intersection treatment that prohibits left turns at major cross-street intersections and controls intersection traffic movements with two-phased traffic signal control. Left-turn movements are made indirectly using directional left-turn crossovers in the median immediately downstream of cross-street intersections.

The *Hassayampa Framework Study* demonstrated the need for both Northern Parkway and Tonopah Parkway. Although today's land development and travel demands in the project study area do not warrant major new high capacity roadways in the near-term future, the buildout forecast for future land development and travel demands does warrant major new high capacity roadways in the long-term future. Plans are already underway to convert some of the vacant lands within the project study area to land uses that will generate future traffic.

To preserve sufficient public right-of-way for the future Northern Parkway and Tonopah Parkway, the planning process needs to identify right-of-way requirements for buildout conditions. This study is the first step in the roadway development process and is meant to aid the governing bodies in defining and protecting a continuous future roadway corridor that can accommodate buildout traffic demands in the project study area.

The project scope of work for this study includes the tasks necessary to prepare a corridor feasibility report that will provide the Maricopa County Department of Transportation (MCDOT), the Town of Buckeye, area property owners, developers, and other stakeholders with a planning tool for future growth and development that will lead to the preservation of a 200-foot wide right-of-way corridor to accommodate the typical Arizona Parkway design. This will require significant coordination with various governing bodies, other public agencies, development interests, and the general public.

1.2 Project Study Area

The project study area includes the planned Northern Parkway, an east-west corridor centered on the Northern Avenue section line, from the planned Tonopah Parkway (411th Avenue alignment) to the planned Turner Parkway (267th Avenue alignment). The Northern Parkway corridor within the project study area is approximately 18 miles long and two miles wide. This section of Northern Parkway is referred to as the Northern Parkway Hassayampa section to distinguish it from other planned Northern Parkway sections east of the White Tank Mountains.

The project study area also includes the planned Tonopah Parkway, a north-south corridor centered on the 411th Avenue section line, from Interstate 10 (I-10) to the planned Northern Parkway. The Tonopah Parkway corridor within the project study area is approximately 3.75 miles long and two miles wide.

Figure 1 shows the project location in the context of the State of Arizona. The project study area boundaries are shown in **Figure 2**.

The Township (T), Range (R), and Section information associated with the project study area includes:

- T3N R7W Sections 35-36;
- T3N R6W Sections 31-36;
- T3N R5W Sections 31-36;
- T3N R4W Sections 31-35;
- T2N R7W Sections 1-2, 11-14, 23-24;
- T2N R6W Sections 1-6;
- T2N R5W Sections 1-6; and
- T2N R4W Sections 2-6.

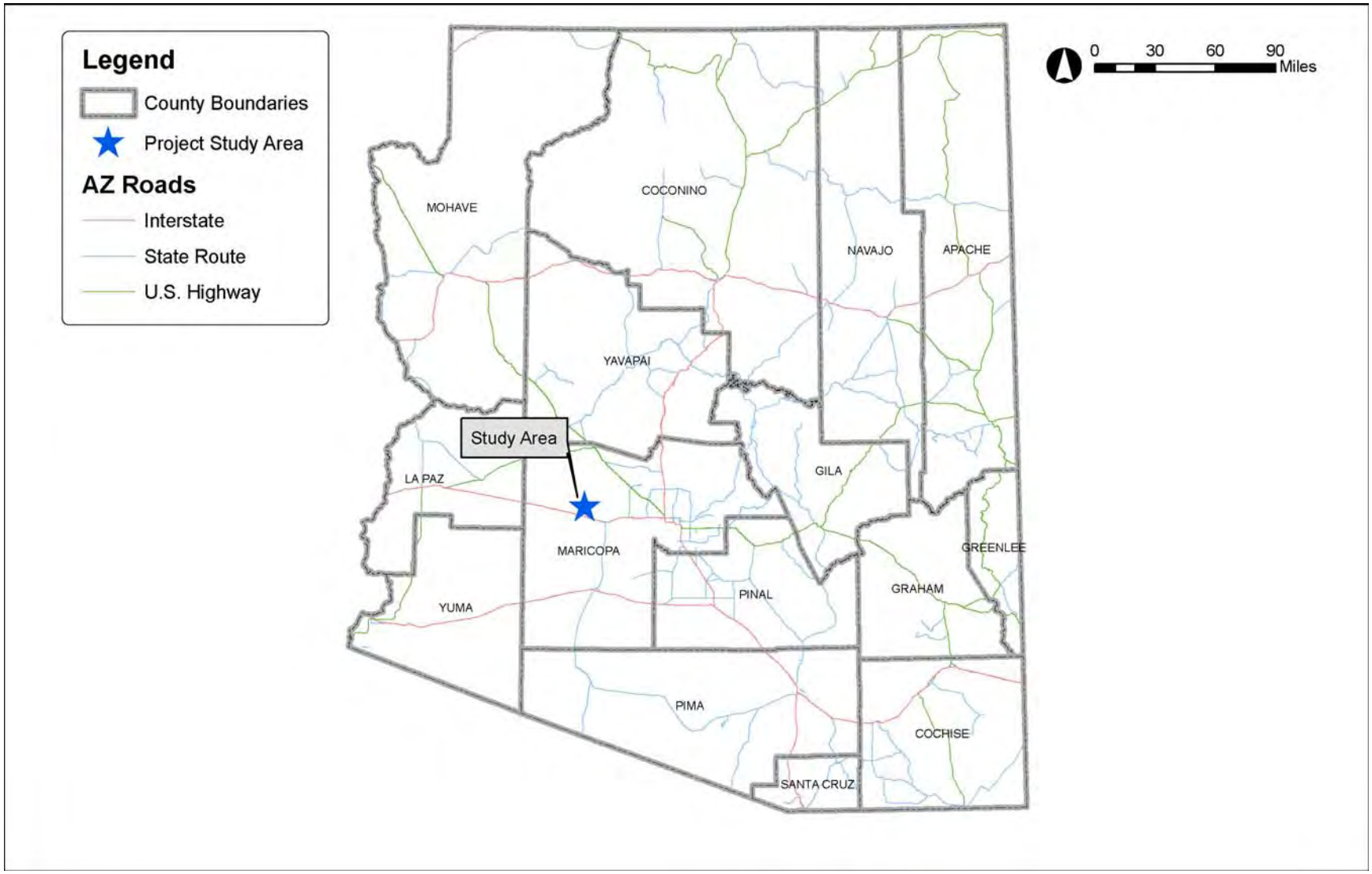

Figure 1 – Statewide Map

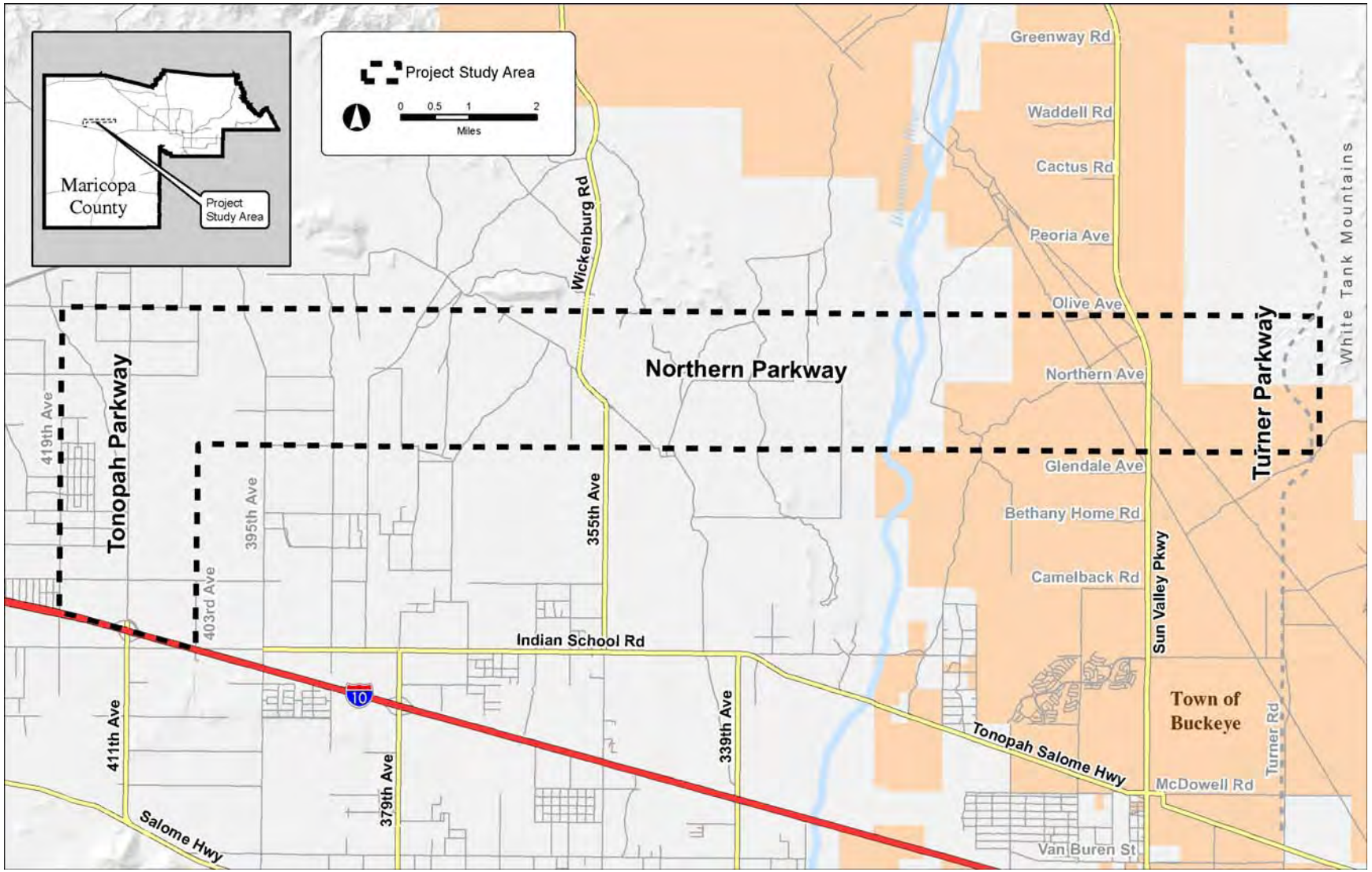

Figure 2 – Project Study Area

2. GENERAL INFORMATION

This EO includes descriptions of the existing environmental resources within the project study area, including the built environment, socioeconomic conditions, and natural, cultural and Section 4(f) and 6(f) resources. This EO also contains potential known environmental issues, constraints, and opportunities within the project study area and will serve as a planning tool during alignment alternatives development and evaluation.

2.1 Land Jurisdiction

The entire project study area is located within Maricopa County. Maricopa County has jurisdiction over the majority of the land and roadways within the project study area. The Town of Buckeye has jurisdiction over the land within its town limits adjacent to and within the project study area. Portions of the project study area currently under Maricopa County jurisdiction are also within the Buckeye Municipal Planning Area.

Jurisdictional boundaries are illustrated in **Figure 3**, as per the Geographic Information Systems (GIS) data provided by the Public Works Department of Maricopa County in May 2009.

Tonopah, an unincorporated community, lies within the western portion of the project study area. While the most recent attempt to incorporate in 2009 failed, any future attempt that does succeed would result in an additional governing body with jurisdiction over land within the project study area.

2.2 Land Ownership and Use

The project study area contains a mix of both public and private lands. Over 81 percent of the land in the project study area is privately owned. Public land owners in the project study area include the Arizona State Land Department (ASLD), which owns 16 percent of the project study area, and the Bureau of Land Management (BLM), which owns 2 percent of the project study area. Land ownership in the project study area is shown in **Figure 4**, as per the GIS data provided by the Public Works Department of Maricopa County in May 2009.

The predominant existing land use within the project study area is vacant land. There are a few clusters of residential and agricultural uses located between 379th Avenue and 419th Avenue within the project study area. The only public land use is a service yard owned by the Arizona Department of Transportation (ADOT), located in the southwest portion of the project study area, near the 411th Avenue and Camelback Road intersection. There are a few commercial land uses located directly south and east of the project study area near the intersection of I-10 and 411th Avenue. There are currently no schools or places of worship within the project study area.

According to the MAG general plan GIS data provided by the Public Works Department of Maricopa County, the existing vacant land within the project study area is anticipated to be converted to primarily residential land use at buildout. Most of the project study area land west of 371st Avenue is planned to have single family low density residential uses, while the land to the east of 371st Avenue is planned to have higher density residential uses. Single family low density is described by the Draft MAG Land Use Classification as less than or equal to 1 dwelling unit per acre. Single family high density is classified as more than 4 dwelling units per acre. There are also large patches of land that are designated as future retail, office, and industrial land uses at major intersections throughout the project study area east of 371st Avenue. These future land use patterns follow the land use plans for the large master planned communities in this region.

