

APPENDIX D

BIOLOGICAL AND ARCHAEOLOGICAL DESKTOP REVIEW SUMMARY

This appendix includes summaries of both the biological and archaeological desktop reviews that were conducted for each of the selected fifteen (15) conceptual solutions. Following the summaries in this appendix are the full reports for each of these resources.

BIOLOGICAL SUMMARY

A desktop Biological Evaluation was conducted for each of the selected conceptual solutions listed in *Table 1*. The proposed action would have no effect on any Federally-listed threatened or endangered species or Critical Habitat; and is not likely to jeopardize species proposed for listing. Additionally, the proposed action would not likely lead to a trend toward listing for any of the other sensitive species considered (*Table 1*).

Table 1. Summary of Biological Concerns and Recommended Mitigation Measures.

NO.	NAME	BIOLOGICAL CONCERNS	RECOMMENDED MITIGATION MEASURES
1.4	Grandview Avenue Stormdrain (High School Stormdrain)	<ol style="list-style-type: none"> 1. Potential habitat for Gila monster and Sonoran desert tortoise 2. Potential habitat for burrowing owl 3. Potential habitat for freckled milkvetch 4. Potential migratory bird habitat 	A biological pre-construction survey is recommended for Gila monster, Sonoran desert tortoise, burrowing owl, and freckled milkvetch only in areas that are not previously disturbed. Relocations of owl, Gila monster, or tortoise may be necessary if they have active burrows within solution areas.
1.8	Detention Upstream of Andy Devine	<ol style="list-style-type: none"> 1. Potential habitat for Gila monster and Sonoran desert tortoise 2. Potential habitat for burrowing owl 3. Potential habitat for freckled milkvetch 4. Potential migratory bird habitat 	A biological pre-construction survey is recommended for Gila monster, Sonoran desert tortoise, burrowing owl, and freckled milkvetch. Relocations of owl, Gila monster, or tortoise may be necessary if they have active burrows within the solution area.
1.11	4th Avenue Basin	<ol style="list-style-type: none"> 1. Potential habitat for Gila monster and Sonoran desert tortoise 2. Potential habitat for burrowing owl 3. Potential migratory bird habitat 	A biological pre-construction survey is recommended for Gila monster, Sonoran desert tortoise, and burrowing owl. Relocations of owl, Gila monster, or tortoise may be necessary if they have active burrows within the solution area.
2.3	Main Street Stormdrain Extension	No biological concerns	No recommendations
2.4	Fairgrounds Boulevard Stormdrain	No biological concerns	No recommendations

NO.	NAME	BIOLOGICAL CONCERNS	RECOMMENDED MITIGATION MEASURES
3.1	Harrod Avenue Basin Upgrades	1. Potential habitat for burrowing owl 1. Potential migratory bird habitat	A biological pre-construction survey is recommended for burrowing owl only in areas that are not previously disturbed. Relocations of owls may be necessary if they have active burrows within the solution area.
3.7	I-40 Regional Retention	1. Potential habitat for Gila monster and Sonoran desert tortoise 2. Potential habitat for burrowing owl 3. Potential migratory bird habitat	A biological pre-construction survey is recommended for Gila monster, Sonoran desert tortoise, and burrowing owl. Relocations of owl, Gila monster, or tortoise may be necessary if they have active burrows within the solution area.
5.1	Pinal Street Basin	1. Potential habitat for burrowing owl 2. Potential migratory bird habitat	A biological pre-construction survey is recommended for burrowing owl. Relocations of owls may be necessary if they have active burrows within the solution area.
6.1/ 6.2	Anson Smith Road Collector Channel and Basins	1. Potential habitat for burrowing owl 2. Potential migratory bird habitat	A biological pre-construction survey is recommended for burrowing owl only in areas that are not previously disturbed. Relocations of owls may be necessary if they have active burrows within the solution area.
6.3/ 6.4	Harvard Street Improvements and Basins	1. Potential habitat for burrowing owl 2. Potential migratory bird habitat	A biological pre-construction survey is recommended for burrowing owl only in areas that are not previously disturbed. Relocations of owls may be necessary if they have active burrows within the solution area.
6.5	Western Avenue Stormdrain	No biological concerns	No recommendations
6.7	Vista Basin	1. Potential habitat for Gila monster and Sonoran desert tortoise 2. Potential habitat for burrowing owl 3. Potential migratory bird habitat	A biological pre-construction survey is recommended for Gila monster, Sonoran desert tortoise, and burrowing owl. Relocations of owl, Gila monster, or tortoise may be necessary if they have active burrows within the solution area.
6.8	Lower Crestwood Channel	2. Potential habitat for burrowing owl 3. Potential migratory bird habitat	A biological pre-construction survey is recommended for burrowing owl. Relocations of owls may be necessary if they have active burrows within the solution area.
7.2	Grace Neal Channel	1. Potential habitat for Gila monster and Sonoran desert tortoise 2. Potential habitat for burrowing owl 3. Potential migratory bird habitat	A biological pre-construction survey is recommended for Gila monster, Sonoran desert tortoise, and burrowing owl. Relocations of owl, Gila monster, or tortoise may be necessary if they have active burrows within the solution area.
7.6	Shane Channel	1. Potential habitat for Gila monster and Sonoran desert tortoise 2. Potential habitat for burrowing owl 3. Potential migratory bird habitat	A biological pre-construction survey is recommended for Gila monster, Sonoran desert tortoise, and burrowing owl. Relocations of owl, Gila monster, or tortoise may be necessary if they have active burrows within the solution area.

Specific Sonoran Desert Tortoise Measures:

The Arizona Interagency Desert Tortoise Team (AIDTT) recommends mitigation processes and measures, where appropriate, including additional surveys when presence/absence is questionable or suitable habitat exists. It is recommended to contact AGFD to determine appropriate mitigation measures. Additional surveys may be recommended, as well as coordination with resource agencies, to address and minimize potential impacts that could result from project activities. Construction personnel should be made aware of the potential of desert tortoise to exist in the project area and should be educated in the preservation and avoidance of tortoise, including contact information for responsible staff at AGFD.

A tortoise protection and education program should be implemented to educate all employees, inspectors, supervisors, contractors, and subcontractors who carry out proposed activities at each of the conceptual solution project sites.

The education program should include discussions of the following:

1. the legal and sensitive status of the tortoise;
2. a brief discussion of tortoise life history and ecology;
3. mitigation measures designed to reduce adverse effects to tortoises;
4. and protocols to follow if a tortoise is encountered, including appropriate points of contact.

If a tortoise is discovered on the site during development, work should stop in the immediate vicinity, and the AGFD should be contacted immediately to determine appropriate mitigation measures and to minimize any potential effects from project activities on the tortoise.

Specific Western Burrowing Owl Measures:

Although individual owls may be impacted by the proposed solutions, adults should be able to relocate to avoid harm from project activities. However, because they are ground-dwellers and juvenile birds (or eggs) are unable to relocate prior to construction, a burrowing owl clearance survey should be conducted according to the *AGFD 2009 Burrowing Owl Project Clearance Guidance for Landowners*, especially if ground disturbing activities are to occurring during the burrowing owl breeding season of March 1 to August 31.

Specific Migratory Bird Mitigation Measures:

To avoid potential impacts to and unintentional take of migratory bird species, it is recommended that if substantial large shrub or tree removal is required, it should take place outside the breeding season (*March 1 to August 31*) to the extent practicable. If a substantial amount of large shrub or tree removal needs to occur during the breeding season, a pre-construction survey for nesting birds should be completed in undisturbed portions of the conceptual solution areas prior to removal to ensure there are no nesting birds on site, or a monitor could be present during construction activities.

ARCHAEOLOGICAL SUMMARY

A preliminary cultural resources archival review was conducted for the Kingman Area Drainage Master Plan, Mohave County, Arizona. The records searches was conducted via AZSITE, the online database for archaeological project and site records maintained by the Arizona State Museum (ASM).

The records review looked areas surrounding 15 locations:

- Stockton Hill Avenue/High School Stormdrain (1.4)
- Detention Upstream of 8th Street (1.8)
- 4th Avenue Basin (1.11)
- Main Street Stormdrain Extension (2.3)
- Fairgrounds Boulevard Stormdrain (2.4)
- Harrod Avenue Basin Upgrades (3.1)
- I-40 Regional Retention Basins (3.7)
- Pinal Street Basin (5.1)
- Anson Smith Road Collector Channel and Basin (6.1/6.2)
- Harvard Street Improvements and Basin (6.3/6.4)
- Western Avenue Stormdrain (6.5)
- Vista Basin (6.7)
- Lower Crestwood Channel (6.8)
- Grace Neal Channel (7.2)
- Shane Channel (7.6)

The AZSITE database yielded 53 previous surveys conducted within 1 mile of the solution areas listed above. These previous projects depicted in AZSITE have resulted in 62 previously recorded sites, an additional 63 historic structures, and one historic district.

These 62 sites include 14 “advanced sites” and eight State Historic Preservation Office (SHPO) Mohave County Sites. With the exception of one Bureau of Land Management (BLM) and many of the County Sites, the remaining sites have all been assigned ASM numbers. Advanced sites in AZSITE are sites recorded during projects that are still in progress and have not been completely entered into the online data. These sites have limited associated information and the site plots are provisional. The majority of the Advanced Sites are located to the northwest of downtown Kingman. Two Advanced Sites are located east of town and south of Interstate 40. The 63 historic structures shown in AZSITE are not associated with ASM, BLM, or SHPO site numbers in AZSITE. Of these, six occur in close proximity to the Stockton Hill Avenue/High School Stormdrain (1.4). Finally, the Kingman Commercial Historic District includes 4.5 acres along the 300 and 400 blocks of Andy Devine Avenue, located downtown east of the Stockton Hill Avenue/High School Stormdrain (1.4).

Overall, the sites that have been identified are dominated by historic trash dumps and scatters, primarily located around the periphery of Kingman, followed by a few historic structures and roads. Prehistoric sites are few and consist of a village site, two temporary camps, and two ceramic scatters. The majority of these sites are not eligible to the National Register of Historic Places (National Register or NRHP), or they are unevaluated or there is no data. Only four sites are recommended eligible to the National Register. These include a Cerbat temporary camp, an extensive historic trash scatter, the Beale Wagon Road, and historic US Route 93. Historic Route 66 is determined eligible to the NRHP and seven sites identified in AZSITE are listed on the National Register. The six historic structures near the Stockton Hill Avenue/High School Stormdrain (1.4) are also on the National Register.

None of the previously recorded sites occur within the proposed KADMP solution locations; however, historic Route 66, runs immediately north of the Detention Upstream of 8th Street (Location 1.8), and six structures occur near solution area 1.4.

In summary, no surveys have occurred within any of the proposed solution locations. Therefore, all solution locations would require a Class III cultural resources inventory prior to any ground disturbing activities. Most of the sites that have been identified were found in larger block surveys around the periphery of Kingman; therefore, an abundance of sites within the proposed solution areas is not anticipated. However, sites are possible and would mostly likely be historic in nature. Solution areas located near historic downtown Kingman may have in-use historic structures present near or immediately adjacent to them.

TECHNICAL MEMORANDUM: DESKTOP BIOLOGICAL EVALUATION

1.1 Introduction

The Kingman Area Drainage Master Plan (KADMP) project is being performed by JE Fuller Hydrology and Geomorphology, Inc. (JE Fuller) with the authorization of the City of Kingman. The KADMP is being developed to meet four primary objects:

- Evaluate and identify flooding hazard and drainage problems within the project area by the implementation of a work plan which includes data collection, review of previous studies, information gathering from public agencies and residents, hydrologic and hydraulic modeling
- Develop a series of alternatives to either partially or wholly mitigate the hazards identified in the first objective
- Conduct a desktop cultural and environmental analyses for the conceptual solutions to identify their potential impacts on the drainage problems
- Provide stakeholder coordination and public outreach of the project through a series of public meetings to inform of the existing hazards and to present the mitigation alternatives

The KADMP study area is approximately 84.6 square miles and is located in Mohave County. The results of this study will be used as a planning tool and as input to the design of potential future drainage infrastructure and flood mitigation measures that are appropriate for the physical environment for both existing and future development.

The project team has identified and begun preparation of conceptual design plans for the fifteen (15) solutions listed below in *Table 1*. All solutions lie within the Kingman, Stockton Hill, and Rattlesnake Hill 7.5-minute topographic quadrangles (quads) (Earth Survey 2020). Location descriptions and Public Land Survey System information are provided in *Table 1* for each solution (Earth Point 2020).

Table 1. List of selected solutions.

NO.	DRAINAGE SOLUTION	LOCATION	T/R/SECTION
1.4	Stockton Hill Avenue Stormdrain (High School Stormdrain)	From intersection of Stockton Hill Ave. and Silver St. to Clack Canyon Wash, Kingman, AZ	21N/17W, Section 23
1.8	Detention Upstream of 8th Street	Northwest corner of Andy Devine Ave. and Chadwick Dr., Kingman, AZ	21N/17W, Section 24 21N/16W, Section 19
1.11	4th Avenue Basin	4th Ave. east of 6th St., Kingman, AZ	21N/17W, Section 25
2.3	Main Street Stormdrain Extension	Along Main St. from Pasadena Ave. to Detroit Ave., Kingman, AZ	21N/16W, Sections 07 & 18
2.4	Fairgrounds Boulevard Stormdrain	Along Fairgrounds Blvd. from Sunset Blvd. to Detroit Ave., Kingman, AZ	21N/16W, Sections 07 & 18
3.1	Harrod Avenue Basin Upgrades	West end of Harrod Ave., Kingman, AZ	21N/16W, Section 18
3.7	I-40 Regional Retention	One area north of Airfield Ave. and east of Sage St. and three areas north of Windsor Ave., Kingman, AZ	21N/16W, Sections 08 & 09
5.1	Pinal Street Basin	East of Pinal St., west of Benton St., north of Kino Ave. and south of Coronado Ave., Kingman, AZ	21N/16W, Section 06

NO.	DRAINAGE SOLUTION	LOCATION	T/R/SECTION
6.1/ 6.2	Anson Smith Road Collector Channel and Basin	Along Anson Smith Rd. from Indian Canyon Rd. to Harvard St./ Within a vacant parcel located south of Anson Smith Rd. and north of Wilshire Ave., Kingman, AZ	21N/17W, Section 12
6.3/ 6.4	Harvard Street Improvements and Basin	Multiple locations upstream of a vacant parcel located south of Sycamore Ave. along the west side of Harvard St., Kingman, AZ	21N/17W, Section 12
6.5	Western Avenue Stormdrain	From Sycamore Ave. to Beverly Ave. along Western Ave., Kingman, AZ	21N/17W, Section 12 21N/16W, Section 07
6.7	Vista Basin	West of Cerbat Vista Dr. within the limits of the City of Kingman, Kingman, AZ	21N/17W, Section 01
6.8	Lower Crestwood Channel	Within the Coronado Channel alignment, Kingman, AZ	21N/16W, Section 06
7.2	Grace Neal Channel	Grace Neal Ave. alignment from Stockton Hill Rd. to Mohave Wash, Kingman, AZ	22N/17W, Section 24 22N/16W, Section 19
7.6	Shane Channel	Along Shane Dr. and Potter Ave., Kingman, AZ	22N/17W, Section 25

This biological evaluation technical memorandum has been prepared to describe the general ecological characteristics of the solution areas in relation to sensitive species habitat requirements. Because the solutions areas are still in the beginning stages of design, only a desktop analysis of biological resources was performed, and no field surveys were conducted. This information was used to develop a list of possible mitigation measures to consider during solution implementation to avoid impacts to sensitive species and important habitat features.

1.2 Hydrology and Terrain

The solutions in downtown Kingman (Area 1) lie in hilly terrain while the solutions scattered throughout the rest of the Kingman area are in relatively flat areas (in the basin nestled within the surrounding mountain ranges). The average summer high temperature for the Kingman area is 96 degrees Fahrenheit in July. The average winter low temperature for the area is 31 degrees Fahrenheit in January. The average precipitation amount for the area is 10.5 inches that primarily falls as rain (WRCC 2020). The Hydrologic Units for each solution are provided in *Table 2*. All 15 chosen solutions fall within two different 12-digit hydrologic units, two different 10-digit units, and two different 8-digit units (University of Arizona 2020).

Table 2. Watersheds of the Solution Areas by Number.

NO.	HUC 12 CODE	HUC 12 NAME	HUC 12 ACRES	HUC 10 CODE	HUC 10 NAME	HUC 10 ACRES	HUC 8 CODE	HUC 8 NAME	HUC 8 ACRES
1.4	150301030201	Clack Canyon	8,368	1503010302	Thirteenmile Wash-Sacramento Wash	225,982	15030103	Sacramento Wash	852,375
1.8	150301030201	Clack Canyon	8,368	1503010302	Thirteenmile Wash-Sacramento Wash	225,982	15030103	Sacramento Wash	852,375
1.11	150301030201	Clack Canyon	8,368	1503010302	Thirteenmile Wash-Sacramento Wash	225,982	15030103	Sacramento Wash	852,375
2.3	150100070208	Town of Hilltop	45,757	1501000702	Frees Wash	265,858	15010007	Red Lake	905,251



NO.	HUC 12 CODE	HUC 12 NAME	HUC 12 ACRES	HUC 10 CODE	HUC 10 NAME	HUC 10 ACRES	HUC 8 CODE	HUC 8 NAME	HUC 8 ACRES
2.4	150100070208	Town of Hilltop	45,757	1501000702	Frees Wash	265,858	15010007	Red Lake	905,251
3.1	150100070208	Town of Hilltop	45,757	1501000702	Frees Wash	265,858	15010007	Red Lake	905,251
3.7	150100070208	Town of Hilltop	45,757	1501000702	Frees Wash	265,858	15010007	Red Lake	905,251
5.1	150100070208	Town of Hilltop	45,757	1501000702	Frees Wash	265,858	15010007	Red Lake	905,251
6.1/ 6.2	150100070208	Town of Hilltop	45,757	1501000702	Frees Wash	265,858	15010007	Red Lake	905,251
6.3/ 6.4	150100070208	Town of Hilltop	45,757	1501000702	Frees Wash	265,858	15010007	Red Lake	905,251
6.5	150100070208	Town of Hilltop	45,757	1501000702	Frees Wash	265,858	15010007	Red Lake	905,251
6.7	150100070208	Town of Hilltop	45,757	1501000702	Frees Wash	265,858	15010007	Red Lake	905,251
6.8	150100070208	Town of Hilltop	45,757	1501000702	Frees Wash	265,858	15010007	Red Lake	905,251
7.2	150100070208	Town of Hilltop	45,757	1501000702	Frees Wash	265,858	15010007	Red Lake	905,251
7.6	150100070208	Town of Hilltop	45,757	1501000702	Frees Wash	265,858	15010007	Red Lake	905,251

Several ephemeral drainages pass through the solution areas including Clack Canyon and Mohave Wash. These ephemeral drainages are shown in the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory as a non-wetland intermittent riverine drainage which may be seasonally flooded (*Table 3*) (USFWS 2020a and 2020b).

Table 3. National Wetland Inventory wetland types within the reaches of the project area.

NO.	WETLAND TYPE	CODE	CLASSIFICATION
1.4	Riverine (two features)	R4SBC	Riverine, intermittent, streambed, seasonally flooded
1.8	Riverine	R4SBC	Riverine, intermittent, streambed, seasonally flooded
6.8	Riverine	R4SBC	Riverine, intermittent, streambed, seasonally flooded
7.2	Riverine (multiple features)	R4SBC	Riverine, intermittent, streambed, seasonally flooded
7.6	Riverine (two features)	R4SBC	Riverine, intermittent, streambed, seasonally flooded

These drainages generally host xeri-riparian vegetation, but do not have any standing water or true riparian vegetation or hydric soils. Therefore, no wetland concerns apply to these solution areas.

1.3 Soils and Geology

The geology of solution areas 1.4, 1.8, 1.11, and western portions of 6.1/6.2 and 6.3/6.4 is consistent with Middle Miocene to Oligocene volcanic rocks. This geologic unit is composed of Lava, tuff, fine-grained intrusive rock, and diverse pyroclastic rocks. Thick felsic volcanic sequences can form prominent cliffs and range fronts within this geologic unit. Most volcanic rocks are 15 to 25 Ma in central and western Arizona (including around the Kingman area) (Richard et al. 2000 and Arizona Geological Survey 2020).



The eastern portions of solution areas 6.1/6.2, 6.3/6.4, and the remaining other solutions are consistent with Quaternary Surficial Deposits, Undivided. This geologic unit is composed of unconsolidated to strongly consolidated alluvial and eolian deposits with coarse, poorly sorted alluvial fan and terrace deposits on middle and upper piedmonts and along large drainages; sand, silt and clay on alluvial plains and playas; and wind-blown sand deposits. This unit is approximately 0-2 Ma in age (Richard et al. 2000 and Arizona Geological Survey 2020).

Natural Resources Conservation Service (NRCS) soil types and ecological types within the solution areas are provided in *Table 4*. The NRCS Web Soil Survey Custom Report is include in *Appendix A* of this memo. There are no hydric soils or prime farmlands within the solution areas (NRCS 2020).

Table 4. Soil Types within the Solution Areas.

NO.	SOIL CODE	SOIL NAME	SOIL DESCRIPTION	HYDRO SOIL GROUP	ECOLOGICAL SITE
1.4	6	Arizo-Franconia-Riverwash complex, 1-3% slopes	Gravelly sandy loams and loamy sands found on floodplains with parent material consisting of alluvium derived from mixed sources.	A	Sandy Wash 6-9" p.z. (R030XB218AZ)
	150	Tumarion-Nickel family complex, 8-35% slopes	Extremely/very cobbly sandy/silty loams found on mesas with parent material consisting of alluvium derived from basalt.	D/B	Loamy Slopes 10-13" p.z. Cobbly (R030XC309AZ) and Basalt Hills 10-13" p.z. Limy (R030XC333AZ)
	155	Urban land-Calvista family complex, 2-10% slopes	Very gravelly/cobbly loams found on mountains/hills with parent material consisting of alluvium derived from volcanic rock.	D	Volcanic Hills 10-13" p.z. (R030XC332AZ)
1.8	150	Tumarion-Nickel family complex, 8-35% slopes	Extremely/very cobbly sandy/silty loams found on mesas with parent material consisting of alluvium derived from basalt.	D/B	Loamy Slopes 10-13" p.z. Cobbly (R030XC309AZ) and Basalt Hills 10-13" p.z. Limy (R030XC333AZ)
	155	Urban land-Calvista family complex, 2-10% slopes	Very gravelly/cobbly loams found on mountains/hills with parent material consisting of alluvium derived from volcanic rock.	D	Volcanic Hills 10-13" p.z. (R030XC332AZ)
1.11	149	Tumarion very cobbly loam, 2-15% slopes	Very cobbly or extremely gravelly loams found on mesas with parent material consisting of alluvium derived from volcanic rock.	D	Limy Upland 10-13" p.z. (R030X311AZ)
	155	Urban land-Calvista family complex, 2-10% slopes	Very gravelly/cobbly loams found on mountains/hills with parent material consisting of alluvium derived from volcanic rock.	D	Volcanic Hills 10-13" p.z. (R030XC332AZ)
2.3	70	Jageron very gravelly loam, 0-4% slopes	Gravelly sandy clay loams found on fan terraces with parent material consisting of alluvium derived from volcanic rock.	C	Limy Fan 6-9" p.z. (R030XB211AZ)
	155	Urban land-Calvista family complex, 2-10% slopes	Very gravelly/cobbly loams found on mountains/hills with parent material consisting of alluvium derived from volcanic rock.	D	Volcanic Hills 10-13" p.z. (R030XC332AZ)