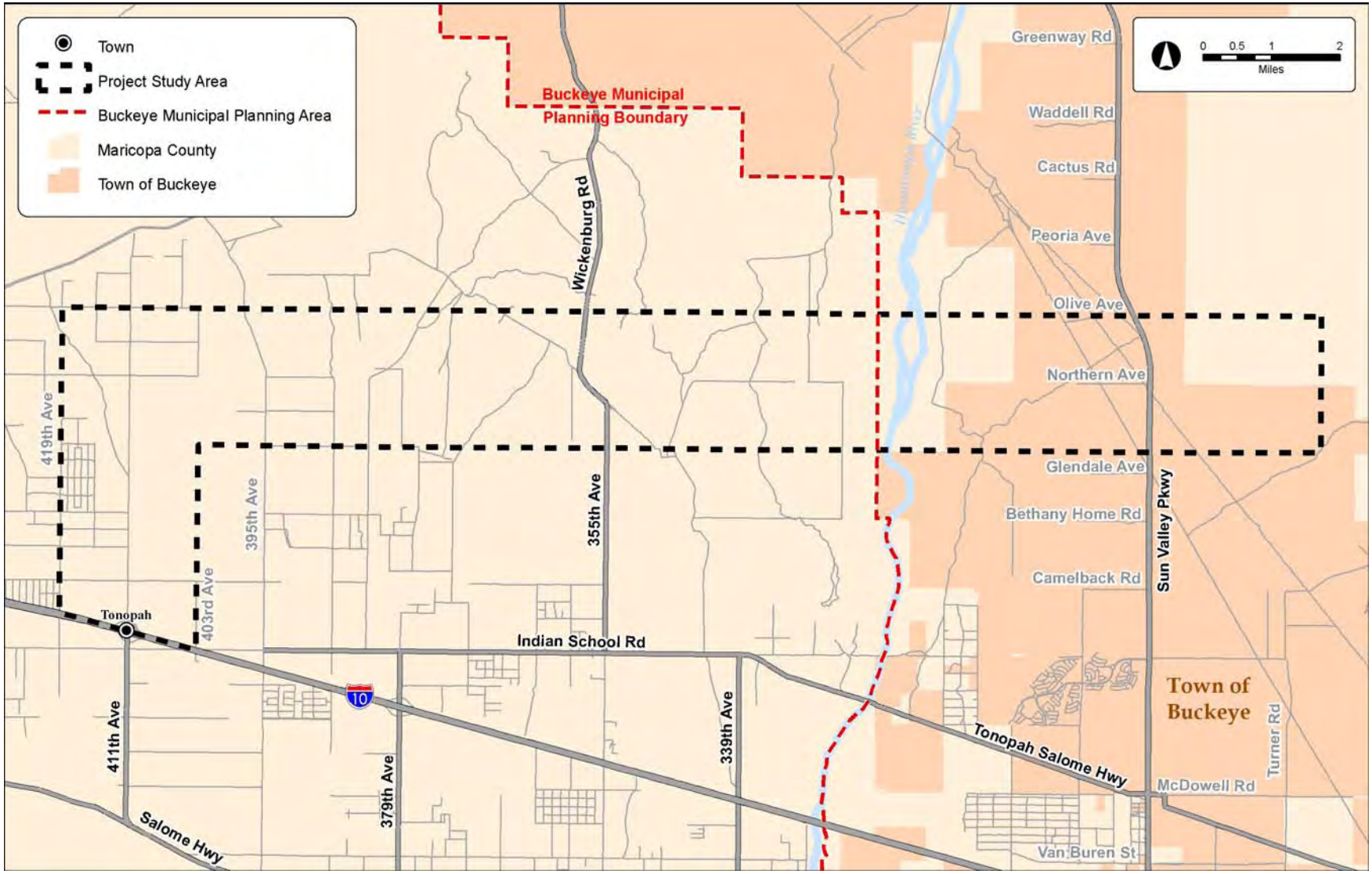

Figure 3 – Jurisdictional Boundaries

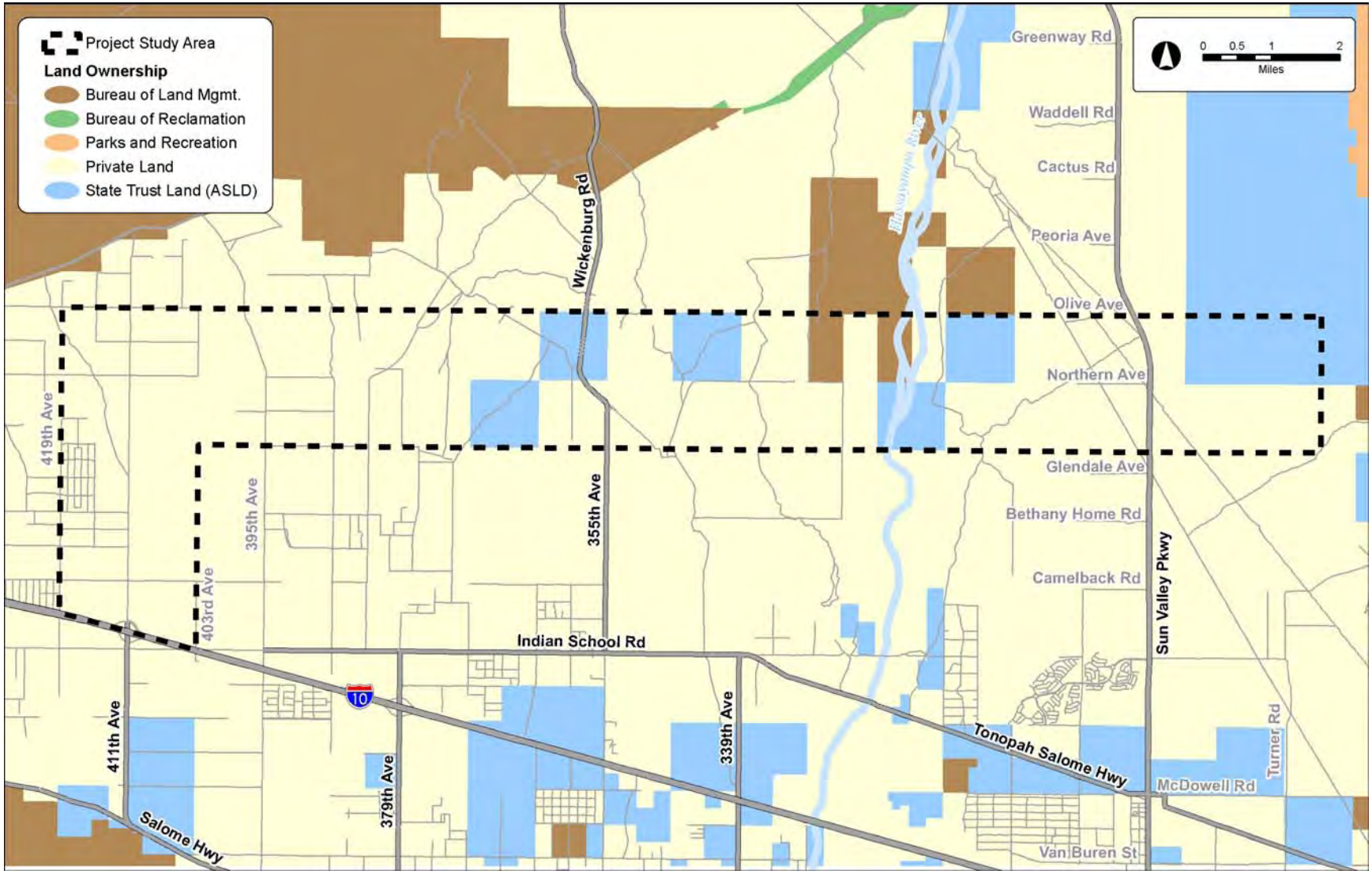

Figure 4 – Land Ownership

2.3 Socioeconomic Considerations and Title VI/Environmental Justice Populations

The purpose of a socioeconomic analysis is to describe the existing social conditions within the project study area and identify populations that may require additional consideration during future NEPA studies. Socioeconomic analyses are also used to identify environmental justice populations that may experience disproportionate adverse impacts from a project.

Environmental justice populations are minority populations that are protected by Title VI and Executive Order 12898. Title VI of the Civil Rights Act of 1964 and Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, issued February 11, 1994, require federally-funded projects to include identification of any disproportionately high and adverse human health effects from environmental impacts on minority and low-income people. These federal regulations also ensure that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination as a result of, proposed projects on the basis of race, color, age, sex, disability, income level, or national origin.

Disproportionately high and adverse effects on minority or low-income populations can be defined as an adverse effect that (1) is predominantly borne by a minority or low-income population; or (2) will be suffered by the minority or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or the non-low-income population. For the purpose of social impact analyses for minority and low-income populations, disproportionate adverse impacts are likely to occur when the minority or low-income population is either 50 percent or greater than the total population for the block group, or is more than double the percentage of the population within the comparative county (Maricopa County). Protected populations that are 50 percent or greater than the total population for the block group, or more than double the percentage of the population within the comparative county, are represented by shaded cells in **Table 1, Table 2,** and **Table 3**.

The United States (U.S.) Census Bureau Decennial 2000 databases were utilized to determine the composition of the populations within the project study area vicinity. For the purposes of this EO, the project study area population is comprised of the Town of Buckeye and Maricopa County. The block groups associated with the project study area are much larger than the project study area boundaries; however, they represent the project study area population likely to be affected by a project. **Table 1** illustrates the racial and ethnic demographics for the project study area. **Table 2** illustrates elderly, low-income, disabled, and female head of household populations (referred to as Title VI/Environmental Justice Populations) for the project study area.

On August 11, 2000, the President signed Executive Order 13166, "Improving Access to Services for Persons with Limited English Proficiency." The Executive Order requires Federal agencies to examine the services they provide, identify any need for services to those with limited English proficiency (LEP), and develop and implement a system to provide those services so LEP persons can have meaningful access to them. It is expected that agency plans will provide for such meaningful access consistent with, and without unduly burdening, the fundamental mission of the agency. The Executive Order also requires that the Federal agencies work to ensure that recipients of Federal financial assistance provide meaningful access to their LEP applicants and beneficiaries. **Table 3** illustrates the LEP populations for the project study area.

As depicted in **Table 1**, the total minority population (28 percent) in the project study area is lower than the minority populations in Arizona, Maricopa County, and the Town of Buckeye (49 percent, 34 percent, and 42 percent, respectively). Census Tract (CT) 506.03, Block Group (BG)

1 has a higher American Indian and Alaska Native population (7 percent) than the State of Arizona, Maricopa County, and the Town of Buckeye.

As depicted in **Table 2**, CT 506.03, BG 1 has a higher percentage of elderly (17 percent), low-income (17 percent), and disabled (17 percent) than Maricopa County. CT 506.03, BG 2 has a higher amount of low-income (28 percent) and disabled (23 percent) than Maricopa County. All of the census tracts within the project study area have a lower percentage of female households than Maricopa County.

As depicted in **Table 3**, CT 506.03, BG 2 has a higher population of LEP (14 percent) than Maricopa County. CT 506.02, BG 2 and CT 506.03, BG 1 are both lower than Maricopa County.

While most of the Title VI/Environmental Justice and LEP population percentages are comparable to both the State and County population percentages and do not exceed either of the two thresholds described above, the American Indian and Alaska Native population percentage in CT 506.03, BG 1, the Low-Income population percentage in CT 506.03, BG 2, and the LEP population percentage in CT 506.03 BG2 are at least double the respective population percentages of the County.

Because this is a corridor feasibility study and the detailed roadway alignment, right-of-way requirements, and project schedules are unknown, exact impacts cannot be determined at this time. General impacts such as additional right-of-way acquisitions, increases in ambient noise levels, socioeconomic impacts, community disruptions, and residential displacements can be assumed with a major roadway project. In addition, it can be assumed that a new roadway within the project study area will enhance overall mobility, benefiting those living in and around the project study area.

It should be noted that the Title VI/Environmental Justice and LEP population numbers and percentages cover an area that is larger than the anticipated roadway footprint, and that the impacts to disadvantaged populations could change depending on the location of the proposed roadway alignment within the project study area. Therefore, further consideration for these disadvantaged populations may be warranted for future environmental clearance documents.

Table 1 – Racial and Ethnic Demographics for the Study Area – Decennial 2000 Census

Area/Census Tract Block Group	Total Population	Population of One Race/ Not Hispanic or Latino*						Population of Two or More Races/ Not Hispanic or Latino*	Hispanic or Latino* Of Any Race	Total Minority Population
		White	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Other			
Arizona	5,130,632	3,871,715 75%	154,316 3%	253,542 4%	91,223 1%	6,166 0.1%	597,173 11%	156,497 3%	1,295,317 25%	2,554,234 49%
Maricopa County	3,072,149	2,033,420 66%	106,204 3%	45,466 1%	64,757 2%	3,344 0%	4,076 0%	51,549 2%	763,333 25%	1,038,729 34%
Town of Buckeye	6,417	3,741 58%	233 4%	47 1%	40 1%	0 0%	0 0%	68 1%	2,288 36%	2,676 42%
CT 506.02, BG 2	2,721	2,129 78%	29 1%	18 1%	27 1%	0 0%	0 0%	52 2%	466 17%	592 22%
CT 506.03, BG 1	350	273 78%	0 0%	26 7%	0 0%	0 0%	0 0%	0 0%	51 15%	77 22%
CT 506.03, BG 2	1,663	1,026 0%	24 0%	25 0%	0 0%	0 0%	0 0%	8 0%	580 0%	637 0%
Total Study Area	**4,734**	**3,428 72%**	**53 1%**	**69 1%**	**27 1%**	**0 0%**	**0 0%**	**60 1%**	**1,097 23%**	**1,306 28%**

Source: U.S. Census Bureau. Census 2000 Summary File 3 (SF-3)

* Hispanic or Latino refers to ethnicity and is derived from the total population; Hispanic or Latino is not classified as a separate race.

Shaded cells indicate populations that meet the criteria for social impact analysis as defined in Section 2.3.