NO.	SOIL CODE	SOIL NAME	SOIL DESCRIPTION	HYDRO SOIL GROUP	ECOLOGICAL SITE
2.4	70	Jagerson very gravelly loam, 0-4% slopes	Gravelly sandy clay loams found on fan terraces with parent material consisting of alluvium derived from volcanic rock.	C	Limy Fan 6-9" p.z. (R030XB211AZ)
3.1	70	Jagerson very gravelly loam, 0-4% slopes	Gravelly sandy clay loams found on fan terraces with parent material consisting of alluvium derived from volcanic rock.	C	Limy Fan 6-9" p.z. (R030XB211AZ)
3.7	70	Jagerson very gravelly loam, 0-4% slopes	Gravelly sandy clay loams found on fan terraces with parent material consisting of alluvium derived from volcanic rock.	C	Limy Fan 6-9" p.z. (R030XB211AZ)
	90	Mutang-Dutchflat complex, 0-3% slopes	Gravelly and sandy loams, loams, clay loams, and gravelly clays found on pediments and fan terraces with parent material consisting of alluvium derived from igneous rock.	D/B	Granitic/Schist Upland 10-13" p.z. Alkaline (R030XC329AZ) and Sandy Loam Upland 10-13" p.z. (R030XC321AZ)
5.1	32	Dutchflat sandy loam, 0-2% slopes	Sandy clay loams found on fan terraces with parent material consisting of alluvium derived from igneous and metamorphic rock.	B	Sandy Loam Upland 6-9" p.z. Fine (R030XB226AZ)
6.1/ 6.2	150	Tumarion-Nickel family complex, 8-35% slopes	Extremely/very cobbly sandy/silty loams found on mesas with parent material consisting of alluvium derived from basalt.	D/B	Loamy Slopes 10-13" p.z. Cobbly (R030XC309AZ) and Basalt Hills 10-13" p.z. Limy (R030XC333AZ)
	167	Whitehills very gravelly loam, 1-5% slopes	Very gravelly loam found on fan terraces with parent material consisting of alluvium derived from mixed volcanic rock.	C	Limy Upland 6-9" p.z. (R030XB214AZ)
6.3/ 6.4	150	Tumarion-Nickel family complex, 8-35% slopes	Extremely/very cobbly sandy/silty loams found on mesas with parent material consisting of alluvium derived from basalt.	D/B	Loamy Slopes 10-13" p.z. Cobbly (R030XC309AZ) and Basalt Hills 10-13" p.z. Limy (R030XC333AZ)
	167	Whitehills very gravelly loam, 1-5% slopes	Very gravelly loam found on fan terraces with parent material consisting of alluvium derived from mixed volcanic rock.	C	Limy Upland 6-9" p.z. (R030XB214AZ)
6.5	167	Whitehills very gravelly loam, 1-5% slopes	Very gravelly loam found on fan terraces with parent material consisting of alluvium derived from mixed volcanic rock.	C	Limy Upland 6-9" p.z. (R030XB214AZ)
6.7	1	Alko family cobbly loam, 0-25% slopes	Cobbly/gravelly loams found on fan terraces with parent material consisting of alluvium derived from mixed sources.	D	Limy Upland 6-9" p.z. (R030XB214AZ)
	6	Arizo-Franconia-Riverwash complex, 1-3% slopes	Gravelly sandy loams and loamy sands found on floodplains with parent material consisting of alluvium derived from mixed sources.	A	Sandy Wash 6-9" p.z. (R030XB218AZ)



6.8	19	Circular complex, 1-3% slopes	Loams found on basin floors or fan terraces with parent material consisting of alluvium derived from mixed sources.	A	Loamy Upland 6-10" p.z. (R030XB209AZ)
	32	Dutchflat sandy loam, 0-2% slopes	Sandy clay loams found on fan terraces with parent material consisting of alluvium derived from igneous and metamorphic rock.	B	Sandy Loam Upland 6-9" p.z. Fine (R030XB226AZ)
7.6	19	Circular complex, 1-3% slopes	Loams found on basin floors or fan terraces with parent material consisting of alluvium derived from mixed sources.	A	Loamy Upland 6-10" p.z. (R030XB209AZ)
	150	Tumarion-Nickel family complex, 8-35% slopes	Extremely/very cobbly sandy/silty loams found on mesas with parent material consisting of alluvium derived from basalt.	D/B	Loamy Slopes 10-13" p.z. Cobbly (R030XC309AZ) and Basalt Hills 10-13" p.z. Limy (R030XC333AZ)

1.4 General Vegetation Description

The solution areas exhibit vegetation typical of the Semidesert Grassland Biotic Community (Brown 1994) and generally consist of one or more of the following: undeveloped native desert, disturbed areas, urban areas, drainages. This community can generally be described as a perennial grass-scrub dominated landscape positioned between desertscrub below and evergreen woodland, chaparral, or plains grassland above. Because of the scarcity of water in this region, plant growth is typically sparse unless associated with a reliable water source (Brown 1994).

Common plant species characteristic of this biotic community and present within 6.0 kilometers of the project area include big galleta (*Hilaria rigida*), perennial rye grass (*Lolium perenne*), black grama (*Bouteloua eriopoda*), six-weeks grama (*Bouteloua barbata*), stink grass (*Eragrostis cilianensis*), large barnyard grass (*Echinochloa crusgalli*), mesa dropseed (*Sporobolus flexuosus*), feather windmill grass (*Chloris virgata*), honey mesquite (*Prosopis glandulosa*), one-seed juniper (*Juniperus monosperma*), scrub oak (*Quercus turbinella*), four-wing saltbush (*Atriplex canescens*), Mormon tea (*Ephedra aspera*), desert-thorns (*Lycium* spp.), canotia (*Canotia holocantha*), cat-claw acacia (*Acacia greggii*), broom snakeweed (*Gutierrezia sarothrae*), ocotillo (*Fouquieria splendens*), desert century plant (*Agave deserti*), banana yucca (*Yucca baccata*), Mojave yucca (*Yucca schidigera*), mealy goosefoot (*Chenopodium incanum*), winterfat (*Krascheninnikovia lanata*), Arizona thistle (*Cirsium arizonicum*), desert marigold (*Baileya multiradiata*), rose-heath (*Chaetopappa ericoides*), rough fleabane (*Erigiron divergens*), three-nerve goldenrod (*Solidago velutina*), buckwheats (*Eriogonum* spp.), filarees (*Erodium* spp.), lupines (*Lupinus* spp.), mallows (*Sphaeralcea* spp.), milk-vetches (*Astragalus* spp.), four-o'clocks (*Mirabilis* spp.), primroses (*Oenothera* spp.), beardtongues (*Penstemon* spp.), prickly pear (*Opuntia* spp.), chollas (*Cylindropuntia* spp.), and many others (SEINet Portal Network 2020).

Drainages or wetter areas support plant species such as desert-willow (*Chilopsis linearis*), arrow-weed (*Pluchea sericea*) and docks (*Rumex* spp.). Common invasive or non-native species within 6.0 kilometers of Kingman include Russian thistle (*Salsola tragus*), tall-hedge mustard (*Sisymbrium altissimum*), London rocket (*Sisymbrium irio*),



Missouri gourd (*Cucurbita foetidissima*), red brome (*Bromus rubens*), Johnson grass (*Sorghum halepense*), tamarisk (*Tamarix* spp.), and sliver-leaf nightshade (*Solanum elaeagnifolium*) (SEINet Portal Network 2020).

1.5 General Wildlife Description

Wildlife species commonly found in this biotic community include. Because the Semidesert Grassland Biotic Community developed rather recently in geologic time, the region does not contain many endemic species and the majority of the region's animals are characteristic of the entire arid southwest (Brown 1994).

Typical birds in the region include mourning dove (*Zenaida macroura*), Gambel's quail (*Callipepla gambelii*), roadrunner (*Geococcyx californianus*), ladder-backed woodpecker (*Picoides scalaris*), western kingbird (*Tyrannus verticalis*), ash-throated flycatcher (*Myiarchus cinerascens*), Say's phoebe (*Sayornis saya*), horned lark (*Eremophila alpestris*), common raven (*Corvus corax*), verdin (*Auriparus flaviceps*), mockingbird (*Mimus polyglottos*), curve-billed thrasher (*Toxostoma curvirostre*), black-tailed gnatcatcher (*Polioptila melanura*), cactus wren (*Campylorhynchus brunneicapillus*), curve-billed thrasher (*Taxostoma curvirostre*), verdin (*Auriparus flaviceps*), house finch (*Haemorhous mexicanus*), loggerhead shrike (*Lanius ludovicianus*), meadow lark (*Sturnella neglecta*), brown-headed cowbird (*Molothrus ater*), black -throated sparrow (*Amphispiza bilineata*), lark sparrow (*Chondestes grammacus*), and Cassin's sparrow (*Aimophila cassinii*). Raptors such as Swainson's hawk (*Buteo swainsoni*), prairie falcon (*Falco mexicanus*), American kestrel (*Falco sparverius*), turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*) and burrowing owl (*Athene cunicularia*) are also common (Brown 1994).

Because of high temperatures in this desert, many mammals are nocturnal. Characteristic mammals in the area include mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), black-tailed jackrabbit (*Lepus californicus*), spotted ground squirrel (*Spermophilus spilosoma*), hispid pocket mouse (*Perognathus hispidus*), several species of kangaroo rat (*Dipodomys* spp.), deer mouse (*Peromyscus maniculatus*), cotton rats (*Sigmodon* spp.), grasshopper mouse (*Onychomys* sp.), woodrats (*Neotoma* spp.), kit fox (*Vulpes macrotis*), desert cottontail (*Sylvilagus audubonii*), and badger (*Taxidea taxus*) (Brown 1994).

Reptiles are common and abundant in the region. Depending on the species and temperature, reptiles may be active during the day or night. Common reptiles in the region include Western diamondback rattlesnake (*Crotalus atrox*), desert-grassland hognose snake (*Heterodon nasicus*), western hooknose snake (*Ficimia cana*), desert-grassland whiptail (*Cnemidophorus uniparens*), Southwestern earless lizard (*Holbrookia texana scitula*), and Sonoran desert tortoise (*Gopherus morafkai*) (Brown 1994).

The drainages within the solution areas are very ephemeral, generally only containing water only during heavy rainfall events, and do not support any fish populations.

1.6 Species Identification

1.6.1 Federally Listed Species

A list of federal endangered and threatened species was obtained from the USFWS Information, Planning, and Conservation System (IPaC) online tool was consulted for a Trust Resources List of Threatened, Endangered, Proposed Threatened or Endangered, and Candidate species (T&E species) for the project area (*Appendix B*; USFWS 2020b). This reference also provided information pertaining to Critical Habitats, USFWS National Wildlife Refuges, USFWS migratory birds, and USFWS National Wetlands Inventory (NWI) Wetlands. There are no Critical Habitats or National Wildlife Refuges identified within the project area; the only wetlands identified within the project area are the ephemeral washes described in the Hydrology section above (USFWS 2020a). The Arizona Game



and Fish Department (AGFD) Environmental Online Review Tool was also consulted for a list of federally protected species identified as occurring within 3 miles of the selected solution areas (*Appendix C*; AGFD 2020).

1.6.2 Non-Federally Listed Sensitive Species

The Arizona Game and Fish Department (AGFD) Environmental Online Review Tool was also consulted for a list of special status species that have been identified as occurring within 3 miles of the proposed project area (*Appendix C*; AGFD 2020). Four non-federally listed species were identified by this tool as being known to occur within the 3-mile radius.

1.7 Species Effects Analysis

The most recent survey information, knowledge of species and habitats, review of literature and web sites, and site-specific locations, as well as the overall range of species, were used in determining if any special status or critical/suitable habitats would be affected by the proposed action. The following criteria were used to evaluate the potential environmental effects of these projects:

- Impacts to physical habitat for sensitive or listed plant or wildlife species
- Disturbance to animals from project implementation due to proximity to habitat

1.7.1 Federally Listed Species

Four federally listed species were identified by the USFWS IPaC tool as shown in *Table 5*. No federally listed species were identified by the AGFD tool as known to occur within a 3-mile radius of the project area. There are no critical habitats within the project area. The nearest critical habitat is for western yellow-billed cuckoo (*Coccyzus americanus*) which is over 20 miles southeast of the City of Kingman (USFWS 2014b). *Table 5* includes the analysis and determination of impacts for the four federally listed species that could potentially occur in the project area or have potential habitat within the project vicinity.

1.7.2 Non-Federally Listed Sensitive Species

The AGFD Online Environmental Review Tool documented six special status species (none of which are currently federally listed as threatened or endangered) as occurring within 3.0 miles of the project vicinity (AGFD 2020). Based on the AGFD species lists reviewed, site conditions, and existing habitat at the solutions areas, all six species have the potential to occur in one or more of the solution areas. The species analysis is provided in *Table 6*.

Table 5. USFWS Threatened, Endangered, Proposed, and Candidate Species with potential habitat within the project area.