Table 2 – Elderly, Low-Income, Disabled, and Female Head of Household Demographics for the Study Area – Decennial 2000 Census

Area/ Census Tract (CT)		Age 60 Years and Over			Low-Income			Disabled *			Female Head of Household**	
	Population	Number	%	Population	Number	%	Population	Number	%	Population	Number	%
Maricopa County	3,072,149	465,849	15%	3,027,299	355,668	12%	2,802,278	504,992	18%	1,133,048	303,905	27%
Town of Buckeye	6,417	697	11%	6,393	1,200	19%	5,801	1,242	21%	2,140	569	27%
CT 506.02, BG 2	2,721	263	10%	2,710	151	6%	2,545	491	19%	861	89	10%
CT 506.03, BG 1	350	61	17%	350	60	17%	321	53	17%	124	25	20%
CT 506.03, BG 2	1,663	216	13%	1,643	455	28%	1,511	342	23%	522	68	13%
Total Study Area	**4,734**	**540**	**11%**	**4,703**	**666**	**14%**	**4,377**	**886**	**20%**	**1,507**	**182**	**12%**

Source: U.S. Census Bureau. Census 2000 Summary File 3 (SF-3)

* Disabled population is comprised of individuals within the population 5 years of age and older.

** Female Head of Household population is comprised of individuals in '1-person' households, '2 or more person' households, and 'non-family' non-married households either living alone or not living alone.

Shaded cells indicate populations that meet the criteria for social impact analysis as defined in Section 2.3.

Table 3 – Limited English Proficiency (LEP) Population Demographics for the Study Area – Decennial 2000 Census

Area/ Census Tract (CT)	Total Population 5 Years and Over	Total Population That Speak English "Not Well" or "Not at All"	LEP Percentage (%)
Maricopa County	2,832,694	191,744	7%
Town of Buckeye	5,824	384	7%
CT 506.02, BG 2	2,562	59	2%
CT 506.03, BG 1	321	0	0%
CT 506.03, BG 2	1,522	212	14%
Total Study Area	**4,405**	**271**	**6%**

Source: U.S. Census Bureau. Census 2000 Summary File 3 (SF-3)
Shaded cells indicate populations that meet the criteria for social impact analysis as defined in Section 2.3.

3. NATURAL RESOURCES

The project study area is located within the Lower Colorado River Valley subdivision of the Sonoran Desertscrub Biotic Community (Brown, 1994), as shown in **Figure 5**. According to Brown (1994), the Lower Colorado River Valley subdivision is the largest and most arid subdivision in Arizona. Species that were observed during field reconnaissance by the project study team include:

- Honey mesquite (*Prosopis glandulosa*);
- Ironwood (*Olneya tesota*);
- Blue paloverde (*Cercidium floridum*);
- Desert willow (*Chiopsis linearis*);
- Canyon ragweed (*Ambrosia ambrosioides*);
- Catclaw acacia (*Acacia greggii*);
- Brittle bush (*Encelia farinosa*);
- Barrel cactus (*Ferocactus* spp);
- Jojoba (*Simmondsia chinensis*);
- Saguaro (*Carnegiea gigantea*);
- Teddy bear cholla (*Opunti bigelovii*);
- Ocotillo (*Fouquieria splendens*);
- Stag horn cholla (*Cylindropuntia versicolor*);
- Hedge hog cactus (*Echinocereus engelmannii*); and
- Desert broom (*Baccharis sarothroides*).

The scrub-shrub vegetation community within the project study area is the typical/dominant community within the project study area and is comprised mostly of creosote and cacti species in the upland areas and ironwood and paloverde trees along the ephemeral washes. The ephemeral washes contain a higher quality of habitat and diversity of plant species than the surrounding upland areas. The Hassayampa River, Jackrabbit Wash, and other ephemeral washes are located within the project study area. These areas contain a higher density of xeroriparian habitat. Sparsely scattered saguaros were identified by the project study team throughout the project study area and were mostly concentrated on hills with rocky soils.

3.1 Threatened and Endangered Species

A review was conducted of the U.S. Fish and Wildlife Service (USFWS) threatened, endangered, proposed, and candidate species list for Maricopa County on August 6, 2010, per the list obtained from the website of the Arizona Ecological Services Field Office (http://www.fws.gov/southwest/es/arizona/default.htm). The USFWS currently identifies 16 threatened, endangered, candidate, and proposed species found in Maricopa County. **Table 4** summarizes the list and discusses the known presence or absence of, and potential effects on, each species and its habitat. During future planning and design studies, the USFWS list of threatened, endangered, proposed and candidate species and Arizona Game and Fish Department (AGFD) Heritage Database Management System should be reviewed to determine if new species have been identified or any changes in listing status have occurred.

The Tucson shovel-nosed snake is currently listed as a candidate species by the USFWS and will likely be listed as threatened in the future (USFWS 2010). The Tucson shovel-nosed snake is known to be present only in Pima and Pinal counties, but a historical record of this species exists in Maricopa County just south of Gila Bend, Arizona (AGFD, 2002a). Currently, only suitable habitat for the Tucson shovel-nosed snake is present within the project study area. No other suitable habitat for threatened or endangered species is present within the project study area.

Table 4 – USFWS List of Threatened, Endangered, Proposed and Candidate Species for Maricopa County, Arizona

Common Name	Scientific Name	Status	Suitable Habitat Present	Occupied Habitat Present	Critical Habitat Present	Species Affected	Critical/ Suitable Habitat Affected
Arizona cliffrose	*Purshia subintegra*	E	No	No	No	No	No
Bald eagle	*Haliaeetus leucocephalus*	T	No	No	No	No	No
California least tern	*Sterna antillarum browni*	E	No	No	No	No	No
Desert pupfish	*Cyprinodon macularius*	E	No	No	No	No	No
Gila topminnow	*Poeciliopsis occidentalis occidentalis*	E	No	No	No	No	No
Lesser long-nosed bat	*Leptonycteris curasoae yerbabuenae*	E	No	No	No	No	No
Mexican spotted owl	*Strix occidentalis lucida*	T	No	No	No	No	No
Mountain plover	*Charadrius montanus*	PT	No	No	No	No	No
Razorback sucker	*Xyrauchen texanus*	E	No	No	No	No	No
Sonoran pronghorn	*Antilocapra americana sonoriensis*	E	No	No	No	No	No
Southwestern willow flycatcher	*Empidonax traillii extimus*	E	No	No	No	No	No
Woundfin	*Plagopterus argentissimus*	E	No	No	No	No	No
Yuma clapper rail	*Rallus longirostris yumanensis*	E	No	No	No	No	No
Roundtail Chub	*Gila robusta*	C	No	No	No	No	No
Tucson shovel-nosed snake	*Chionactis occipitalis klauberi*	C	**Yes**	**Unknown**	No	**Unknown**	**No**
Yellow-billed cuckoo	*Coccyzus americanus*	C	No	No	No	No	No

C= Candidate, E= Endangered, T= Threatened, PT= Proposed Threatened
Shading indicates species and/or habitat possibly affected.

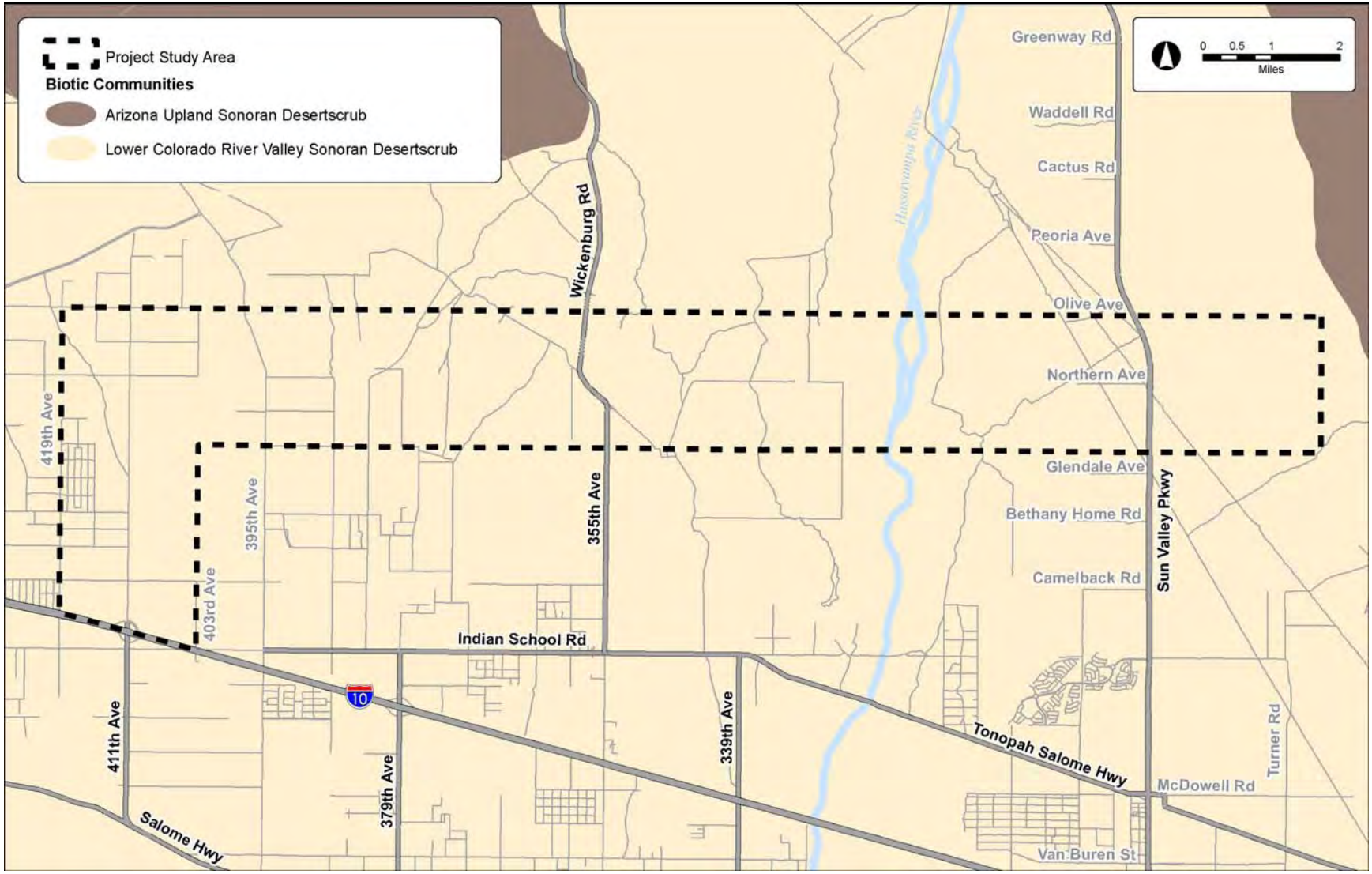

Figure 5 – Biotic Communities

Although it is unlikely that the Tucson shovel- nosed snake is present within the project study area, it is worth mentioning because suitable habitat is present. Additionally, the project study area is near a known historical location of the Tucson shovel-nosed snake. Currently, there is no survey protocol for the Tucson shovel-nosed snake and this species is not known to occur within the project study area.

On July 14 and 28, 2010, a windshield-level survey was performed by the project study team to document vegetation communities, and to identify areas of significant natural resource value and suitable habitat for federally-protected species within the project study area. The roadways within the project study area were driven to inspect as much of the 42 square miles as possible. Access into many portions of the project study area was not feasible due to private land ownership and access restrictions. Federally-protected species were not observed during the survey.

Impacts to natural resources can be assumed with the construction of new roadways and include: new right-of-way, removal of native vegetation, and new bridged crossings over ephemeral drainages and the Hassayampa River. Before construction-related activities occur within the project study area, the presence or absence of these species should be determined and a Biological Review or Biological Evaluation should be performed to identify and analyze potential project-related impacts associated with a specific roadway alignment. The Biological Evaluation will require coordination with natural resource agencies to document project compliance efforts and necessary mitigation measures.

3.2 Wildlife of Special Concern in Arizona

The AGFD Heritage Database Management System online review tool was accessed on August 17, 2010 from the AGFD's website (http://www.azgfd.gov/hgis/). Information from this database search was utilized to obtain state-listed special status species that may be found within the project study area. The AGFD online review tool listed two species as occurring within three miles of the project study area; these species are discussed below.

3.2.1 Sonoran Desert Tortoise

AGFD listed one special status species – the Sonoran desert tortoise (*Gopherus agassizii*) – that is known to occur within three miles of the project study area. The Sonoran desert tortoise is listed as a wildlife species of concern (WSC) for Arizona and a state sensitive (S) species for the BLM.

WSC is defined as a "*species whose occurrence in Arizona is or may be in jeopardy, or with known or perceived threats or population declines*" and (S) is defined as "*those taxa occurring on BLM Field Office Lands in Arizona which are considered sensitive by the Arizona State Office*."

Potential impacts to this species should be evaluated prior to construction activities.

3.2.2 Western Burrowing Owl

The project study area also contains suitable habitat for the western burrowing owl (*Athene cunicularia*), an additional special status species not listed by AGFD. The western burrowing owl is protected under the Migratory Bird Treaty Act of 1918.

Potential impacts to this species should be evaluated prior to construction activities.

Specific surveys to determine the presence or absence of both species, the Sonoran desert tortoise (AGFD, 2007a, 2007b, 2008) and the western burrowing owl (AGFD, 2009), should be performed prior to construction. If these species are located within the project limits, a qualified biologist will need to remove and/or relocate these species prior to construction. Specific mitigation measures provided by AGFD for the Sonoran desert tortoise and western burrowing owl may be necessary to minimize impacts to these federal and state-listed sensitive species.

Impacts to natural resources can be assumed with the construction of new roadways that includes new right-of-way, removal of native vegetation, and new bridge crossings over ephemeral drainages and the Hassayampa River. Before construction-related activities occur within the project study area, it is recommended that field studies be performed to determine the presence or absence of these species (Sonoran desert tortoise and western burrowing owl), analyze potential project-related impacts, and develop appropriate mitigation measures to minimize impacts to these species.

3.3 Wildlife Crossing and Movement Corridors

The *Arizona Wildlife Linkage Assessment* identifies two potential linkage zones (PLZ) that are partially within the project study area (Nordhaugen, et al., 2006). PLZs are portions of a habitat block critical for wildlife movement between two or more habitat blocks. Habitat blocks are defined as areas of land that consist of important wildlife habitat and can reasonably be expected to remain wild for at least 50 years. The PLZs in the project study area include PLZ No.64 – Bighorn Belmont-Saddle Mountain and PLZ No.65 – White Tanks-Hassayampa River (see **Figure 6**). It should be noted that while PLZ No. 65 stops short of the actual Hassayampa River per the PLZ data provided by AGFD, it is assumed that PLZ No. 65 has connectivity to the Hassayampa River.

Wilderness areas and wildlife areas/refuges are important natural resources because they provide food, shelter, and other habitat requirements (including connectivity) to sustain many species of wildlife (AGFD, 1997). Numerous wildlife species, including mule deer, utilize the washes and undeveloped uplands within the project study area to move between wildland habitats. Species such as mule deer, javelina, coyotes, multiple bird species, and mountain lions utilize the agricultural lands and areas immediately surrounding the agricultural land for foraging and/or shelter. Conversion of these agricultural lands into other uses may impact wildlife movement patterns, population maintenance processes (immigration/emigration/genetics), as well as the local availability of food resources.

The AGFD has noted that the PLZs and natural drainage channels are critical for the movement and genetic diversity of the various wildlife species found in the project study area vicinity. Wildlife movement between these wildlife linkage zones should be considered during design to determine the best way to construct the roadway while maintaining uninhibited wildlife movement and connectivity within the project study area and vicinity. Major drainages and upland areas that have been identified as wildlife PLZs should incorporate wildlife-friendly roadway design considerations such as wildlife-friendly fencing and oversized select drainage culverts/bridges for maximum large mammal passage to adequately address maintaining or improving wildlife movement capabilities within and through the roadway right-of-way, especially along regional drainages. Coordination with the AGFD should be continued to ensure that wildlife-friendly roadway crossings are incorporated where appropriate into the roadway design.

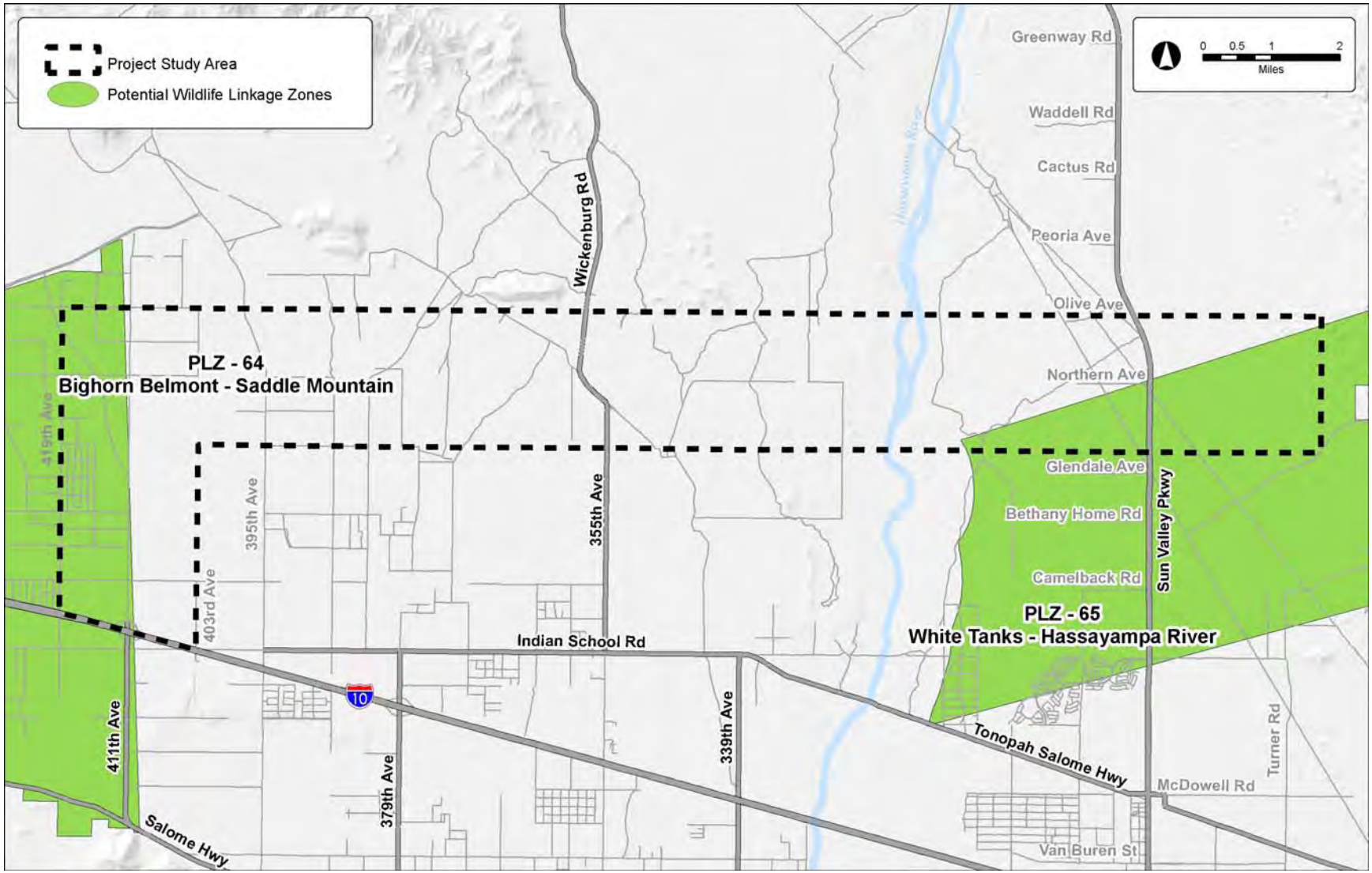

Figure 6 – Potential Wildlife Linkage Zones

In its Desert Spaces Plan (MAG, 1997), MAG has identified areas of open space for conservation, retention and areas of secured open space. Conservation Areas are defined as those that have outstanding open space value for recreational, aesthetic and biological purposes. Retention Areas include areas that have significant open space value that can co-exist with sensitive development. Secured Open Space Areas include federally managed multi-use and wilderness areas, AGFD lands, Maricopa County Regional Parks and municipal mountain preserves. These open spaces provide wildlife habitat and also allow for the movement of wildlife. Consideration to these areas should be given as to the impact of the roadway in segmenting these open areas.

3.4 Invasive/Noxious Weeds

Invasive and noxious weeds are plants that are not native to Arizona and were introduced accidentally or intentionally. The weeds rapidly displace desirable plants that provide habitat for wildlife and food for people and livestock. The weeds are listed by state and federal law and are generally considered exotic and negatively impact agriculture, navigation, fish, wildlife, and public health.

Under *Executive Order 13112*, dated February 3, 1999, projects that occur on federal lands or are federally-funded must be "subject to the availability of appropriations, and within Administrative budgetary limits, use relevant programs and authorities to: (1) prevent the introduction of invasive species; (2) detect and respond rapidly to, and control, populations of such species in a cost-effective and environmentally sound manner; (3) monitor invasive species populations accurately and reliably; and (4) provide for restoration of native species and habitat conditions in ecosystems that have been invaded."

No invasive/noxious weed species were seen during the windshield reconnaissance completed for this overview. An invasive/noxious weed survey was not conducted during field reconnaissance. However, because the project study area is 42 square miles, and the project is years away from design and construction, it is likely that invasive/noxious weeds are or will be present within the project study area. Prior to construction, a field survey should be conducted by a qualified noxious weed authority to determine if any invasive or noxious weeds are present within the construction areas to determine if any mitigation measures are necessary.

3.5 Protected Native Plants

Native vegetation helps prevent erosion while providing food and shelter for wildlife. The Arizona Native Plant Law protects listed native plant species from collection, removal, and/or destruction on all lands regardless of ownership. Any action on or against protected native plant species is regulated by the Arizona Department of Agriculture (ADA).

A limited native plant survey was conducted for easily accessible portions of the project study area on July 14 and 28, 2010 by qualified biologists. The limited survey determined that native plants are present within the project study area. Native plants that were noted include various mesquite species, paloverde species, ironwood, saguaro, and catclaw acacia. Coordination with the ADA should be conducted if any protected native plants are identified within the study area and could be impacted by the proposed project. If impacts to native plants are anticipated, a Notice of Intent and/or specific permitting may be required from ADA prior to construction.

Impacts to native plants can be assumed with the construction of new roadways as new right-of-way is acquired and converted to roadway use. As future construction limits are defined, a native plant survey should be conducted to determine if any protected native plant species would be impacted as a result of proposed roadway improvements.

3.6 Floodplains

A review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) for the project study area indicated that the project study area has mapped floodplains and floodways. The major floodways within the project study area are shown on **Figure 7**.

The following is a list of the FEMA FIRM panels for the project study area:

- 04013C1535H;
- 04013C1545H;
- 04013C1540H;
- 04013C1530J;
- 04013C1510J;
- 04013C1520H;
- 04013C1505H;
- 04013C1515H;
- 04013C1500F; and
- 04013C1975D.

Impacts to floodplains occur when the floodplain is substantially modified either by the placement of structures or the removal of materials within the floodplain. The proposed roadways will cross several large drainages with floodplains and will require the construction of drainage structures such as bridges and box culverts. The proposed roadways are anticipated to impact FEMA floodplains and floodways. A Conditional Letter of Map Revision (CLOMR) will need to be prepared during final design and coordinated with the local floodplain manager – Flood Control District of Maricopa County (FCDMC) – if floodplains are modified. For a more detailed drainage and floodplain analysis, see TM 3 associated with this project.

3.7 Water Quality

The Arizona Department of Environmental Quality (ADEQ) maintains the 303(d) List and Other Impaired Waters information for the U.S. Environmental Protection Agency (EPA) (http://www.azdeq.gov/environ/water/assessment/assess.html). Currently no impaired waters are present within the project study area. This list should be reviewed again during the design phase.

3.8 Section 404/401 of the Clean Water Act (CWA)

The U.S. Army Corps of Engineers (Corps) regulates the discharge of dredge and/or fill material into waters of the U.S. under Section 404 of the CWA. Any activity that will discharge dredge or fill material into jurisdictional waters, including wetlands, will require a CWA Section 404 Permit [either a Nationwide Permit (NWP) or an Individual Permit (IP)]. These activities include, but are not limited to, the installation of riprap, channel maintenance activities, bank protection, new or extensions of bridges, corrugated metal pipes, and box culverts.

The project study area includes eight named drainages and canals and several unnamed drainages. The Central Arizona Project (CAP) Canal is not located within the project study area, but is located just north of the project study area. A branch of the CAP, named the Tonopah Canal, crosses through the project study area diagonally north of Northern Avenue and along the east side of 383rd Avenue south of Northern Avenue. This concrete-lined canal is owned by the Bureau of Reclamation and operated by the Tonopah Irrigation District (TID).