COMMON / SCIENTIFIC NAME	STATUS	HABITAT DESCRIPTION	HABITAT IN PROJECT VICINITY	IMPACTS
REPTILES (1)				
Northern Mexican gartersnake <i>(Thamnophis eques megalops)</i>	FT	This species is found in steep-walled canyons of Arizona that contain shallow, braided stream segments with minimal silt. They prefer dense canopy cover, vegetated islands, and aquatic vegetation. Their distribution has been reduced to less than ten percent of their historic range (AGFD 2012).	None, and no individuals within 3.0 miles of City limits	None
BIRDS (3)				
California least tern <i>(Sterna antillarum browni)</i>	FE	Habitat for the California least tern is generally along the Pacific Coast of California, from San Francisco to Baja California. They feed on small fish, shrimp, and other invertebrates. Nesting occurs in colonies on relatively open beaches kept free of vegetation by natural scouring from tidal action (USFWS 2007c). Preferred foraging habitat includes seacoasts, beaches, bays, estuaries, lagoons, lakes, and rivers. They rest and loaf on sandy beaches, mudflats, and salt-pond dikes. They may roost at night on sandy flats or gravel bars away from nesting areas for several weeks before nesting (NatureServe 2020).	None, and no individuals within 3.0 miles of City limits	None
California condor <i>(Gymnogyps californianus)</i>	FE/NEP	This species roosts and nests on tall, steep cliff faces over desertscrub or grasslands, or on major river canyon walls, with easy approach from the air and protection from terrestrial predators. Once extirpated from their historic habitat in Arizona, a breeding population has been established via annual introductions of captive-bred individuals at Vermillion Cliffs. The species now can be found throughout much of Marble Canyon and the Grand Canyon. The species forages widely across Northern Arizona, including the western portion of the Navajo Nation (AGFD 2008, Mikesic 2008).	None, and no individuals within 3.0 miles of City limits	None
Yellow-billed cuckoo <i>(Coccyzus americanus)</i>	FT	This species occurs in large blocks of dense, wooded, streamside habitat (cottonwood, willow, or tamarisk galleries) at elevations at or below 6,500 feet amsl. It has very specific habitat requirements for nesting and foraging, including large, broad, contiguous patches of cottonwood-willow vegetation with dense undergrowth, sometimes with taller mesquite trees mixed in as well (AGFD 2011a, USFWS 2014b). The species is migratory, arriving in the southwestern United States from mid-May to mid-June, and departing for wintering grounds in September (Haltermann et al. 2015). Historically, the breeding range for the western population of the species covered much of North America west of the Rocky Mountains, from British Columbia south to Baja California. Currently the species has been extirpated from the northwest portion of its former range and is primarily found in the Southwest and Interior West (AGFD 2011a, USFWS 2014a).	None, and no individuals within 3.0 miles of City limits	None

Source: USFWS 2020b.



Table 6. Analysis of Effects and Determination of Impacts for Non-Federally Listed Sensitive Species.

COMMON / SCIENTIFIC NAME	STATUS*	HABITAT DESCRIPTION	KNOWN IN PROJECT VICINITY	IMPACTS/ MITIGATION MEASURES
REPTILES (2)				
<p>Banded Gila Monster <i>(Heloderma suspectum cinctum)</i></p>	<p>SC/1A</p>	<p>This species is a large stout bodied lizard with a short, fat tail. The tongue is dark and forked. Markings consist of a pattern of black bands on a peach, orange, yellow, or pink background composed of hard, rounded, bead-like scales. It can be found across most of western and southern Arizona at elevations ranging from just above sea level near Yuma to over 5,500 feet amsl. Gila monsters can be found in the following Arizona biotic communities: desertscrubs, Semidesert Grassland, Great Basin Conifer Woodland, and Madrean Evergreen Woodland. Suitable habitat includes flats in rocky drainages and on rugged bajadas, hillsides, and mountain slopes (Brennan and Holycross 2006).</p>	<p>This species has been detected within 3 miles of solutions 1.4, 1.8, 1.11, 2.3, 2.4, 3.1, 3.7, 6.1/6.2, 6.3/6.4, 6.5, 6.7, 6.8, 7.2, and 7.6. Suitable habitat exists in the solution areas that have areas of relatively undisturbed desert habitat such as 1.4, 1.8, 1.11, 3.7, 6.7, 7.2, and 7.6.</p>	<p>Impacts to individual Gila monsters could occur during construction. As such, a pre-construction clearance survey is recommended in the undisturbed portions of solution areas 1.4, 1.8, 1.11, 3.7, 6.7, 7.2, and 7.6.</p>
<p>Sonoran Desert tortoise <i>(Gopherus morafkai)</i></p>	<p>CCA, 1A, BLM Sen</p>	<p>This species occurs in Arizona Upland and Lower Colorado River subdivisions of the Sonoran Desert. It prefers desert grassland, Sonoran desertscrub with elements of Mojave desertscrub and juniper woodland, interior chaparral, and desert grassland with rocky hillsides and bajadas. Juniper woodlands, interior chaparral, and pine communities may be suitable. Washes and valley bottoms may be useful in dispersal. It occurs at elevations ranging from about 510 feet in Mojave desertscrub to semidesert grassland and interior chaparral at 5,300 feet (AGFD 2015 and Averill-Murray and Klug 2000).</p>	<p>This species has been detected within 3 miles of solutions 1.4, 1.8, 1.11, 2.3, 2.4, 3.1, 3.7, 5.1, 6.1/6.2, 6.3/6.4, 6.5, 6.7, 6.8, 7.2, and 7.6. Suitable habitat exists in the solution areas that have areas of relatively undisturbed desert habitat such as 1.4, 1.8, 1.11, 3.7, 6.7, 7.2, and 7.6.</p>	<p>Impacts to individual Desert tortoises could occur during construction. As such, a pre-construction clearance survey is recommended in the undisturbed portions of solution areas 1.4, 1.8, 1.11, 3.7, 6.7, 7.2, and 7.6.</p>



COMMON / SCIENTIFIC NAME	STATUS*	HABITAT DESCRIPTION	KNOWN IN PROJECT VICINITY	IMPACTS/ MITIGATION MEASURES
BIRDS (2)				
<p>Golden eagle (<i>Aquila chrysaetos canadensis</i>)</p>	<p>BGEPA / 1B / BLM Sen</p>	<p>This species requires cliff habitat for nesting, roosting, and foraging. It is often observed hunting for prey in grasslands adjacent to cliffs but is also known to forage many miles outside of appropriate nesting habitat. In western mountains, it builds nests at elevations between 4,000 and 10,000 feet amsl (1219 to 3048 meters) (AGFD 2002).</p>	<p>This species has been detected within 3 miles of Solutions 1.4, 1.8, 1.11, 2.3, 2.4, 3.1, 3.7, 5.1, 6.1/6.2, 6.3/6.4, 6.5, 6.7, 6.8, 7.2, and 7.6. However, eagles tend to avoid populated areas, and there are no cliffs within the solution areas. Foraging and nesting habitat exists in the cliff and grassland habitats on the edges of the City limits.</p>	<p>Although eagles may use habitats on the outer edges of the City for foraging and nesting, no impacts are anticipated from the proposed solutions.</p>
<p>Western burrowing owl (<i>Athene cunicularia hypugaea</i>)</p>	<p>BLM Sen, 1B</p>	<p>This species is found in open, well-drained grasslands, steppes, deserts, prairies, and agricultural lands, and is often associated with burrowing mammals. Burrowing owls are, at times, observed in open areas such as vacant lots near human habitation, golf courses and airports primarily at elevations ranging from 650 to 6,140 feet (198 to 1,873 meters). This species is currently listed as a species of concern by the USFWS and are also protected under the MBTA (USFWS 2020b). Burrowing owls are commonly found near agricultural lands and urban development (AGFD 2001).</p>	<p>This species has been detected within 3 miles of Solutions 1.4, 1.8, 1.11, 2.3, 2.4, 3.1, 6.1/6.2, 6.3/6.4, and 6.5. Suitable habitat exists in most of the Solution areas where there are open lots, drainages, or roadside berms including 1.4, 1.8, 1.11, 3.1, 3.7, 5.1, 6.1/6.2, 6.3/6.4, 6.5, 6.7, 6.8, 7.2, and 7.6;</p>	<p>Although individuals may be impacted by many solutions, adults may be able to relocate to avoid harm from project activities. However, juveniles (and eggs) would not be able to relocate. As such, excavation or ground disturbing activities should be conducted outside the breeding season if possible. Or, prior to construction, a burrowing owl clearance survey should be conducted to avoid adverse impacts.</p>



COMMON / SCIENTIFIC NAME	STATUS*	HABITAT DESCRIPTION	KNOWN IN PROJECT VICINITY	IMPACTS/ MITIGATION MEASURES
MAMMALS (1)				
Greater Western Bonneted Bat <i>(Eumops perotis californicus)</i>	SC/1B	This species is mostly found in Lower and upper Sonoran desertscrub near cliffs, preferring the rugged rocky canyons with abundant crevices. It prefers crowding into tight crevices that are around one foot deep and two or more inches wide. Colonies of this species are usually found in deeper crevices of ten or more feet. This species tends to wedge themselves in the backs of cracks or crevices at the point where they narrow down considerably. Entrances to roosting crevices are usually horizontal but facing downward which facilitates entry and exit. This species can roost singly, in groups of two or more, and usually in colonies of up 100 individuals. In Arizona, it is usually recorded from 240 to 8,475 feet (73 to 2,583 meters) (AGFD 2014).	This species has been detected within 3 miles of solutions 1.4, 1.8, 1.11, 2.3, 2.4, 3.1, 3.7, 5.1, 6.1/6.2, 6.3/6.4, 6.5, 6.7, 6.8. There are no anticipated roost sites within the solution areas.	Although individuals could be affected by solutions if roost sites are nearby, project activities are anticipated to take place during the day and should not interfere with foraging activity.
PLANTS (1)				
Freckled Milk-vetch <i>(Astragalus lentiginosus var. ambiguous)</i>	SC	This species of milkvetch grows 6-18 inches in height with 3-50 flowers on each inflorescence. The flowers are usually purplish, cream, whitish, or mixed purplish and whitish. The seed pods have a mottled, papery pod/fruit. Leaflets are grey or silvery green, 1-15 cm in length, with linear to widely ovate shape. This species can be found in the Sierra Nevada, Tehachapi Mountain Area, Inner South Coast Ranges, and Great Basin province. Suitable habitats consist of dry open spaces in Sagebrush Scrub, Shadscale Scrub, Alkali Sink, Subalpine Forest, Foothill Woodland, Yellow Pine Forest, Valley Grassland, Creosote Bush Scrub, Joshua Tree Woodland habitats (Stewart 1998).	This species has been detected within 3 miles of solutions 1.4, 1.8, 1.11, 2.3, 2.4, 3.1, 6.1/6.2, 6.3/6.4, 6.5, 6.7, 6.8. Interestingly, the specimen detected near the solution areas is in old downtown Kingman	Because no plants have been detected within the solution areas, no impacts are anticipated. However, because one population was detected near Solutions 1.4 and 1.8, a preconstruction survey is recommended in the undisturbed portions of these solution areas to ensure no individuals are within the solution footprint.

* SC (Species of Concern—USFWS)
 BGEPA (Bald and Eagle Protection Act)

1A/1B (Species of Greatest Concern rankings from AGFD)



1.8 Migratory Birds

There is nationwide concern over declining numbers of many neotropical bird populations. Many neotropical birds that migrate through Arizona are protected under the Migratory Bird Treaty Act (MBTA) of 1918 (Title 16 U.S. Code Parts 703-712), as amended, and Executive Order 13186. The USFWS enforces the MBTA, which prohibits individuals to do any of the following: ...pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, including any part, nest, or egg of any such bird (USFWS 2020c). The project area lies within the bird migratory route known as the Pacific Flyway, where more than 350 bird species travel within this migration route (Pacific Flyway Council 2020). Therefore, care should be taken to minimize the risk of injury to migratory bird species during construction activities. Birds protected under MBTA include all common songbirds, raptors, waterfowl, shorebirds, seabirds, and wading birds. A complete listing of protected bird species under the MBTA can be found at the USFWS website: <https://www.fws.gov/birds/management/managed-species/migratory-bird-treaty-act-protected-species.php>.

1.8.1 Migratory Bird Species Analysis

On January 10, 2001, President Clinton signed Executive Order 13186 placing emphasis on the conservation of migratory birds. The USFWS maintains a list of birds protected under the MBTA. The USFWS IPaC tool identified eight specific migratory bird species that have a high probability of presence within the project area (USFWS 2020b). The species names, suitable habitat description, and potential project effects are included in *Table 7*.