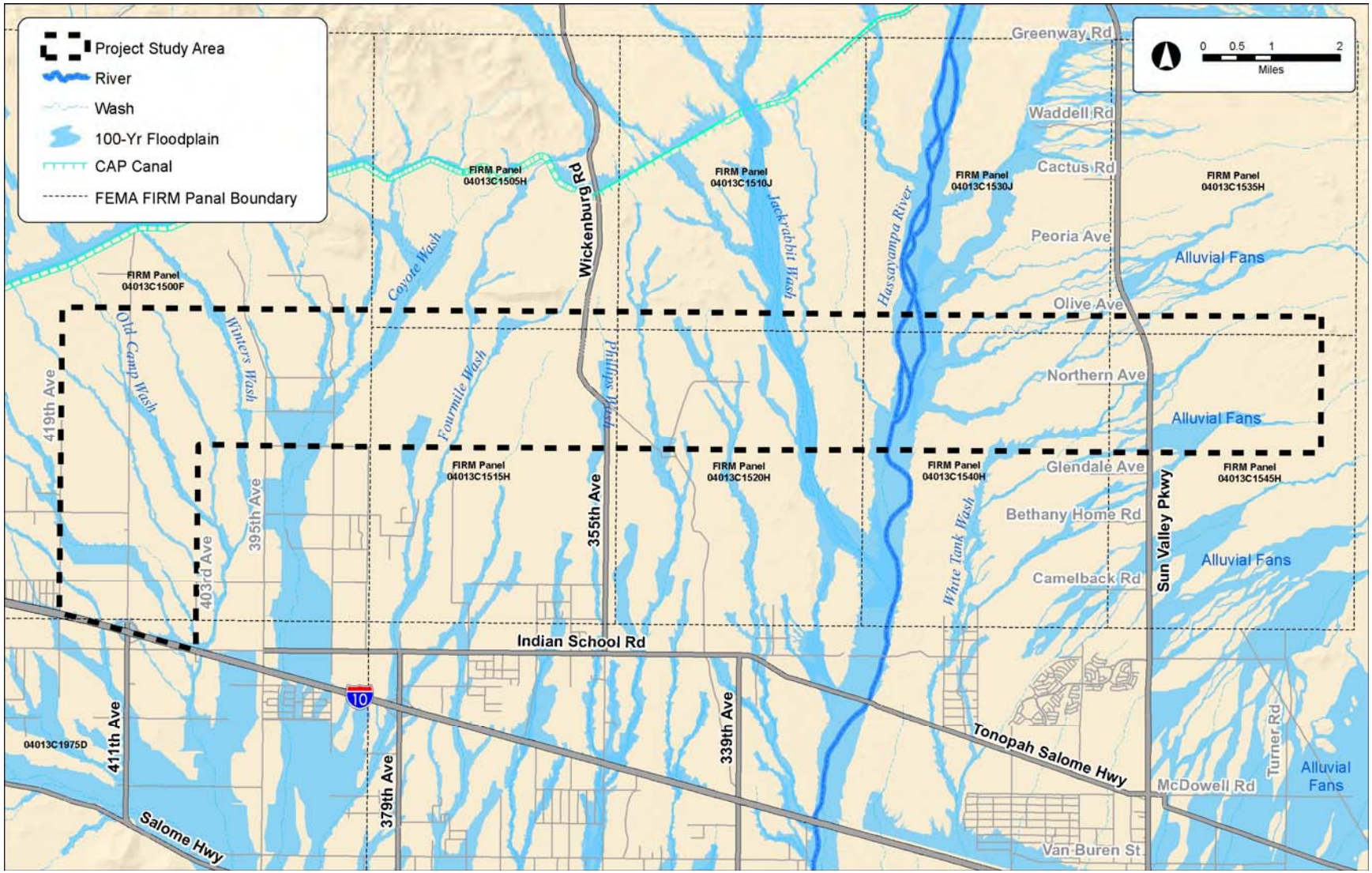

Figure 7 – FEMA Floodplains within the Project Study Area

The TID boundary is generally located along Northern Avenue to the north, 379th Avenue to the east, Tonopah-Salome Highway to the south, and 435th Avenue to the west. Within this district boundary, the TID uses the canal to distribute CAP water to farms.

The drainages within the project study area are ephemeral, which means they only have flows in response to stormwater runoff from the contributing watershed.

The following is a list of major drainages within the project study area:

- Old Camp Wash;
- Winters Wash;
- Coyote Wash;
- Fourmile Wash;
- Phillips Wash;
- Jackrabbit Wash; and
- the Hassayampa River.

A preliminary evaluation to determine the presence or absence of potentially jurisdictional waters of the U.S. within the project study area was not conducted. Portions of the Hassayampa River and Jackrabbit Wash within the project study area vicinity have been previously determined as jurisdictional waters of the U.S. by the Corps. Therefore, drainages that flow into these washes may be subsequently determined to be waters of the U.S. The Tonopah Canal could be considered a potentially jurisdictional water of the U.S. as it branches off of the CAP Canal, which is considered a potentially jurisdictional water of the U.S. An evaluation by the Corps to determine boundaries of waters of the U.S. will be required during design. A preliminary jurisdictional determination or an approved jurisdictional determination can be submitted to the Corps for review. A preliminary jurisdictional determination is a non-binding document that is typically pursued in the planning stages of a project. An approved jurisdictional determination is a document that is binding for five years that requires more data gathering and usually takes longer to get approved.

3.9 Prime and Unique Farmland

The *Farmland Protection Policy Act* (FPPA) authorizes the Department of Agriculture to develop criteria for identifying the effects of federal programs on the conversion of farmland to nonagricultural uses. Farmland protected by the FPPA is classified as either unique farmland, prime farmland (which is not already committed to urban development or water storage), or farmland which is of state or local importance (as determined by the appropriate government agency and the Secretary of Agriculture).

According to the United States Department of Agricultural (USDA**)** Natural Resource Conservation Service's soils website (http://websoilsurvey.nrcs.usda.gov) there are Prime farmland soils located throughout the project study area. The soils were classified as Prime Farmland "if irrigated" or "if irrigated and either protected from flooding or not frequently flooded during the growing season." The majority of the soils that are classified as Prime Farmland are not irrigated; however, the soils in the western portion that are actively farmed and irrigated would be considered Prime Farmland.

While the *Hassayampa Framework Study* assumed there will be no actively farmed and irrigated land within the project study area in the buildout condition, consideration should be given to

potential impacts to the Prime Farmland that may still exist when planned roadways are ultimately implemented within the project study area.

3.10 Arizona Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) is a national program under Section 402 of the CWA that regulates discharges of pollutants from point sources into waters of the U.S., including sediment and pollutants that can be generated during ground-disturbing activities and transported by stormwater runoff. Arizona has been delegated authority from the U.S. Environmental Protection Agency to implement the permit program within the state. The state program is referred to as the Arizona Pollutant Discharge Elimination System (AZPDES). The AZPDES permit program requires a general permit for construction activities that disturb one or more acres of land as well as for construction activities that disturb waters of the U.S. A Stormwater Pollution Prevention Plan (SWPPP) must be prepared as a part of the permit. Although this is only a planning-level study, it can be assumed that the construction of new roadways would impact more than one acre of land and/or waters of the U.S., so an AZPDES and SWPPP will be required during future project development.

3.11 Soils

According to the United States Department of Agriculture (USDA) Natural Resource Conservation Service's soils website (http://websoilsurvey.nrcs.usda.gov), the soil types within the project study area are (with sub-types in parentheses):

- Agualt loam;
- Antho (association, gravelly sandy loam, sandy loam, -Brios sandy loam, -Carrizo complex, -Carrizo-Maripo complex);
- Brios (sandy loam, -Carrizo complex, low precipitation);
- Carrizo (gravelly sandy loam, very gravelly sand, -Ebon complex, -Gunsight complex);
- Casa Grande (loam, -Leveen complex alkali);
- Cheriono-Rock outcrop complex;
- Chuckawalla-Gunsight complex;
- Cipriano very gravelly loam;
- Coolidge sandy loam;
- Denure-Momoli-Carrizo complex;
- Ebon (-Gunsight-Cipriano association, -Pinamt complex);
- Estrella loams;
- Gachado-Lomitas-Rock outcrop complex;
- Gilman (fine sandy loam, loams, -Antho association);
- Glenbar loams;
- Gunsight (-Cipriano complex, -Rillito complex);
- Harqua (-Gunsight complex, -Laveen complex, -Rillito complex);
- Laveen (loam, loam saline-alkali, sandy loam);
- Maripo sandy loam;
- Mohall loam;
- Momoli-Carrizo complex;

- Perryville gravelly loam;
- Pinamt-Tremant complex;
- Quilotosa-Vaiva-Rock outcrop complex;
- Rillito (gravelly loam, loam, sandy loam, -Harqua complex);
- Sal-Cipriano complex;
- Suncity-Cipriano complex;
- Torripsamments and Torrifluvents;
- Tremant (gravelly loam, loam, -Gunsight-Rillito complex, -Rillito complex);
- Vaiva very gravelly loam; and
- Valencia (gravelly sandy loam, sandy loam).

Table 5 lists the characteristics of the most common soil types and **Figure 8** indicates where the soils are located in the project study area.

Table 5 – Soil Type Characteristics

Soil Type	Typical Location	Depth to Restrictive Layer	Drainage Comments
Gunsight complex	Gunsight soils are on fan terraces or stream terraces, and have slopes of 0 to 60 percent.	3 to 20 inches	The Gunsight series consists of very deep, somewhat excessively drained, strongly calcareous soils that formed in alluvium from mixed sources.
Laveen	Laveen soils are on fan terraces, stream terraces and relict basin floors. Slopes are 0 to 3 percent.	3 to 34 inches	The Laveen series consists of very deep, well drained soils that formed in mixed fan alluvium.
Rillito	Rillito soils are on fan terraces or stream terraces. Slopes are dominantly 0 to 5 percent, but range to 40 percent.	3 to 40 inches	The Rillito series consists of very deep, somewhat excessively drained soils that formed in mixed alluvium.

3.12 Visual Resources

Impact to the visual quality of the project study area is determined by the impairment or obstruction of views. In general, the visual character of the project study area is comprised of relatively flat lands in the western portion of the project study area, with an increase in elevation and topographic relief towards the eastern boundary. The Belmont Mountains are located in the distance to the north; the White Tank Mountains are located to the east; areas of development/rural areas are located to the south; and undeveloped land is located to the west. A new roadway facility will have some visual impacts within the project study area.

The BLM has some land management responsibilities within the project study area and vicinity. The BLM is responsible for ensuring that the scenic values of these public lands are considered before allowing uses that may have negative visual impacts. The BLM strives to preserve scenic values through its Visual Resource Management (VRM) system. This system entails taking an inventory of scenic values and establishing management objectives for those values through the resource management planning process. Then, proposed activities are evaluated to determine whether they conform to the management objectives.

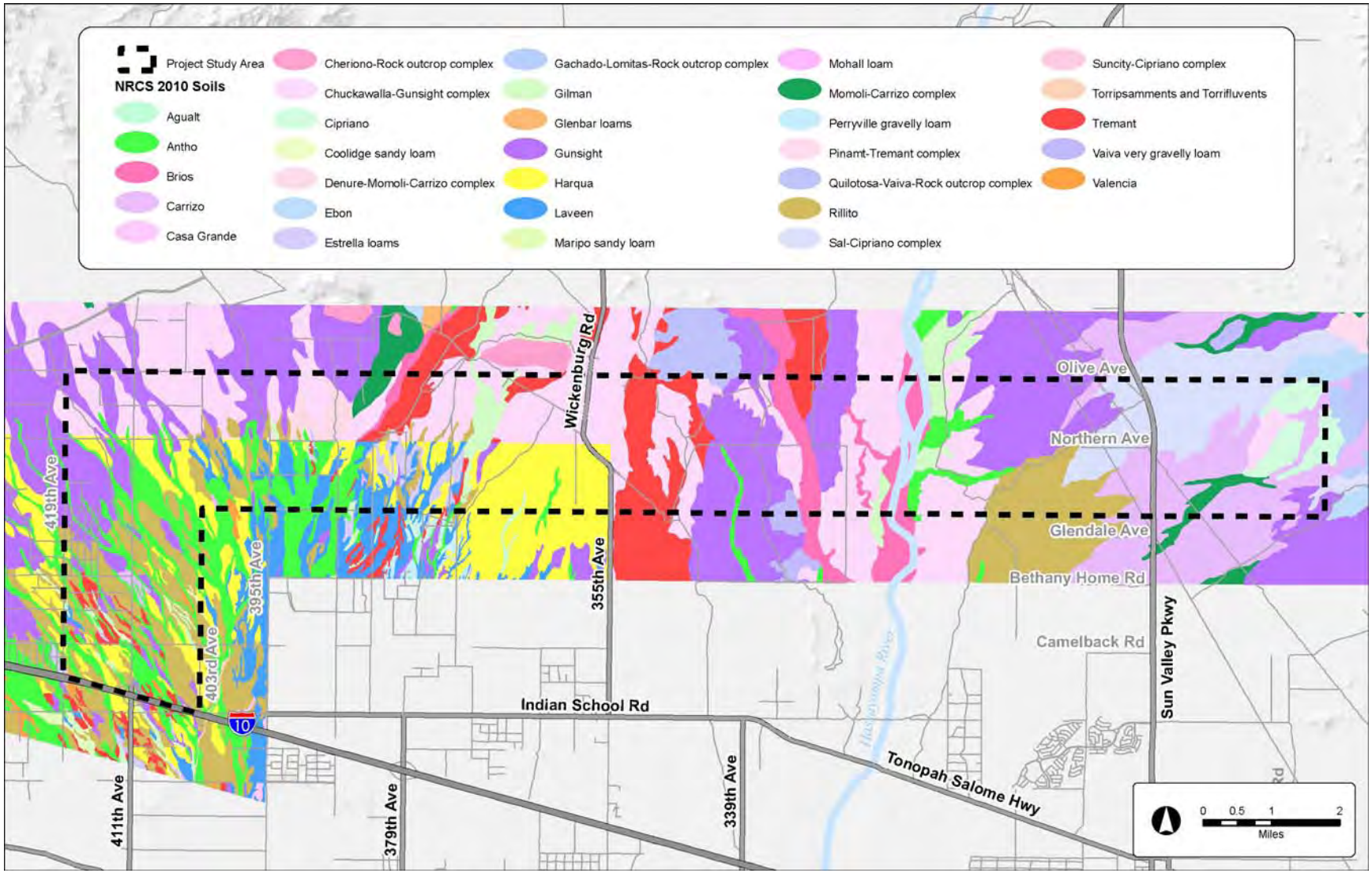

Figure 8 – Soils

Impacts to existing viewsheds can be assumed with the construction of new roadways that includes new right-of-way, conversion of native desert to roadway use, and visual changes in the landscape due to the new roadway facility. General impacts include altered viewsheds from area residences which may include a new roadway or improved roadway features. Viewsheds from various public access lands (BLM and ASLD) may include a new roadway or improved roadway features that were not previously within or as dominant in the viewshed. Visual impacts associated with this project will also include a new crossing over the Hassayampa River.

A visual resource analysis will be required as part of any future environmental document process and should include VRM staff from the BLM for those portions of the project located near BLM-managed land.

3.13 Air Quality

The federal Clean Air Act (CAA) requires that impacts to air quality be analyzed and addressed in the preparation of environmental documents. Pursuant to the CAA, the EPA has established National Ambient Air Quality Standards (NAAQS) for six air pollutants:

- Carbon monoxide (CO);
- Lead (Pb);
- Nitrogen dioxide (NO_2);
- Ozone (O_3);
- Particulate matter (PM) for both PM_{10} and $PM_{2.5}$; and
- Sulfur dioxide (SO_2).

Based on federal and state air quality standards, a specific geographic area can be classified under the federal CAA as either being in "attainment," "non-attainment," or "maintenance" for each criteria pollutant. The criterion for non-attainment designation varies by pollutant so that an area can be in attainment for some pollutants and non-attainment for others.

If a pollutant in a region meets or exceeds the NAAQS set by the EPA, it is defined as an attainment area. If a pollutant does not meet the minimum NAAQS, it is defined as a non-attainment area. Maintenance areas are areas previously defined as nonattainment areas that are in transition to becoming attainment areas after monitoring data demonstrates air quality standards are being met. The project is in attainment areas for the following pollutants: CO, Pb, No_2, PM_{10} and SO_2.

The project study area is currently in non-attainment for eight-hour ozone (O_3), which is emitted from motor vehicle exhaust, gasoline vapors, and chemical solvents. High levels of eight-hour ozone can cause or increase existing respiratory problems, and can damage valuable ecosystems. The population in the Town of Buckeye is projected to double between 2010 and 2020 according to the MAG *2007 8-Hour Ozone Plan*, which will potentially increase the number of pollutant contributing vehicles in the project study area. The *Ozone Plan* also estimates that vehicle miles traveled (VMT) between 2006 and 2026 will increase 72 percent in the non-attainment area from 89.4 million to 154.2 million (the non-attainment area is 4,880 square miles and contains 25 cities and towns, including Phoenix, and other jurisdictions). Increased VMT in the non-attainment area will have a negative impact to the air quality of the area, particularly due to increased O_3 levels.

Northern Parkway and Tonopah Parkway will provide a major roadway transportation corridor west of the White Tank Mountains and north of I-10. Because eight-hour ozone is emitted from

chemicals relating to motor vehicle sources, identifying and understanding the long-term air quality impacts of the new Northern Parkway and Tonopah Parkway, in an otherwise rural area, will require further analysis. However, because the alignment has not yet been identified, specific air quality impacts cannot yet be determined. Furthermore, construction could result in negative temporary air quality impacts due to construction-related traffic delays and from construction vehicles. The phasing of this project has yet to be determined. All construction activities must adhere to Maricopa County air quality rules and ordinances to minimize air quality impacts. Air quality impacts should be evaluated in greater detail once the alignment has been determined.

While the project study area is within attainment areas for the other pollutants, it can be assumed that with an increase in VMT there would be an increase in CO, Pb, No_2, PM_{10} and SO_2.

3.14 Noise Impacts

MCDOT employs the following guidelines to determine the need, feasibility, and reasonableness of noise abatement measures on all roadway projects according to the MCDOT Noise Abatement Policy, April 1998 (revised 2001). This policy is based on accepted practices and procedures used by federal and state transportation agencies to assess roadway-related noise impacts. As directed by 23 CFR Part 772, the Federal Highway Administration (FHWA) has developed specific, hourly, A-weighted noise abatement criteria that serve as the upper limit of acceptable traffic noise levels for various types of land use (see **Table 6**).

Table 6 – Noise Abatement Criteria

Activity Category	Description	Leq(h)
A	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose	57 dBA (exterior)
B	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals	67 dBA (exterior)
C	Developed lands, properties, or activities not included in Categories A or B	72 dBA (exterior)
D	Undeveloped lands	None
E	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums	52 dBA (interior)

Source: Title 23, CFR Part 772

Noise impacts occur if the anticipated sound levels for the project study area meet or exceed the thresholds for each of the land use categories or approach 67 dBA Leq for Category B-type land uses. “Approach” is considered to be 66 dBA Leq. These levels are typically applied to exterior areas where lower noise levels would be of benefit. Traffic noise impacts also occur when the projected traffic noise levels substantially exceed the existing noise level (15 dBA Leq or more).

Currently, the project study area contains all of the noise activity categories listed in **Table 6** with the exception of “B”, although future land use may contain “B”. Potential sensitive noise receivers within the project study area include existing residences and large undeveloped parcels of land owned by the BLM and the ASLD. During subsequent environmental documentation activities for the project study area, ambient noise levels may need to be monitored at specific locations. Future noise quality assessments for the project study area may need to be evaluated

against existing noise data to determine conformity to the MCDOT Noise Abatement Policy. In addition, local noise ordinances may need to be considered during future project development.

3.15 Hazardous Materials

Hazardous materials are regulated by the Federal Resources Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as the Superfund. ADEQ implements CERCLA and its amendments, the Superfund Amendments and Reauthorization Act (SARA) of 1986. To investigate the environmental concerns associated with hazardous materials and solid waste landfills, a Preliminary Initial Site Assessment (PISA) of regulated hazardous material sites and solid waste facilities located within or in the vicinity of the project study area was performed.

The PISA included a site reconnaissance, and a review of the various state and federal databases for hazardous materials was completed for the project study area. Environmental Data Resources, Inc., (EDR) conducted a third-party database search of regulated facilities within, and in the immediate vicinity (0.25 miles), of the project study area.

Upon review of the EDR report, three environmental concerns were identified regarding underground storage tanks (USTs), and leaking underground storage tanks (LUSTs). The three facilities/concerns are described below.

3.15.1 ADOT Tonopah Maintenance Facility

This facility (located at 40801 W. Camelback Rd., Tonopah, AZ 85354) was observed during field reconnaissance and appears to be a maintenance facility. Three underground storage tanks (USTs) were reportedly removed from this facility. This facility also had a leaking underground storage tank (LUST) case that was remediated to non-residential land use status. Due to this, a Voluntary Environmental Mitigation Use Restriction (VEMUR) was placed on the property. This is a restrictive land use covenant that was required when the property owner elected to remediate the property to non-residential uses. The LUST case was listed as closed in August 1998.

3.15.2 Tonopah Chevron

This facility (located at 4126 N. 411th Ave., Tonopah, AZ 85354) is an active Mobil service station with gasoline and diesel USTs onsite. A LUST case was reported for this facility, but it is listed as closed as of April 1996 because remediation of the contaminated soil/groundwater meets Tier 1 standards.

3.15.3 Woody's #101

This facility (located at 4127 N. 411th Ave., Tonopah, AZ 85354) is an active Chevron service station with gasoline and diesel USTs onsite. Numerous LUST cases were reported for this facility, but are listed as closed as of February 2002 because remediation of the contaminated soil meets Tier 1 standards.

A hazardous building materials evaluation or field reconnaissance was not performed as part of the PISA. The purpose of the PISA is to provide information for alternative site selection during project development. It is anticipated that in the future, right-of-way acquisition will be required once the project limits are established. Due to the information previously stated and the existing contamination and land use restrictions on the previously mentioned parcels, MCDOT should

have a Phase I Environmental Site Assessment completed prior to acquiring or requesting an easement on these parcels to further evaluate the identified environmental concerns.

Due to the culverts and other concrete structures in the project area and the potential for asbestos containing materials, it is recommended that asbestos surveys be performed prior to construction activities.

Assessments made as part of the PISA represent a reasonable attempt to identify environmental concerns for the project study area. There is always the possibility that environmental concerns have escaped detection due to the limitations of the PISA, the incompleteness or inaccuracy of governmental records, or presence of undetected and unreported environmental incidents. If suspected hazardous materials are encountered during construction, work will cease at that location and the MCDOT Environmental Planning Section will be contacted to arrange for proper examination of those materials.

4. CULTURAL RESOURCES

4.1 Regulatory Setting

In Arizona, the responsibility for identification, evaluation, protection, and treatment of cultural resources is codified under a matrix of federal, state, and local laws and regulations. The National Historic Preservation Act of 1966 (NHPA), as amended (16 USC §470 et seq.), requires that all federal agencies take into account the effects of their undertakings on places listed in or eligible for the National Register of Historic Places. Section 106 of the NHPA and its regulations (36 CFR 800) outlines a consultation process by which federal agencies can comply with their statutory responsibilities. The National Environmental Policy Act (NEPA) of 1969, as amended (42 USC §4321 et seq.) and the Council on Environmental Quality regulations for the implementation of NEPA (40 CFR 1500) requires the federal government to "preserve important historic, cultural and natural aspects of our national heritage."

Other pertinent federal legislation that guides the proper treatment of cultural resources on federal lands or that may be impacted by projects funded or permitted by the federal government include: the Antiquities Act of 1906, as amended (16 USC §431-433), American Religious Freedom Act of 1978, as amended (42 USC §1996 and 1996a), Archaeological Resources Protection Act of 1979, as amended (16 USC §469-469c-2), the Native American Graves Protection and Repatriation Act of 1990, as amended (25 USC §3001 et seq.), and Section 4(f) of the Department of Transportation Act of 1966 (23 USC §138).

The Arizona State Historic Preservation Act of 1982 established a consultation process for state agencies that mirrors the federal process established under the NHPA (ARS §41-861et seq.). In addition, the Arizona Antiquities Act (ARS §41-841 et seq.) authorizes the Arizona State Museum to issue permits for archaeological projects within the state and to assist in the enforcement of cultural resource legislation and the protection and repatriation of human remains and their associated funerary objects. Both these pieces of legislation include local government provisions and outline county/municipality responsibilities concerning the discovery and treatment of historical sites/objects, human remains and funerary objects.

4.2 Cultural Resource Inventory

A review of records for cultural resources was performed for the project study area in July and August 2010. Site files and information maintained at the Arizona State Historic Preservation Office (SHPO) and in the AZSITE cultural resources database, as well as information from the Flood Control District of Maricopa County and cadastral survey maps/General Land Office Plats available from the BLM were analyzed for the records review.

Due to the likelihood of future federal agency involvement in this project, the National Register of Historic Places (NRHP) criteria for evaluation are perhaps the best and most appropriate criteria by which cultural resources within the project study area should be evaluated.

The National Register criteria for evaluation are: *The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association and that,*

A. are associated with events that have made a significant contribution to the broad patterns of our history; or

B. *are associated with the lives of persons significant in our past; or*

C. *embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or*

D. *have yielded, or may be likely to yield, information important in prehistory or history.*

Generally speaking, cemeteries, properties owned by religious institutions, structures that have been moved from their original locations or cultural resources less than 50 years old are not considered eligible for the NRHP. The National Park Service has identified guidelines for applying the criteria and exceptions to the restrictions listed above and others.

An additional class of cultural resources may be found within the study area, Traditional Cultural Properties (TCP), also sometimes called Traditional Cultural Places. TCPs are resources that may be eligible for inclusion in the NRHP because of their association with cultural practices or beliefs of a living community that (a) are rooted in the community's history, and (b) are important in maintaining the continuing cultural identity of the community (National Register Bulletin No. 38). A more detailed discussion regarding the nature of and potential for the existence of TCPs within the project study area follows the cultural resource inventory records review information.

The records review indicated that there were 22 previous cultural resource survey investigations conducted within the project study area (see **Table 7**).

In terms of survey coverage, approximately 50 percent of the project study area has been surveyed for cultural resources. The surveys were conducted for a wide range of projects, including linear transportation studies, utility pipeline and transmission line right-of-way studies, and parcel-specific projects for other development projects. It should be noted that a number of these survey projects were completed prior to the year 2000. In fact, approximately 20 percent of the project study area was surveyed and reported on over 10 years ago. SHPO has issued guidance on the use of older survey data for planning purposes and encourages the evaluation of older survey information for its continued validity or to determine if new survey investigations to current standards are warranted (SHPO Guidance Point 5, 2004).

The records review also indicated that a total of 30 cultural resource sites have previously been recorded within the project study area (see **Table 8**). Of these recorded sites, none are listed on the NRHP, none have been determined eligible for inclusion on the NRHP by the SHPO, 15 were considered eligible for inclusion on the NRHP by their recorder, eight were considered not eligible by their recorder, and eight have not been evaluated. Please note that site AZ T:9:78 (ASM), a historic road, had two different segments evaluated for the NRHP – one segment was considered eligible and the other segment was considered not eligible.

A number of sites originally recorded by the BLM (Stone 1988) were referenced in the literature as being considered eligible – not as individual sites, but as a collection of sites whose significance stems from their distribution and relationship to each other (e.g., an archaeological district – though that was not specified in the literature). These sites are clustered around Fourmile Wash and Flatiron Mountain and suggest a systematic occupation and use of the area by prehistoric peoples. Because large portions of the project study area have not been surveyed, other clusters of similarly related sites may be present.