Table 7. Migratory Birds of High Priority and Conservation Concern Listed for the Project Area

SPECIES	HABITAT	EFFECTS
Bendire's thrasher <i>Toxostoma bendirei</i>	This species can be found in various kinds of dry, semi-open habitats such as desert, farmland; cacti, thorny bushes. It prefers areas with a variety of shrubs and cholla cactus and with some understory of grass, where dense hedges or shrubs are present, or next to farmland, and in grassland with scattered shrubs and yuccas. This species has a small range and is threatened by ongoing habitat destruction/degradation (Audubon 2020a). It breeds in the Kingman area from March 15 to July 31 (USFWS 2020b).	Suitable habitat exists in most of the solution areas. Individuals may be impacted by project activities, but impacts would be insignificant.
black-chinned sparrow <i>Spizella atrogularis</i>	This species can be found on brushy mountain slopes, open chaparral, sagebrush, open thickets of manzanita, scrub oak, sagebrush, chamise, and other low shrubs. In winter, this species is also found locally in desert areas with mesquite thickets (Audubon 2020b). It breeds in the Kingman area from April 15 to July 31 (USFWS 2020b).	Suitable habitat is rare within the solution areas. Some habitat may be present in small brushy pockets of drainages like those found in Solution 1.4. Individuals may be impacted by project activities, but impacts would be insignificant.

SPECIES	HABITAT	EFFECTS
Costa's hummingbird <i>Calypte costae</i>	This species can be found in dry and open habitats such as deserts, washes, sage scrub. It can rarely move up into mountain meadows after breeding season. Human development has caused a decline in the population, but in some places, it has adapted to nesting in suburbs (Audubon 2020c). This species breeds in the Kingman area from January 15 to June 10 (USFWS 2020b).	Suitable habitat exists in the project area. Individuals may be impacted by project activities, but impacts would be insignificant.
gilded flicker <i>Colaptes chrysoides</i>	This species can be found in deserts and riparian groves. It nests in holes in giant saguaro cactus and in groves of trees along water courses at low elevations (Audubon 2020d). This species breeds in the Kingman area from May 1 to Aug. 10 (USFWS 2020b).	No suitable habitat exists in the solution areas.
golden eagle <i>Aquila chrysaetos</i>	This species can be found in open terrain of mountains, foothills, and plains. It has a wide range in winter but is more restricted to areas with good nest sites in summer. It hunts over marshes or along rivers (Audubon 2020e). This species breeds in the Kingman area from December 1 to August 31 (USFWS 2020b).	Suitable habitat exists in the vicinity of the solution areas. However, no impacts are anticipated.
Lawrence's goldfinch <i>Spinus lawrencei</i>	This species can be found in oak-pine woodland and chaparral. It breeds in a variety of habitats including streamside trees, oak woodland, open pine woods, pinyon-juniper woods, chaparral. Often found close to water in fairly dry country. In migration and winter, occurs in weedy fields, farmland, brushy areas, streamsid es (Audubon 2020f). It breeds in the Kingman area from March 20 to September 20 (USFWS 2020b).	No suitable habitat exists in the solution areas.
rufous hummingbird <i>Selasphorus rufus</i>	Forest edges, streamsid es, mountain meadows. Breeding habitat includes forest edges and clearings, and brushy second growth within the region of northern coast and mountains. Winters mostly in pine-oak woods in Mexico. Migrants occur at all elevations but more commonly in lowlands during spring, in mountain meadows during late summer and fall (Audubon 2020g). This species breeds elsewhere (not in the Kingman area) (USFWS 2020b).	No suitable habitat exists in the solution areas.
rufous-winged sparrow <i>Aimophila carpalis</i>	This species can be found in tall desert grass, with numerous shrubs, especially mesquite and desert hackberry. It generally avoids heavily grazed areas and can sometimes occur in suburban areas if good vegetation remains. Its habitat is at risk from grazing (Audubon 2020h). This species breeds in the Kingman area from June 15 to September 30 (USFWS 2020b).	Marginal habitat exists in many of the solution areas, and Individuals may be impacted by project activities, but impacts would be insignificant.

1.8.2 Important Bird Areas

Important Bird Areas (IBAs) are listed on the Audubon Society’s website. The closest IBAs are the Havasu National Wildlife Refuge IBA located approximately 36 miles southwest of the project area, the Joshua Tree IBA (Chicken Springs BLM Allotment) located approximately 32 miles to the south southeast of the project area, and the Aubrey Valley IBA located approximately 46 miles east northeast of the project area. Project-related activities would not impact these IBAs as they are too far from the project area to experience any impacts to quality habitat.



1.9 Bald And Golden Eagle Protection Act

The bald eagle was removed from the list of threatened and endangered species August 8, 2007 (USFWS 2007a&b). Take as defined by the Bald and Golden Eagle Protection Act is defined as 1) injury to an eagle, 2) a decrease in productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior. There is no habitat for bald eagle in the vicinity of the project area (AGFD 2011b). There is potential foraging and nesting habitat for golden eagle outside of the Kingman City limits, but no impacts are anticipated, and the project would not result in “take” of the species.

1.10 Native Plant Species

The Arizona Department of Agriculture (ADA) enforces the Arizona Native Plant Law (Arizona Revised Statute Title 3, Chapter 7), under which plants cannot be removed from any lands— whether they are owned by a private individual or managed by a government agency—without permission and a permit from the ADA (ADA 2019). The following protected plant species may occur within the project area: honey mesquite, cholla, hedgehog cacti, desert-willow, ocotillo, yuccas, and agave, and members of the Liliaceae family (ADA 2016). Care should also be taken with all tree, cacti, yucca, and lily species as project solutions that involve these species are subject to review and recommendations by the ADA.

1.11 Conclusions/Recommendations

The proposed action would have no effect on any federally listed threatened or endangered species or Critical Habitat; and is not likely to jeopardize species proposed for listing (*Table 4*). Additionally, the proposed action would not likely lead to a trend toward listing for any of the other sensitive species considered (*Table 5*).

Table 7. Summary of Biological Concerns and Recommended Mitigation Measures.

NO.	NAME	BIOLOGICAL CONCERNS	RECOMMENDED MITIGATION MEASURES
1.4	Stockton Hill Avenue Stormdrain (High School Stormdrain)	<ol style="list-style-type: none"> 1. Potential habitat for Gila monster and Sonoran desert tortoise 2. Potential habitat for burrowing owl 3. Potential habitat for freckled milkvetch 4. Potential migratory bird habitat 	A biological pre-construction survey is recommended for Gila monster, Sonoran desert tortoise, burrowing owl, and freckled milkvetch only in areas that are not previously disturbed. Relocations of owl, Gila monster, or tortoise may be necessary if they have active burrows within solution areas.
1.8	Detention Upstream of 8th Street	<ol style="list-style-type: none"> 1. Potential habitat for Gila monster and Sonoran desert tortoise 2. Potential habitat for burrowing owl 3. Potential habitat for freckled milkvetch 4. Potential migratory bird habitat 	A biological pre-construction survey is recommended for Gila monster, Sonoran desert tortoise, burrowing owl, and freckled milkvetch. Relocations of owl, Gila monster, or tortoise may be necessary if they have active burrows within the solution area.
1.11	4th Avenue Basin	<ol style="list-style-type: none"> 1. Potential habitat for Gila monster and Sonoran desert tortoise 2. Potential habitat for burrowing owl 3. Potential migratory bird habitat 	A biological pre-construction survey is recommended for Gila monster, Sonoran desert tortoise, and burrowing owl. Relocations of owl, Gila monster, or tortoise may be necessary if they have active burrows within the solution area.
2.3	Main Street Stormdrain Extension	No biological concerns	No recommendations



NO.	NAME	BIOLOGICAL CONCERNS	RECOMMENDED MITIGATION MEASURES
2.4	Fairgrounds Boulevard Stormdrain	No biological concerns	No recommendations
3.1	Harrod Avenue Basin Upgrades	<ol style="list-style-type: none"> 1. Potential habitat for burrowing owl 1. Potential migratory bird habitat 	A biological pre-construction survey is recommended for burrowing owl only in areas that are not previously disturbed. Relocations of owls may be necessary if they have active burrows within the solution area.
3.7	I-40 Regional Retention	<ol style="list-style-type: none"> 1. Potential habitat for Gila monster and Sonoran desert tortoise 2. Potential habitat for burrowing owl 3. Potential migratory bird habitat 	A biological pre-construction survey is recommended for Gila monster, Sonoran desert tortoise, and burrowing owl. Relocations of owl, Gila monster, or tortoise may be necessary if they have active burrows within the solution area.
5.1	Pinal Street Basin	<ol style="list-style-type: none"> 1. Potential habitat for burrowing owl 2. Potential migratory bird habitat 	A biological pre-construction survey is recommended for burrowing owl. Relocations of owls may be necessary if they have active burrows within the solution area.
6.1/ 6.2	Anson Smith Road Collector Channel and Basin	<ol style="list-style-type: none"> 1. Potential habitat for burrowing owl 2. Potential migratory bird habitat 	A biological pre-construction survey is recommended for burrowing owl only in areas that are not previously disturbed. Relocations of owls may be necessary if they have active burrows within the solution area.
6.3/ 6.4	Harvard Street Improvements and Basin	<ol style="list-style-type: none"> 1. Potential habitat for burrowing owl 2. Potential migratory bird habitat 	A biological pre-construction survey is recommended for burrowing owl only in areas that are not previously disturbed. Relocations of owls may be necessary if they have active burrows within the solution area.
6.5	Western Avenue Stormdrain	No biological concerns	No recommendations
6.7	Vista Basin	<ol style="list-style-type: none"> 1. Potential habitat for Gila monster and Sonoran desert tortoise 2. Potential habitat for burrowing owl 3. Potential migratory bird habitat 	A biological pre-construction survey is recommended for Gila monster, Sonoran desert tortoise, and burrowing owl. Relocations of owl, Gila monster, or tortoise may be necessary if they have active burrows within the solution area.
6.8	Lower Crestwood Channel	<ol style="list-style-type: none"> 2. Potential habitat for burrowing owl 3. Potential migratory bird habitat 	A biological pre-construction survey is recommended for burrowing owl. Relocations of owls may be necessary if they have active burrows within the solution area.
7.2	Grace Neal Channel	<ol style="list-style-type: none"> 1. Potential habitat for Gila monster and Sonoran desert tortoise 2. Potential habitat for burrowing owl 3. Potential migratory bird habitat 	A biological pre-construction survey is recommended for Gila monster, Sonoran desert tortoise, and burrowing owl. Relocations of owl, Gila monster, or tortoise may be necessary if they have active burrows within the solution area.
7.6	Shane Channel	<ol style="list-style-type: none"> 1. Potential habitat for Gila monster and Sonoran desert tortoise 2. Potential habitat for burrowing owl 3. Potential migratory bird habitat 	A biological pre-construction survey is recommended for Gila monster, Sonoran desert tortoise, and burrowing owl. Relocations of owl, Gila monster, or tortoise may be necessary if they have active burrows within the solution area.



Specific Sonoran Desert Tortoise Measures:

The Arizona Interagency Desert Tortoise Team (AIDTT) recommends mitigation processes and measures, where appropriate, including additional surveys when presence/absence is questionable or suitable habitat exists. It is recommended to contact AGFD to determine appropriate mitigation measures. Additional surveys may be recommended, as well as coordination with resource agencies, to address and minimize potential impacts that could result from project activities. Construction personnel should be made aware of the potential of desert tortoise to exist in the project area and should be educated in the preservation and avoidance of tortoise, including contact information for responsible staff at AGFD.

A tortoise protection and education program should be implemented to educate all employees, inspectors, supervisors, contractors, and subcontractors who carry out proposed activities at the project site.

The education program should include discussions of the following:

1. the legal and sensitive status of the tortoise;
2. a brief discussion of tortoise life history and ecology;
3. mitigation measures designed to reduce adverse effects to tortoises;
4. and protocols to follow if a tortoise is encountered, including appropriate points of contact.

If a tortoise is discovered on the site during development, work should stop in the immediate vicinity, and the AGFD should be contacted immediately to determine appropriate mitigation measures and to minimize any potential effects from project activities on the tortoise.

Specific Western Burrowing Owl Measures:

Although individual owls may be impacted by the proposed solutions, adults should be able to relocate to avoid harm from project activities. However, because they are ground-dwellers and juvenile birds (or eggs) are unable to relocate prior to construction, a burrowing owl clearance survey should be conducted according to the *AGFD 2009 Burrowing Owl Project Clearance Guidance for Landowners*, especially if ground disturbing activities are to occurring during the burrowing owl breeding season of March 1 to August 31.

Specific Migratory Bird Mitigation Measures:

To avoid potential impacts to and unintentional take of migratory bird species, it is recommended that if substantial large shrub or tree removal is required, it should take place outside the breeding season (*March 1 to August 31*) to the extent practicable. If a substantial amount of large shrub or tree removal needs to occur during the breeding season, a pre-construction survey for nesting birds should be completed prior to removal to ensure there are no nesting birds on site, or a monitor should be present during construction activities.