Table 7 – Previous Cultural Resource Survey Investigations within the Project Study Area

Agency No.	Project Name	References
1977-20.ASM	Arizona Nuclear Power Project	Stein (1977)
1986-52.ASM	State Land Survey	Fish (1986)
1986-194.ASM	White Tank Mtn. Regional Parkway	Effland (1986)
1987-222.ASM	U.S. Telecom Buried Fiber Optic Cable	Rogge (1987)
2000-723.ASM	AT&T NexGen/Core Project Link 3 Class 3 Survey	Keams (2000)
2002-280.ASM	I-8 Adobe Flats-Junction SR 85 Tonopah	Montero (2002)
2003-341.ASM	Sun Valley 13,000 Acre Survey	Mitchell (2001)
2004-679.ASM	AT&T NexGen/Core Project	Wheeler (2002)
2005-9.ASM	Johnson Project	Boyolan (2004)
2005-67.ASM	Sun Valley South Survey	Mitchell (2004)
2005-80.ASM	Unknown	Unknown
2005-85.ASM	Unknown	Unknown
2005-381.ASM	I-10 Hovatter to SR 85	Davis (2005)
2005-742.ASM	Unknown	Unknown
2006-69.ASM	Montiere 404 Permit ARCH (595 ac)	Mitchell (2005)
2006-257.ASM	The Sun Valley ADMP Archaeological Inventory I Project of West-Central Maricopa County, Arizona	Rogers (2006)
2006-313.ASM	Unknown	Unknown
2006-719.ASM	Unknown	Unknown
7.721.SHPO	Unknown	Unknown
79-044.ASU	Unknown	Unknown
A75-199.MNA	Palo Verde Nuclear Generating Station Westwing	Brook (1975)
815.ASM	The Fourmile Wash Project: Archaeological Investigations at Eight Sites in the Tonopah Desert in Western Arizona	Sires (1992)

Table 8 – Previously Recorded Cultural Resource Sites within the Project Study Area

Site Number(s)	Site Description	NRHP* Eligibility (Criterion)	Reference(s)
AZ T:5:1(ASM)	Sherd and lithic artifact scatter.	Not evaluated	Urban (1977)
AZ T:5:7(ASM)	Small sherd and lithic scatter.	Not evaluated	Quillen (1985)
AZ T:5:11(ASM) AZ T:5:11(BLM)	Prehistoric artifact scatter with rock features.	Not evaluated	Sires (1992)
AZ T:5:12(ASM) AZ T:5:12(BLM) Flatiron Site	Prehistoric artifact scatter with numerous features. Test excavations indicate subsurface features.	Not evaluated	Sires (1992) Stone (1988)
AZ T:5:13(BLM)	Rock clusters.	Considered eligible (D)**	Stone (1988)
AZ T:5:14(ASM) AZ T:5:14(BLM)	Prehistoric artifact scatter with rock features – possible deflated roasting pit.	Not evaluated	Sires (1992) Stone (1988)
AZ T:5:17(ASM) AZ T:5:51 (BLM)	Prehistoric artifact scatter with numerous features. Test excavations indicate subsurface features.	Not evaluated	Sires (1992) Stone (1988)
AZ T:5:23(ASM)	Rock concentration.	Considered not eligible	Foster et al. (2004)
AZ T:5:24(ASM)	Historic trash scatter.	Considered not eligible	Foster et al. (2004)
AZ T:5:25(BLM)	Stone concentration with groundstone and metate fragments.	Considered eligible (D)**	Stone (1988)
AZ T:5:26(BLM)	Rock features - possible roasting pit – no artifacts.	Considered eligible (D)**	Stone (1988)
AZ T:5:27(BLM)	Rock features - no artifacts.	Considered eligible (D)**	Stone (1988)
AZ T:5:28(BLM)	Stone concentration – no artifacts.	Considered eligible (D)**	Stone (1988)
AZ T:5:29(BLM)	Rock alignment - no artifacts.	Considered eligible (D)**	Stone (1988)
AZ T:5:30(BLM)	Rock concentration – no artifacts.	Considered eligible (D)**	Stone (1988)
AZ T:5:31(BLM)	Stone features - no artifacts.	Considered eligible (D)**	Stone (1988)
AZ T:5:32(BLM)	Four stone features – no artifacts.	Considered eligible (D)**	Stone (1988)
AZ T:5:33(BLM)	Stone concentration – no artifacts.	Not evaluated	Stone (1988)

Table 8 – Previously Recorded Cultural Resource Sites within the Project Study Area (*Continued*)

Site Number(s)	Site Description	NRHP* Eligibility (Criterion)	Reference(s)
AZ T:5:35(BLM)	Rock ring – no artifacts.	Considered eligible (D)**	Stone (1988)
AZ T:5:47(BLM)	Stone concentration – no artifacts.	Considered not eligible	Stone (1988)
AZ T:5:48(BLM)	Stone feature – possible hearth.	Not evaluated	Stone (1988)
AZ T:5:49(BLM)	Rock feature (burned and fire cracked) – no artifacts.	Considered eligible (D)**	Stone (1988)
AZ T:5:50(BLM)	Stone cluster.	Considered eligible (D)**	Stone (1988)
AZ T:5:51(BLM)	Sherd and lithic scatter with rock features.	Considered eligible (D)**	Stone (1988)
AZ T:6:58(ASM)	Small historic trash scatter.	Considered not eligible	Foster (2002)
AZ T:6:79(ASM)	Historic road segment.	Considered not eligible	Marshall (2004)
AZ T:6:125(ASM)	Historic artifact scatter with features.	Considered not eligible	Cox et al. (2008)
AZ T:9:78(ASM) 395th Avenue alignment	Historic road segments - appears as a primitive road on 1937 and 1950 Maricopa County highway maps.	Considered not eligible (2006)*** Considered eligible (2001)***	Baker (2004) Jones (2008)
AZ T:9:89(ASM)	Historic homestead with features.	Considered eligible (D)	Lindly (2004)
AZ T:9:90(ASM)	Historic trash scatter.	Considered not eligible	Lindly (2004)

* NRHP Criterion listed in ( ) if known. Considered eligible – by site recorder. Determined eligible – by SHPO.
** Sites considered eligible when combined with similar sites along Fourmile Wash.
*** Different segments of the same road.

In addition to the sites listed above, BLM cadastral survey maps, dating from 1883 to 1919, indicated that a number of roads traversed the project study area in the following sections:

- T3N R7W Section 35;
- T3N R6W Sections 34-35;
- T3N R5W Section 35;
- T3N R4W Section 34;
- T2N R7W Sections 2, 11-14, 23-24;
- T2N R6W Sections 1, 3-4;
- T2N R5W Sections 2-3; and
- T2N R4W Sections 5-6.

Field verification of the presence/absence of these roads was outside the scope of this overview, but remnants of these historic routes may still be present as suggested by the comparison of the historic survey maps with contemporary U.S.G.S. Topographic maps (specifically Wagner Wash Well (1988) and Hot Rock Mountain (1990) 7.5' Quadrangle maps).

The number and nature of the recorded sites within the project study area suggest prehistoric occupation, primarily for the procurement and processing of natural resources and seasonal use versus long-term habitation. The few sites dating to the historic period suggest homesteading and ranching use of the land. Though the study and recordation of cultural resources within the project study area is minimal, historic contexts can be used to help understand and evaluate the significance of the resources. Specifically, the contexts of *Historic Homesteading in Arizona 1870-1942* (Stein 1990) and *Prehistoric to Historic Transition Period in Arizona, Circa A.D. 1519 to 1692* (Gilpin and Phillips 1998), which were developed as components of the *Arizona Historic Preservation Plan*, should help in understanding the significance of the previously recorded historic sites, roads contained in the BLM survey maps, and the prehistoric archaeological resources, respectively.

4.3 Traditional Cultural Places

Traditional Cultural Places (TCPs) are cultural resources that may be eligible for inclusion in the NRHP because of their association with cultural practices or beliefs of a living community that (a) are rooted in the community's history, and (b) are important in maintaining the continuing cultural identity of the community (National Register Bulletin No. 38). Though the records review for this report did not identify any documented TCPs in the project study area, there is a possibility that such resources are present. The presence of the Hassayampa River and its tributaries provide resources that would have supported the long-term use of the area by native peoples. Specific locales that, over time, have been repeatedly used for resources procurement and utilization may have cultural significance for contemporary Native American communities.

Information regarding the existence and location of TCPs can be challenging to obtain from communities who consider such places as sacred and/or significant and sensitive to their culture. Knowledgeable parties should be consulted regarding the presence, nature, and location of TCPs within the project study area. It is also important to understand the role that the information being requested plays in the cultures of those involved and may require assistance from ethnohistorians, ethnographers, other cultural specialists and native language speakers.

Once information regarding TCPs is obtained, the NRHP evaluation of these resources for their potential eligibility must be conducted to determine what, if any, consideration these resources will require under Section 106 of the NHPA or other pertinent legislation.

4.4 Cultural Resource Recommendations

The entire project study area has not been completely surveyed for cultural resources. In fact, approximately 50 percent of the project study area has been previously surveyed and approximately 40 percent of that (or 20 percent of the entire project study area) was surveyed in or before 2000. As alternatives are selected, additional analysis will be required to determine the level and adequacy of previous cultural resource survey coverage. Once an Area of Potential Effect (APE) has been established for the project, areas within the APE that have not been previously surveyed will need to have a Class III pedestrian survey completed that meets the Federal (Secretary of the Interior), SHPO, and Arizona State Museum standards prior to any construction activity.

Furthermore, if areas were surveyed prior to 2000 (or over 10 years old), the survey report should be re-evaluated to determine if it meets the current standards. If the older survey's methodology, staff qualifications, and documentation (site type identification, recordation, temporal threshold, and tribal/agency consultation) do not meet current standards, the survey should be updated and/or the project area should be surveyed again.

All cultural resources identified within the project's APE should be evaluated for their NRHP eligibility. Historic context studies, specifically *Historic Homesteading in Arizona 1870-1942* (Stein 1990) and *Prehistoric to Historic Transition Period in Arizona, Circa A.D. 1519 to 1692* (Gilpin and Phillips 1998), should be used to assist in the evaluation process. If resources, particularly NRHP listed or eligible resources, cannot be avoided by project activities, they should be treated in accordance with the Secretary of the Interior's Guidelines for the Treatment of Historic Properties and applicable state laws.

Tribal consultation should be initiated early in the planning process to seek information regarding areas of cultural importance to native people. As with other cultural resources, the significance and potential NRHP eligibility of all identified TCPs located within or in the proximity of the project's APE will need to be evaluated.

Consultation and compliance with the Arizona State Historic Preservation Act, Arizona Antiquities Act and Section 106 of the NHPA (if considered a federal undertaking) will be necessary as this project progresses.

5. SECTION 4(F) AND 6(F) RESOURCES

5.1 Candidate and Potential 4(f) Resources

Section 4(f) of the Department of Transportation Act, as amended, applies only to agencies of the Department of Transportation (USDOT, e.g., FHWA) and includes projects with Federal-Aid Highway Funding. Generally speaking, the law requires that if there is a feasible and prudent alternative that avoids the use of a 4(f) resource, then that alternative (the alternative that avoids use of the 4(f) resource) must be selected. This is a powerful regulation that may have important implications to the selection of alternatives for this project.

Section 4(f) refers to the original section in the Department of Transportation Act of 1996. The 4(f) requirement, originally set forth in *Title 49 United States Code (U.S.C.), Section 1653(f)*, considers publicly-owned park and recreational lands, publicly-owned wildlife and waterfowl refuges, and historic sites in transportation project development. Section 4(f) states that the FHWA "…may approve a transportation program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if…there is no prudent planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use." (*49 U.S.C. 303[c]*). Section 4(f) also establishes criteria by which public parks and recreation lands, wildlife, and waterfowl refuges and historic sites can be evaluated for consideration as 4(f) resources.

A "use" of a Section 4(f) resource, as defined in *Title 23, CFR, Part 771.135(p)*, "occurs: (1) when land is permanently incorporated into a transportation facility; (2) when there is a temporary occupancy of land that is adverse in terms of the statute's preservationist purposes; or (3) when there is a constructive use of land. A constructive use of a Section 4(f) resource occurs when the transportation project does not incorporate land from a Section 4(f) resource, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired."

A historic site, property or resource means any prehistoric or historic district, site, building, structure or object included in or eligible for inclusion on the NRHP. Section 4(f) does not apply if archaeological resources are important chiefly because of what can be learned by data recovery (NRHP criterion D). Consequently Section 4(f) applies to historic properties listed on or eligible for the NRHP under criterions A, B and/or C. None of the currently recorded cultural resources within the project study area are either listed or have been officially determined eligible by the SHPO for the NRHP (under criterion A, B, and/or C). Though a number of sites have been considered eligible for the NRHP by their recorder, all of those were considered eligible under criterion D and, therefore, may not be considered candidate 4(f) resources.

The FHWA has published a policy paper (FHWA Section 4(f) Policy Paper, 2005) that serves as a guide for the applicability of Section 4(f) and outlines an evaluation process and alternative analysis procedures. As this project progresses, early identification and evaluation of potential 4(f) resources and analysis of the project's potential impact on them will be important to the effective and efficient planning of the project should FHWA involvement be anticipated.

No Section 4(f) resources, including publicly-owned park and recreational lands, publicly-owned wildlife and waterfowl refuges, and historic sites have been identified in the project study area at this time. However, the evaluation of sites identified in future cultural resource survey

investigations for their potential as 4(f) resources must be taken into consideration should there be USDOT agency funding/involvement in the project. In addition, there is the potential for publicly-owned park and recreational lands, publicly-owned wildlife and waterfowl refuges to be developed within the project study area prior to the future design and construction of the project roadways. A re-evaluation as to the presence of Section 4(f) resources should be made at that time.

5.2 6(f) Resources

The Land and Water Conservation Fund Act (LWCF) was signed into law on September 3, 1964. The purpose of the LWCF is to provide matching grants to state and local governments to acquire and develop public outdoor recreation areas and facilities. The LWCF strives to protect and maintain these areas and facilities for long term, high quality outdoor recreation experiences. The provisions under Section 6(f)(3) mandate that these investments be protected, but recognize that changes in land use, especially in growing urban areas, can impact these protected areas. The LWCF Act contains provisions to protect these areas from conversions. Property that is acquired or developed cannot be converted to uses other than public outdoor recreation uses unless it is approved by the Secretary of the Interior. The Secretary can approve such a land use change if the conversion is consistent with the then existing comprehensive statewide outdoor recreation plan. When necessary, the Secretary can also require that other properties be identified as a substitute for the loss of a converted outdoor recreation area. The other properties should be at least of equal fair market value and be similar in usefulness and location as the converted outdoor recreation area (National Park Service, 2004).

Research of the LWCF funded projects in Arizona was performed in August 2010, using information from the Arizona State Park's webpage (http://www.azparks.gov/grants/library.html). This research determined that no properties were funded with LWCF funds within the project study area. Therefore, there are no anticipated impacts to 6(f) resources at this time. However, there is the potential for public outdoor recreation areas and facilities to be acquired and/or developed within the project study area that utilize LWCF funding prior to the future design and construction of the project roadways. A re-evaluation as to the presence of Section 6(f) resources should be made at that time.

6. ENVIRONMENTAL OVERVIEW CONCLUSIONS

The evaluation of the existing environment, socioeconomic considerations, physical and natural environment, cultural resources, and potential Section 4(f) and 6(f) resources conducted for the Northern Parkway/Tonopah Parkway CFS indicates that the following additional research, analysis, coordination, and/or permitting will be required (dependent upon funding source) prior to proposed roadway improvements within the project study area. This EO is not intended to meet the requirements of NEPA.

6.1 Land Jurisdiction

Maricopa County has jurisdiction over the majority of the land and roadways within the project study area. The Town of Buckeye has jurisdiction over the land within its town limits adjacent to and within the project study area. Portions of the project study area currently under Maricopa County jurisdiction are also within the Buckeye Municipal Planning Area. Additional planning and design studies regarding Northern Parkway and Tonopah Parkway will need to follow the procedures and guidelines related to environmental matters of the corresponding jurisdictional authority.

6.2 Land Ownership and Use

The project study area contains land owned or managed by the BLM and ASLD. Both agencies are active members of the project's Technical Advisory Committee. As additional planning and design studies occur for Northern Parkway and Tonopah Parkway and final alignments are determined, various agency-specific studies may be needed. If the Northern Parkway or Tonopah Parkway alignments include BLM land, then BLM will require a NEPA document to be prepared to Department of Interior standards. The NEPA document will also be required to meet Federal Highway Administration (FHWA) standards if Federal Transportation Funds are used for the project. The BLM NEPA study will require a visual resource analysis as part of the environmental clearance process.

If the Northern Parkway or Tonopah Parkway alignments include ASLD land, ASLD will require a right-of-way easement permit to be processed. As part of this permit process, various site specific environmental studies will be required. These studies include: threatened and endangered species surveys, native plant surveys including a stumpage fee calculation for plant salvage operations, a Phase I Environmental Site Assessment, and a cultural resource survey.

6.3 Socioeconomic Considerations and Title VI/Environmental Justice Populations

There are two census tract block groups where some of the American Indian/Alaska Native, Low-Income, and LEP population percentages are at least double the respective population percentages of the County.

Because this is a corridor feasibility study and the detailed roadway alignment, right-of-way requirements, and project schedules are unknown, exact impacts cannot be determined at this time. General impacts such as additional right-of-way acquisitions, increases in ambient noise levels, socioeconomic impacts, community disruptions, and residential displacements can be assumed with a major roadway project. In addition, it can be assumed that a new roadway within the project study area will enhance overall mobility, benefiting those living in and around the project study area.

It should be noted that the Title VI/Environmental Justice and LEP population numbers and percentages cover an area that is larger than the anticipated roadway footprint, and that the impacts to disadvantaged populations could change depending on the location of the proposed roadway alignment within the project study area. Therefore, further consideration for these disadvantaged populations may be warranted for future environmental clearance documents. When considering alignments for the proposed roadways in the project study area, the areas that have disproportionate Title VI/Environmental Justice and LEP populations should be avoided where feasible.

6.4 Threatened and Endangered Species

A Biological Review or Biological Evaluation will likely be required as additional planning and design studies occur for Northern Parkway and Tonopah Parkway and final alignments are determined. The USFWS currently lists 16 species that are protected under the Endangered Species Act. No suitable habitat for any threatened or endangered species or their habitat was observed during field reconnaissance. Suitable habitat does exist for the Tucson shovel-nosed snake, which is currently listed as a candidate species. Future environmental documentation shall verify that no species or their habitat protected under the Endangered Species Act will be impacted when project alignment is finalized. During future planning and design studies, the USFWS list of threatened, endangered, proposed and candidate species and AGFD Heritage Database Management System should be reviewed to determine if new species have been identified or any changes in listing status have occurred.

6.5 Wildlife of Special Concern in Arizona

The AGFD lists one wildlife species of concern within three miles of the project study area. The species listed by the AGFD is the Sonoran desert tortoise. Additionally, suitable habitat exists for the western burrowing owl, a species protected under the Migratory Bird Treaty Act of 1918. Because the construction of Northern Parkway and Tonopah Parkway will include conversion of native desert into roadway right-of-way, it is recommended that MCDOT determine the presence or absence of these species, analyze potential project-related impacts, and develop appropriate mitigation measures to minimize impacts to these species.

6.6 Wildlife Crossing and Movement Corridors

There are two PLZs (PLZ 64 and PLZ 65) that are partially within the project study area. PLZs, wildlife management areas, and natural drainage channels are critical for the movement and genetic diversity of the various wildlife species found in the project study area vicinity.

Wildlife movement between habitat blocks and the PLZs should be considered during final design to determine the best way to construct the roadway while maintaining uninhibited wildlife movement and connectivity within the project study area and vicinity. Major drainages and upland areas should incorporate wildlife-friendly roadway design considerations such as wildlife friendly fencing and oversized select drainage culverts/bridges for maximum large mammal passage to adequately address maintaining or improving wildlife movement capabilities within and through roadway right-of-way, especially along regional drainages. Coordination with the AGFD should be continued to ensure that wildlife-friendly roadway crossings are incorporated where appropriate into the roadway design.

6.7 Invasive/Noxious Weeds

An invasive/noxious weed survey should be conducted prior to construction of the roadway to determine whether noxious weeds exist within the alignment and to establish whether decontamination procedures should be put in place prior to any construction activities per Executive Order 13112 and the Arizona Native Plant Law and develop appropriate mitigation measures.

6.8 Protected Native Plants

Native plants are present within the project study area. Once the roadway alignment is finalized, a native plant survey should be conducted to determine the presence of protected native plants within the proposed alignment. Coordination with ADA should be conducted if any protected native plants are identified within the proposed alignment. In addition, impacts to native plants may require a Notice of Intent and/or specific permitting per Article 11: Arizona Native Plants.

6.9 Floodplains

Coordination with FCDMC and FEMA will be required if impacts are proposed within floodways. Project components associated with this study are anticipated to impact FEMA mapped floodplains and floodways. A CLOMR should be prepared during final design per the National Flood Insurance Act, Maricopa County Floodplain Regulations, and CLOMR requirements if floodplains are altered.

6.10 Water Quality

There are no impaired waters present within the project study area. During the alignment selection process, this information should be re-verified to ensure that no impaired waters have been listed after completion of this document.

6.11 Section 404/401 of the CWA

A Jurisdictional Delineation may be required during future project design to determine the regulatory boundaries of waters of the U.S. and whether a Section 404 NWP or IP is required for construction (bridge and roadway features and/or dredging and fill activities) per CWA and Corps requirements.

A Section 404 Permit (NWP or IP) and a Section 401 Water Quality Certification will likely be required to construct a new bridge across the Hassayampa River and other drainages. Under the NWP Program in the State of Arizona, the Section 401 Water Quality Certification process is typically granted a conditionally certified status.

6.12 Prime and Unique Farmland

There are soils that are currently considered Prime Farmland soils in the western portion of the project study area where there are active existing agricultural land uses. While the *Hassayampa Framework Study* assumed there will be no actively farmed and irrigated land within the project study area in the buildout condition, consideration should be given to potential impacts to the Prime Farmland that may still exist when planned roadways are ultimately implemented within the project study area.

6.13 Arizona Pollutant Discharge Elimination System

An AZPDES permit and a SWPPP will be required for improvements that disturb more than one acre of land or that disturb waters of the U.S.

6.14 Soils

There are numerous soil types within the project study area. The most common soil types are Gunsight complex, Laveen, and Rillito. The suitability of the project study area soil types for roadway construction should be considered during preliminary and final design.

6.15 Visual Resources

A new roadway facility will have some visual impacts within the project study area. A visual resource analysis should be conducted as part of any future environmental document process. VRM staff from the BLM need to be included for those portions of the project located near BLM-managed land.

6.16 Air Quality

The project study area is located within the air quality non-attainment areas for eight-hour ozone. Proposed improvements associated with Northern Parkway and Tonopah Parkway need to be included in the MAG *Transportation Improvement Plan* for at least one year and no more than three years, prior to construction. During construction of proposed improvements, any construction activity located within Maricopa County must adhere to applicable local air quality rules, ordinances, and permitting per CAA, ADEQ, Arizona Revised Statutes Title 49, and Maricopa County Air Pollution Control Regulations. Although the project study area is currently within attainment areas for other pollutants, future environmental documentation shall verify the status for all pollutants when the project alignment is finalized.

6.17 Noise Impacts

An evaluation of the future noise quality compared against the existing noise data for the project study area will be needed. Noise receivers were identified within the project study area and include existing and planned residential areas, and recreational open space. In addition, local noise ordinances need to be evaluated for future project development per FHWA, 23 CFR 772, and MCDOT Noise Abatement Policy requirements.

6.18 Hazardous Materials

Additional investigation is recommended for the project study area due to the potential for currently unknown impacts to soil and/or groundwater stemming from the current and historic land uses. Due to the anticipated need for right-of-way acquisition, a Phase I ESA should be conducted prior to acquisition of new right-of-way to allow the purchaser the opportunity to qualify for Landowner Liability Protections under CERCLA. A hazardous material evaluation is recommended once right-of-way limits have been finalized. Additionally, a hazardous building materials evaluation should be conducted where appropriate. Due to the culverts and other concrete structures in the project area and the potential for asbestos containing materials, it is recommended that asbestos surveys be performed prior to construction activities.

6.19 Cultural Resources

The entire project study area has not been completely surveyed for cultural resources. In fact, approximately 50 percent of the project study area has been previously surveyed and approximately 40 percent of that (or 20 percent of the entire project study area) was surveyed in or before 2000. As alternatives are selected, additional analysis will be required to determine the level and adequacy of previous cultural resource survey coverage. Once an APE has been established for the project, areas within the APE that have not been previously surveyed will need to have a Class III pedestrian survey completed that meets the Federal (Secretary of the Interior), SHPO, and Arizona State Museum standards prior to any construction activity. Furthermore, if areas were surveyed prior to 2000 (or over 10 years old), the survey report should be re-evaluated to determine if it meets the current standards. If the older survey's methodology, staff qualifications, and documentation (site type identification, recordation, temporal threshold, and tribal/agency consultation) do not meet current standards, the survey should be updated and/or the project area should be surveyed again.

All cultural resources identified within the project's APE should be evaluated for their NRHP eligibility. Historic context studies, specifically *Historic Homesteading in Arizona 1870-1942* (Stein 1990) and *Prehistoric to Historic Transition Period in Arizona, Circa A.D. 1519 to 1692* (Gilpin and Phillips 1998), should be used to assist in the evaluation process. If resources, particularly NRHP listed or eligible resources cannot be avoided by project activities, they should be treated in accordance with the Secretary of the Interior's Guidelines for the Treatment of Historic Properties and applicable state laws.

Tribal consultation should be initiated early in the planning process to seek information regarding areas of cultural importance to native people. As with other cultural resources, the significance and potential NRHP eligibility of all identified TCPs located within or in the proximity of the project's APE will need to be evaluated.

Consultation and compliance with the Arizona State Historic Preservation Act, Arizona Antiquities Act and Section 106 of the NHPA (if considered a federal undertaking) will likely be necessary as this project progresses per the National Historic Preservation Act and Arizona State Historic Preservation Act requirements.

6.20 Candidate and Potential 4(f) Resources

No Section 4(f) resources, including publicly-owned park and recreational lands, publicly-owned wildlife and waterfowl refuges, and historic sites have been identified in the project study area at this time. However, the evaluation of sites identified in future cultural resource survey investigations for their potential as 4(f) resources must be taken into consideration should there be USDOT agency funding/involvement in the project. In addition, there is the potential for publicly-owned park and recreational lands, publicly-owned wildlife and waterfowl refuges to be developed within the project study area prior to the future design and construction of project roadways. A re-evaluation as to the presence of Section 4(f) resources should be made at that time.

6.21 6(f) Resources

There are no identified 6(f) resources in the project study area. However, there is the potential for public outdoor recreation areas and facilities to be acquired and/or developed within the project study area that utilize LWCF funding prior to the future design and construction of the project

roadways. A re-evaluation as to the presence of Section 6(f) resources should be made at that time.

6.22 Summary of Future Environmental Studies

The following environmental studies and surveys should be performed prior to construction of new roadways in the project study area:

- Biological Review or Biological Evaluation;
- Surveys for the western burrowing owl;
- Surveys for the Sonoran desert tortoise;
- Surveys for the Tucson shovel-nosed snake (if survey protocol has been developed by time of construction; otherwise, coordinate with USFWS if still listed);
- Invasive/noxious weed surveys;
- Protected native plant surveys;
- Jurisdictional Delineation and applicable permit application (NWP or IP);
- Visual resource analysis and coordination with the VRM staff of the BLM;
- Noise study;
- Phase I Environmental Site Assessment and asbestos surveys;
- Class III Cultural Pedestrian Survey; and
- Section 4(f) and 6(f) resource survey and evaluation.

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