1.12 References

- Arizona Department of Agriculture (ADA). 2016. Title 3 - Agriculture. Chapter 3. Supplement Release Quarter: 16-1 Sections, Parts, Exhibits, Tables or Apps mod R3-3-208. AZ Department of Agriculture - Environmental Services. Website: <https://agriculture.az.gov/sites/default/files/Native%20Plant%20Rules%20-%20AZ%20Dept%20of%20Ag.pdf>. Accessed April 15, 2020.
- ADA. 2019. Arizona Revised Statutes. Title 3 - Agriculture. Chapter 7: Arizona Native Plants. Arizona Department of Agriculture - Environmental Services Division.
- AGFD. 2001. *Athene cunicularia hypugaea*. Unpublished abstract compiled and edited by Heritage Data Management System, Arizona Game and Fish Department, Phoenix, Arizona. 7 pp.
- AGFD. 2002. *Aquila chrysaetos canadensis*. Unpublished abstract compiled and edited by Heritage Data Management System, Arizona Game and Fish Department, Phoenix, Arizona. 5pp.
- AGFD. 2008. *Gymnogyps californianus*. Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. 8 pp.
- AGFD. 2011a. *Coccyzus americanus*. Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, Arizona. 6 pp.
- AGFD. 2011b. *Haliaeetus leucocephalus*. Unpublished abstract compiled and edited by Heritage Data Management System, Arizona Game and Fish Department, Phoenix, Arizona. 9 pp.
- AGFD. 2012. *Thamnophis eques megalops*. Unpublished abstract compiled and edited by Heritage Data Management System, Arizona Game and Fish Department, Phoenix, Arizona. 8 pp.
- AGFD. 2014. *Eumops perotis californicus*. Unpublished abstract compiled and edited by Heritage Data Management System, Arizona Game and Fish Department, Phoenix, Arizona. 6 pp.
- AGFD. 2015. *Gopherus morafkai*. Unpublished abstract compiled and edited by Heritage Data Management System, Arizona Game and Fish Department, Phoenix, Arizona. 10 pp.
- AGFD. 2020. Arizona Environmental Online Review Tool Report. Arizona Game and Fish Department. Project ID: HGIS-10331 and HGIS-10651. Website <https://azhgis2.esri.com/>. Accessed March 30, 2020.
- Arizona Geological Survey. 2020. The Geologic Map of Arizona. The University of Arizona College of Science. Website <http://data.azgs.az.gov/geologic-map-of-arizona/>. Accessed March 5, 2020.
- Arizona Interagency Desert Tortoise Team (AIDTT). 2000. Averill-Murray, R.C. (ed.). Status of the Sonoran populations of the desert tortoise in Arizona: an update. Arizona Interagency Desert Tortoise Team and Arizona Game and Fish Department, Phoenix. 48 pp.
- AIDTT. 2008. Recommended Standard Mitigation Measures for Projects in Sonoran Desert Tortoise Habitat. 7 pp. Supplement to AIDTT (1996) Management Plan for the Sonoran Desert population of the desert tortoise in Arizona. 55pp.

- Averill-Murray, R.C., and C.M. Klug. 2000. Monitoring and ecology of Sonoran Desert tortoises in Arizona. Nongame and Endangered Wildlife Program Technical Report 161. Arizona Game and Fish Department, Phoenix. 104 pp.
- Audubon. 2020a. Audubon Guide to North American Birds: Bendire's thrasher. Website <https://www.audubon.org/field-guide/bird/bendires-thrasher>. Accessed April 12, 2020.
- Audubon. 2020b. Audubon Guide to North American Birds: Black-chinned sparrow. Website <https://www.audubon.org/field-guide/bird/black-chinned-sparrow>. Accessed April 12, 2020.
- Audubon. 2020c. Audubon Guide to North American Birds: Costa's hummingbird. Website <https://www.audubon.org/field-guide/bird/costas-hummingbird>. Accessed April 12, 2020.
- Audubon. 2020d. Audubon Guide to North American Birds: Gilded flicker. Website <https://www.audubon.org/field-guide/bird/gilded-flicker>. Accessed April 12, 2020.
- Audubon. 2020e. Audubon Guide to North American Birds: Golden eagle. Website <https://www.audubon.org/field-guide/bird/golden-eagle>. Accessed April 12, 2020.
- Audubon. 2020f. Audubon Guide to North American Birds: Lawrence's goldfinch. Website <https://www.audubon.org/field-guide/bird/lawrences-goldfinch>. Accessed April 12, 2020.
- Audubon. 2020g. Audubon Guide to North American Birds: Rufous hummingbird. Website <https://www.audubon.org/field-guide/bird/rufous-hummingbird>. Accessed April 12, 2020.
- Audubon. 2020h. Audubon Guide to North American Birds: Rufous-winged sparrow. Website <https://www.audubon.org/field-guide/bird/rufous-winged-sparrow>. Accessed April 12, 2020.
- Brennan, T. C., & A. T. Holycross. 2006. *A Field Guide to Amphibians and Reptiles in Arizona*. Arizona Game and Fish Department. Phoenix, AZ.
- Brown, D. E. (editor). 1994. *Biotic Communities: Southwestern United States and Northwestern Mexico*. University of Utah Press, Salt Lake City.
- Earth Survey. 2020. USGS Quadrangles (QUADS). Website: <http://www.earthsurvey.us/quads/quads.html>. Accessed April 19, 2020.
- Earth Point. 2020. Township and Range – Public Land Survey System on Google Earth. Website: <http://www.earthpoint.us/Townships.aspx>. Accessed April 19, 2020.
- Halterman, M.D., M.J. Johnson, J.A. Holmes, and S.A. Laymon. 2015. A Natural History Summary and Survey Protocol for the Western Distinct Population Segment of the Yellow-billed Cuckoo: U.S. Fish and Wildlife Techniques and Methods. 45 p.
- Mikesic, D. G. 2008. Species Account for *Gymnogyps californianus*. Navajo Natural Heritage Program, Window Rock, Arizona. Website: <http://nnhp.nndfw.org/>. Accessed April 20, 2020.

- NatureServe. 2020. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Website: <http://explorer.natureserve.org>. Accessed April 12, 2020.
- Natural Resource Conservation Service (NRCS). 2020. Custom Soil Resource Report for Mohave County, Arizona, Central Park (AZ697). Website: <http://websoilsurvey.nrcs.usda.gov>. Accessed April 22, 2020.
- Pacific Flyway Council. 2020. Website: <http://www.pacificflyway.gov/>. Accessed April 23, 2020.
- Richard, S. M., Reynolds, S. J., Spencer, J. E., and Pearthree, P. A. 2000. Geologic Map of Arizona: Arizona Geological Survey Map 35, 1 sheet, scale 1:1,000,000.
- SEINet Portal Network. 2020. <http://swbiodiversity.org/seinet/index.php>. Accessed April 12, 2020.
- Stewart, J. 1998. Mojave Desert Wildflowers. Jon Stewart Photography, Albuquerque, NM.
- University of Arizona. 2020. Arizona Watershed Information. Website: <http://ag.arizona.edu/azaqua/watershed/water.html>. Accessed April 12, 2020.
- USFWS. 2007a. Final rule to remove the Bald Eagle in the lower 48 states from the list of Endangered and Threatened Wildlife. July 9, 2007. *Federal Register* 72(130): 37346 – 37372.
- USFWS. 2007b. Protection of Eagles and Authorizations Under the Bald and Golden Eagle Protection Act for Take of Eagles; Final Rule and Proposed Rule. June 5, 2007. *Federal Register* 72(107): 31131-31140.
- USFWS. 2007c. Species Account: California least tern (*Sternula antillarum browni*). U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office. Sacramento, CA. October 23, 2007.
- USFWS. 2014a. Determination of Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (*Coccyzus americanus*); Final Rule. FR 79(192):59992-60038.
- USFWS. 2014b. Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo: Proposed Rule. FR 79(158): 48548-48652.
- USFWS. 2020a. National Wetlands Inventory. Wetlands Mapper Interactive Tool. Website <http://www.fws.gov/wetlands/Data/Mapper.html>. Accessed April 23, 2020.
- USFWS. 2020b. Information for Planning and Conservation (IPaC) Resource List. Website <http://ecos.fws.gov/ipac/>. Accessed March 30, 2020.
- USFWS. 2020c. Digest of Federal Resource Laws of Interest to the U.S. Fish and Wildlife Service: Migratory Bird Treaty Act of 1918. Website: <https://www.fws.gov/laws/lawsdigest/migtrea.html>. Accessed April 12, 2020
- Western Regional Climate Center (WRCC). 2020. Kingman, Arizona and Kingman #2, Arizona. Period of Record Monthly Climate Summary: 05/01/1901 to 07/31/1967 and #2 09/01/1967 to 01/14/2000. Website <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?az4645> and <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?az4639>. Accessed April 22, 2020.

Appendix A

NRCS Web Soil Survey Custom Report





United States
Department of
Agriculture

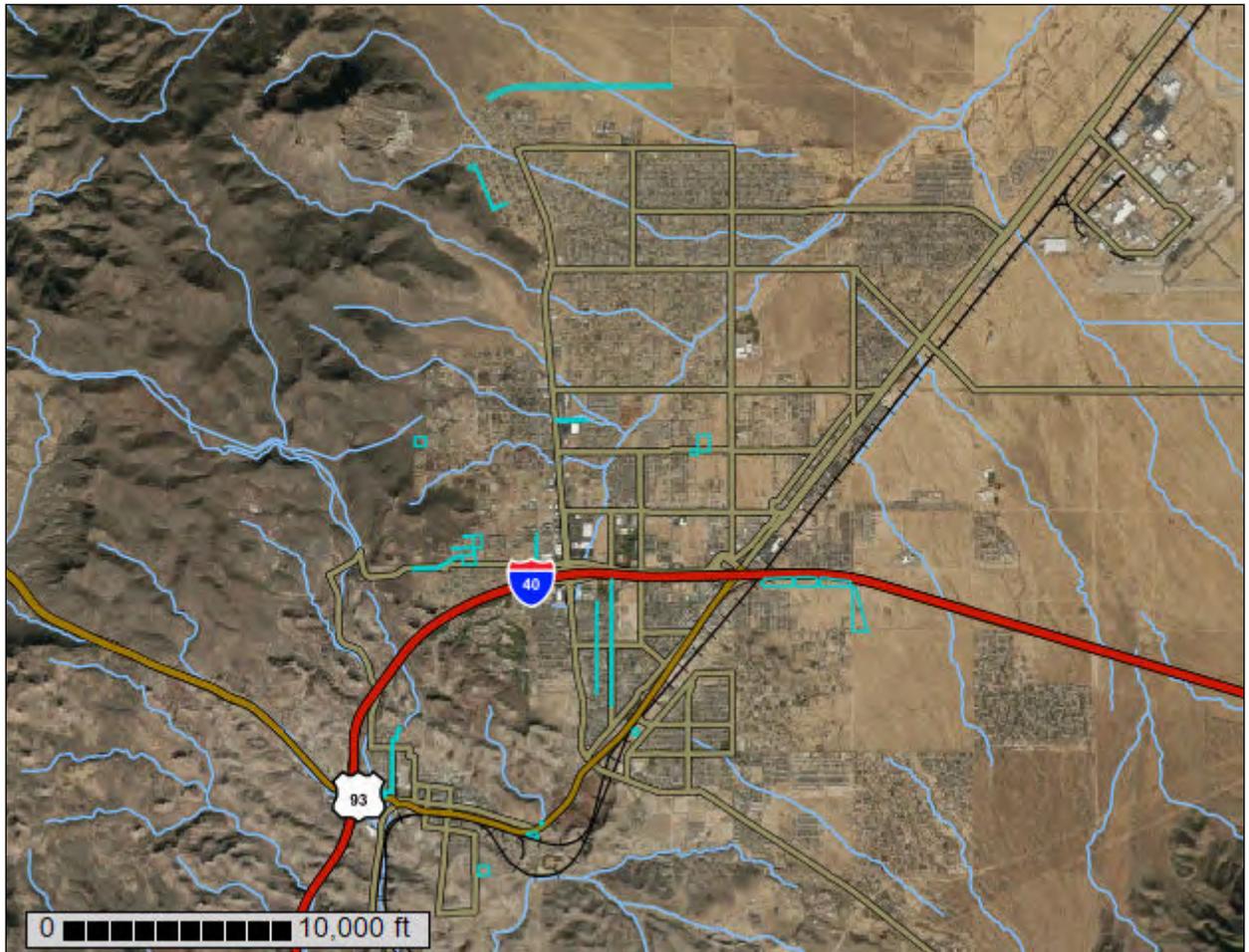
NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Mohave County, Arizona, Central Part

KADMP Solution Areas



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
Mohave County, Arizona, Central Part.....	14
1—Alko family cobbly loam, 0 to 25 percent slopes.....	14
6—Arizo-Franconia-Riverwash complex, 1 to 3 percent slopes.....	15
19—Circular complex, 1 to 3 percent slopes.....	17
32—Dutchflat sandy loam, 0 to 2 percent slopes.....	19
70—Jagerson very gravelly loam, 0 to 4 percent slopes.....	20
90—Mutang-Dutchflat complex, 0 to 3 percent slopes.....	21
149—Tumarion very cobbly loam, 2 to 15 percent slopes.....	23
150—Tumarion-Nickel family complex, 8 to 35 percent slopes.....	24
155—Urban land-Calvista family complex, 2 to 10 percent slopes.....	26
167—Whitehills very gravelly loam, 1 to 5 percent slopes.....	27
Soil Information for All Uses	29
Suitabilities and Limitations for Use.....	29
Land Classifications.....	29
Ecological Site Name: NRCS Rangeland Site.....	29
Ecological Site ID: NRCS Rangeland Site.....	33
Hydric Rating by Map Unit.....	37
References	43

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

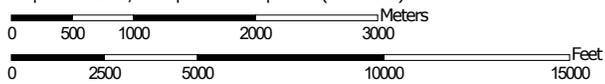
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:61,600 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mohave County, Arizona, Central Part
 Survey Area Data: Version 14, Sep 17, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 21, 2018—Nov 27, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1	Alko family cobbly loam, 0 to 25 percent slopes	0.4	0.3%
6	Arizo-Franconia-Riverwash complex, 1 to 3 percent slopes	4.8	3.3%
19	Circular complex, 1 to 3 percent slopes	15.1	10.5%
32	Dutchflat sandy loam, 0 to 2 percent slopes	30.8	21.4%
70	Jagerson very gravelly loam, 0 to 4 percent slopes	42.8	29.8%
90	Mutang-Dutchflat complex, 0 to 3 percent slopes	18.1	12.6%
149	Tumarion very cobbly loam, 2 to 15 percent slopes	4.2	2.9%
150	Tumarion-Nickel family complex, 8 to 35 percent slopes	10.4	7.2%
155	Urban land-Calvista family complex, 2 to 10 percent slopes	7.5	5.2%
167	Whitehills very gravelly loam, 1 to 5 percent slopes	9.7	6.8%
Totals for Area of Interest		143.9	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called

Custom Soil Resource Report

noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can

Custom Soil Resource Report

be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Mohave County, Arizona, Central Part

1—Alko family cobbly loam, 0 to 25 percent slopes

Map Unit Setting

National map unit symbol: ysg4
Elevation: 2,000 to 4,800 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 62 to 68 degrees F
Frost-free period: 180 to 255 days
Farmland classification: Not prime farmland

Map Unit Composition

Alko family and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alko Family

Setting

Landform: Fan terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from mixed

Typical profile

A - 0 to 1 inches: cobbly loam
Bw - 1 to 10 inches: gravelly loam
Bk - 10 to 15 inches: gravelly loam
2Bkqm - 15 to 31 inches: indurated
2C - 31 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 0 to 25 percent
Depth to restrictive feature: 10 to 20 inches to duripan
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 1.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: D
Ecological site: Limy Upland 6-9" p.z. (R030XB214AZ)
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 15 percent
Hydric soil rating: No

6—Arizo-Franconia-Riverwash complex, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: vssh
Elevation: 2,800 to 3,500 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 59 to 64 degrees F
Frost-free period: 200 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

Arizo and similar soils: 40 percent
Franconia and similar soils: 30 percent
Riverwash: 20 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Arizo

Setting

Landform: Flood plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed

Typical profile

A - 0 to 2 inches: gravelly sandy loam
C1 - 2 to 11 inches: gravelly sandy loam
C2 - 11 to 15 inches: sandy loam
C3 - 15 to 35 inches: extremely gravelly loamy sand
C4 - 35 to 60 inches: very gravelly loamy coarse sand

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None

Custom Soil Resource Report

Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: A
Ecological site: Sandy Wash 6-9" p.z. (R030XB218AZ)
Hydric soil rating: No

Description of Franconia

Setting

Landform: Flood plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed

Typical profile

A - 0 to 2 inches: sandy loam
C1 - 2 to 18 inches: loamy sand
C2 - 18 to 33 inches: stratified loamy sand
C3 - 33 to 60 inches: gravelly loamy sand

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: A
Ecological site: Sandy Wash 6-9" p.z. (R030XB218AZ)
Hydric soil rating: No

Description of Riverwash

Properties and qualities

Frequency of flooding: Frequent

Interpretive groups

Land capability classification (irrigated): None specified
Ecological site: Sandy Wash 6-9" p.z. (R030XB218AZ)
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 10 percent
Hydric soil rating: No

19—Circular complex, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: ywbz
Elevation: 2,500 to 4,000 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 62 to 68 degrees F
Frost-free period: 180 to 265 days
Farmland classification: Not prime farmland

Map Unit Composition

Circular and similar soils: 45 percent
Circular and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Circular

Setting

Landform: Basin floors
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed

Typical profile

A - 0 to 4 inches: loam
C1 - 4 to 27 inches: loam
C2 - 27 to 60 inches: loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Custom Soil Resource Report

Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: A
Ecological site: Sandy Loam Upland 6-9" p.z. (R030XB228AZ)
Hydric soil rating: No

Description of Circular

Setting

Landform: Fan terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from mixed

Typical profile

A - 0 to 3 inches: sandy loam
C1 - 3 to 11 inches: sandy loam
C2 - 11 to 22 inches: sandy loam
C3 - 22 to 36 inches: gravelly sandy loam
C4 - 36 to 45 inches: gravelly sandy loam
C5 - 45 to 60 inches: gravelly loamy sand

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: A
Ecological site: Loamy Upland 6-10" p.z. (R030XB209AZ)
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 15 percent
Hydric soil rating: No

32—Dutchflat sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: ysg5
Elevation: 2,800 to 4,800 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 62 to 68 degrees F
Frost-free period: 200 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Dutchflat and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dutchflat

Setting

Landform: Fan terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from igneous and metamorphic rock

Typical profile

A - 0 to 4 inches: sandy loam
Bt - 4 to 37 inches: sandy clay loam
C - 37 to 60 inches: coarse sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B

Custom Soil Resource Report

Ecological site: Sandy Loam Upland 6-9" p.z. Fine (R030XB226AZ)
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 20 percent
Hydric soil rating: No

70—Jagerson very gravelly loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: ytfg
Elevation: 2,800 to 4,800 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 59 to 70 degrees F
Frost-free period: 180 to 265 days
Farmland classification: Not prime farmland

Map Unit Composition

Jagerson and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jagerson

Setting

Landform: Fan terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from volcanic rock

Typical profile

A - 0 to 2 inches: gravelly sandy clay loam
Bt1 - 2 to 9 inches: gravelly sandy clay loam
Bt2 - 9 to 18 inches: clay loam
Bk - 18 to 42 inches: very gravelly sandy loam
2Bk2 - 42 to 60 inches: extremely gravelly loamy coarse sand

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Custom Soil Resource Report

Calcium carbonate, maximum in profile: 35 percent
Available water storage in profile: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Limy Fan 6-9" p.z. (R030XB211AZ)
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 15 percent
Hydric soil rating: No

90—Mutang-Dutchflat complex, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: yvbq
Elevation: 2,800 to 4,800 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 62 to 68 degrees F
Frost-free period: 200 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Mutang and similar soils: 45 percent
Dutchflat and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mutang

Setting

Landform: Pediments
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from igneous rock

Typical profile

A - 0 to 1 inches: gravelly sandy loam
Bt1 - 1 to 5 inches: loam
Bt2 - 5 to 15 inches: gravelly clay
2Cr - 15 to 22 inches: weathered bedrock
2R - 22 to 32 inches: unweathered bedrock

Properties and qualities

Slope: 0 to 3 percent

Custom Soil Resource Report

Depth to restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 41 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.03 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: D
Ecological site: Granitic/Schist Upland 10-13" p.z. Alkaline (R030XC329AZ)
Hydric soil rating: No

Description of Dutchflat

Setting

Landform: Fan terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from igneous rock

Typical profile

A - 0 to 4 inches: sandy loam
Bt - 4 to 37 inches: sandy clay loam
C - 37 to 60 inches: coarse sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: Sandy Loam Upland 10-13" p.z. Fine (R030XC321AZ)
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 15 percent
Hydric soil rating: No

149—Tumarion very cobbly loam, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 17hy9
Elevation: 2,200 to 3,500 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 230 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Tumarion and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tumarion

Setting

Landform: Mesas
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from volcanic rock

Typical profile

A - 0 to 3 inches: very cobbly loam
Bk - 3 to 10 inches: extremely gravelly loam
2Bkqm - 10 to 12 inches: indurated
3R - 12 to 22 inches: unweathered bedrock

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 5 to 18 inches to duripan; 7 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent

Custom Soil Resource Report

Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)

Available water storage in profile: Very low (about 0.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7c

Hydrologic Soil Group: D

Ecological site: Limy Upland 10-13" p.z. (R030XC311AZ)

Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 15 percent

Hydric soil rating: No

150—Tumarion-Nickel family complex, 8 to 35 percent slopes

Map Unit Setting

National map unit symbol: vsws

Elevation: 3,200 to 4,500 feet

Mean annual precipitation: 9 to 12 inches

Mean annual air temperature: 59 to 64 degrees F

Frost-free period: 200 to 230 days

Farmland classification: Not prime farmland

Map Unit Composition

Tumarion and similar soils: 70 percent

Nickel family and similar soils: 15 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tumarion

Setting

Landform: Mesas

Landform position (two-dimensional): Summit, backslope

Landform position (three-dimensional): Interfluve, side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Alluvium derived from basalt

Typical profile

A - 0 to 2 inches: extremely cobbly sandy loam

Bk - 2 to 15 inches: very cobbly sandy loam

Bkqm - 15 to 19 inches: indurated

2R - 19 to 29 inches: unweathered bedrock

Properties and qualities

Slope: 8 to 35 percent

Percent of area covered with surface fragments: 5.0 percent

Custom Soil Resource Report

Depth to restrictive feature: 5 to 18 inches to duripan; 7 to 20 inches to lithic bedrock

Natural drainage class: Somewhat excessively drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 30 percent

Available water storage in profile: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7c

Hydrologic Soil Group: D

Ecological site: Loamy Slopes 10-13" p.z. Cobbly (R030XC309AZ)

Hydric soil rating: No

Description of Nickel Family

Setting

Landform: Mesas

Landform position (two-dimensional): Summit, backslope

Landform position (three-dimensional): Interfluve, side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Alluvium derived from basalt

Typical profile

A - 0 to 4 inches: extremely stony loam

Bw - 4 to 23 inches: very cobbly silt loam

Bk1 - 23 to 51 inches: very cobbly loam

Bk2 - 51 to 60 inches: very cobbly sandy loam

Properties and qualities

Slope: 8 to 35 percent

Percent of area covered with surface fragments: 20.0 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 35 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 13.0

Available water storage in profile: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7c

Hydrologic Soil Group: B

Ecological site: Basalt Hills 10-13" p.z. Limy (R030XC333AZ)

Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 15 percent

Hydric soil rating: No

155—Urban land-Calvista family complex, 2 to 10 percent slopes

Map Unit Setting

National map unit symbol: ytfj

Elevation: 3,000 to 3,600 feet

Mean annual precipitation: 9 to 12 inches

Mean annual air temperature: 62 to 68 degrees F

Frost-free period: 180 to 265 days

Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 60 percent

Calvista family and similar soils: 25 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Calvista Family

Setting

Landform: Mountains, hills

Landform position (two-dimensional): Backslope, summit

Landform position (three-dimensional): Upper third of mountainflank, mountaintop, side slope, interfluve

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Alluvium derived from volcanic rock

Typical profile

A - 0 to 2 inches: very gravelly loam

Bk - 2 to 10 inches: cobbly loam

2R - 10 to 20 inches: unweathered bedrock

Properties and qualities

Slope: 2 to 10 percent

Depth to restrictive feature: 4 to 20 inches to lithic bedrock

Natural drainage class: Well drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Custom Soil Resource Report

Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 0.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: D
Ecological site: Volcanic Hills 10-13" p.z. (R030XC332AZ)
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 15 percent
Hydric soil rating: No

167—Whitehills very gravelly loam, 1 to 5 percent slopes

Map Unit Setting

National map unit symbol: ys30
Elevation: 2,200 to 3,800 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 62 to 68 degrees F
Frost-free period: 190 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Whitehills and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Whitehills

Setting

Landform: Fan terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from mixed volcanic rock

Typical profile

A - 0 to 2 inches: very gravelly loam
Btk1 - 2 to 7 inches: very gravelly loam
Btk2 - 7 to 19 inches: very gravelly clay loam
Bk - 19 to 27 inches: very gravelly loam
2Bkqm - 27 to 37 inches: indurated

Custom Soil Resource Report

Properties and qualities

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to duripan

Natural drainage class: Well drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 30 percent

Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7c

Hydrologic Soil Group: C

Ecological site: Limy Upland 6-9" p.z. (R030XB214AZ)

Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 20 percent

Hydric soil rating: No

Appendix B

USFWS IPaC Resource Lists



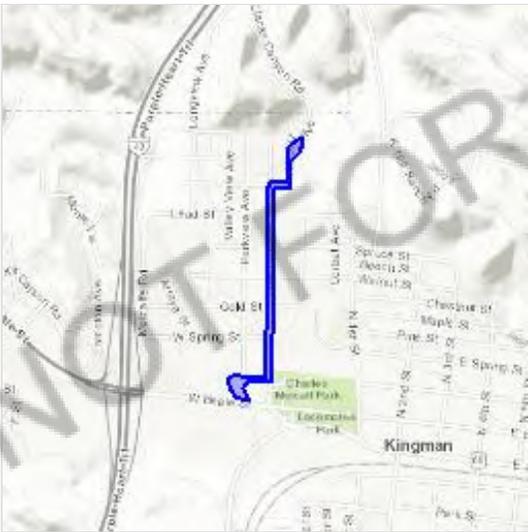
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Mohave County, Arizona



Local office

Arizona Ecological Services Field Office

☎ (602) 242-0210

📠 (602) 242-2513

9828 North 31st Ave

#c3

Birds

NAME	STATUS
California Condor <i>Gymnogyps californianus</i> U.S.A. only, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
California Condor <i>Gymnogyps californianus</i> U.S.A. (specific portions of Arizona, Nevada, and Utah) There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8193	EXPN
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northern Mexican Gartersnake <i>Thamnophis eques megalops</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7655	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

"BREEDS ELSEWHERE" INDICATES
.....
THAT THE BIRD DOES NOT LIKELY
.....
BREED IN YOUR PROJECT AREA.)
.....

Bendire's Thrasher *Toxostoma bendirei*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9435>

Breeds Mar 15 to Jul 31

Costa's Hummingbird *Calypte costae*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9470>

Breeds Jan 15 to Jun 10

Gilded Flicker *Colaptes chrysoides*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/2960>

Breeds May 1 to Aug 10

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Mohave County, Arizona



Local office

Arizona Ecological Services Field Office

☎ (602) 242-0210

📠 (602) 242-2513

9828 North 31st Ave

#c3

Birds

NAME	STATUS
California Condor <i>Gymnogyps californianus</i> U.S.A. (specific portions of Arizona, Nevada, and Utah) There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8193	EXPN
California Condor <i>Gymnogyps californianus</i> U.S.A. only, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northern Mexican Gartersnake <i>Thamnophis eques megalops</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7655	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

"BREEDS ELSEWHERE" INDICATES
.....
THAT THE BIRD DOES NOT LIKELY
.....
BREED IN YOUR PROJECT AREA.)
.....

Bendire's Thrasher *Toxostoma bendirei*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9435>

Breeds Mar 15 to Jul 31

Costa's Hummingbird *Calypte costae*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9470>

Breeds Jan 15 to Jun 10

Gilded Flicker *Colaptes chrysoides*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/2960>

Breeds May 1 to Aug 10

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Mohave County, Arizona



Local office

Arizona Ecological Services Field Office

☎ (602) 242-0210

📠 (602) 242-2513

9828 North 31st Ave

#c3

Birds

NAME	STATUS
California Condor <i>Gymnogyps californianus</i> U.S.A. (specific portions of Arizona, Nevada, and Utah) There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8193	EXPN
California Condor <i>Gymnogyps californianus</i> U.S.A. only, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northern Mexican Gartersnake <i>Thamnophis eques megalops</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7655	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

"BREEDS ELSEWHERE" INDICATES
.....
THAT THE BIRD DOES NOT LIKELY
.....
BREED IN YOUR PROJECT AREA.)
.....

Bendire's Thrasher *Toxostoma bendirei*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9435>

Breeds Mar 15 to Jul 31

Costa's Hummingbird *Calypte costae*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9470>

Breeds Jan 15 to Jun 10

Gilded Flicker *Colaptes chrysoides*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/2960>

Breeds May 1 to Aug 10

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

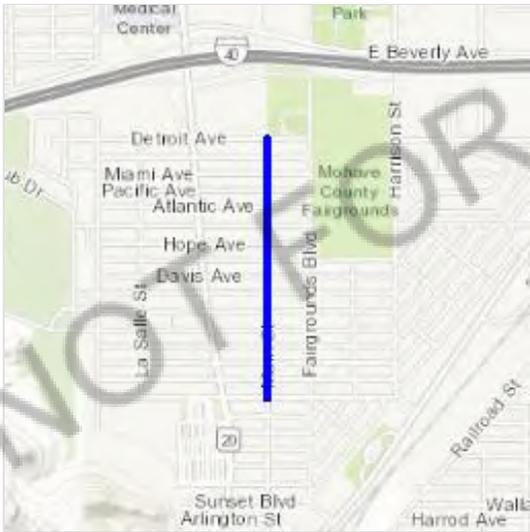
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Mohave County, Arizona



Local office

Arizona Ecological Services Field Office

☎ (602) 242-0210

📠 (602) 242-2513

9828 North 31st Ave

#c3

Birds

NAME	STATUS
California Condor <i>Gymnogyps californianus</i> U.S.A. only, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
California Condor <i>Gymnogyps californianus</i> U.S.A. (specific portions of Arizona, Nevada, and Utah) There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8193	EXPN
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northern Mexican Gartersnake <i>Thamnophis eques megalops</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7655	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

"BREEDS ELSEWHERE" INDICATES
.....
THAT THE BIRD DOES NOT LIKELY
.....
BREED IN YOUR PROJECT AREA.)
.....

Bendire's Thrasher *Toxostoma bendirei*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9435>

Breeds Mar 15 to Jul 31

Costa's Hummingbird *Calypte costae*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9470>

Breeds Jan 15 to Jun 10

Golden Eagle *Aquila chrysaetos*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Breeds Dec 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Mohave County, Arizona



Local office

Arizona Ecological Services Field Office

☎ (602) 242-0210

📠 (602) 242-2513

9828 North 31st Ave

#c3

Birds

NAME	STATUS
California Condor <i>Gymnogyps californianus</i> U.S.A. only, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
California Condor <i>Gymnogyps californianus</i> U.S.A. (specific portions of Arizona, Nevada, and Utah) There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8193	EXPN
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northern Mexican Gartersnake <i>Thamnophis eques megalops</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7655	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

"BREEDS ELSEWHERE" INDICATES
.....
THAT THE BIRD DOES NOT LIKELY
.....
BREED IN YOUR PROJECT AREA.)
.....

Bendire's Thrasher *Toxostoma bendirei*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9435>

Breeds Mar 15 to Jul 31

Costa's Hummingbird *Calypte costae*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9470>

Breeds Jan 15 to Jun 10

Golden Eagle *Aquila chrysaetos*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Breeds Dec 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any

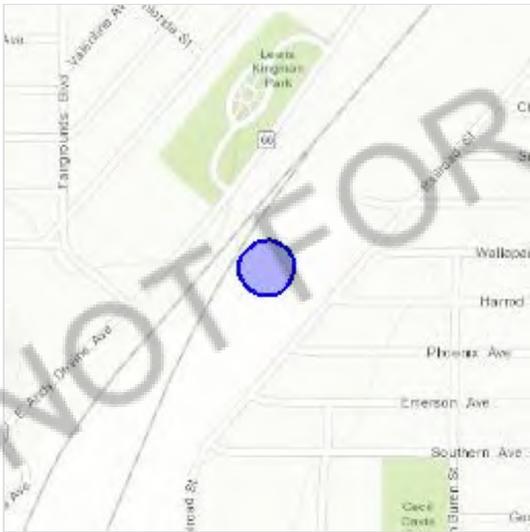
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Mohave County, Arizona



Local office

Arizona Ecological Services Field Office

☎ (602) 242-0210

📠 (602) 242-2513

9828 North 31st Ave

#c3

Birds

NAME	STATUS
California Condor <i>Gymnogyps californianus</i> U.S.A. only, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
California Condor <i>Gymnogyps californianus</i> U.S.A. (specific portions of Arizona, Nevada, and Utah) There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8193	EXPN
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northern Mexican Gartersnake <i>Thamnophis eques megalops</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7655	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Mohave County, Arizona



Local office

Arizona Ecological Services Field Office

☎ (602) 242-0210

📠 (602) 242-2513

9828 North 31st Ave

#c3

Birds

NAME	STATUS
California Condor <i>Gymnogyps californianus</i> U.S.A. only, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
California Condor <i>Gymnogyps californianus</i> U.S.A. (specific portions of Arizona, Nevada, and Utah) There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8193	EXPN
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northern Mexican Gartersnake <i>Thamnophis eques megalops</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7655	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

"BREEDS ELSEWHERE" INDICATES
.....
THAT THE BIRD DOES NOT LIKELY
.....
BREED IN YOUR PROJECT AREA.)
.....

Bendire's Thrasher *Toxostoma bendirei*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9435>

Breeds Mar 15 to Jul 31

Costa's Hummingbird *Calypte costae*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9470>

Breeds Jan 15 to Jun 10

Golden Eagle *Aquila chrysaetos*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Breeds Dec 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Mohave County, Arizona



Local office

Arizona Ecological Services Field Office

☎ (602) 242-0210

📠 (602) 242-2513

9828 North 31st Ave

#c3

Birds

NAME	STATUS
California Condor <i>Gymnogyps californianus</i> U.S.A. only, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
California Condor <i>Gymnogyps californianus</i> U.S.A. (specific portions of Arizona, Nevada, and Utah) There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8193	EXPN
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northern Mexican Gartersnake <i>Thamnophis eques megalops</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7655	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

"BREEDS ELSEWHERE" INDICATES
.....
THAT THE BIRD DOES NOT LIKELY
.....
BREED IN YOUR PROJECT AREA.)
.....

Bendire's Thrasher *Toxostoma bendirei*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9435>

Breeds Mar 15 to Jul 31

Costa's Hummingbird *Calypte costae*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9470>

Breeds Jan 15 to Jun 10

Golden Eagle *Aquila chrysaetos*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Breeds Dec 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any

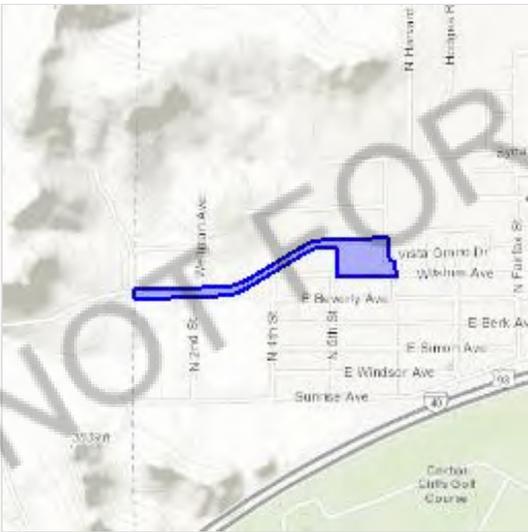
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Mohave County, Arizona



Local office

Arizona Ecological Services Field Office

☎ (602) 242-0210

📠 (602) 242-2513

9828 North 31st Ave

#c3

Birds

NAME	STATUS
California Condor <i>Gymnogyps californianus</i> U.S.A. (specific portions of Arizona, Nevada, and Utah) There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8193	EXPN
California Condor <i>Gymnogyps californianus</i> U.S.A. only, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northern Mexican Gartersnake <i>Thamnophis eques megalops</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7655	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

"BREEDS ELSEWHERE" INDICATES
.....
THAT THE BIRD DOES NOT LIKELY
.....
BREED IN YOUR PROJECT AREA.)
.....

Black-chinned Sparrow *Spizella atrogularis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9447>

Breeds Apr 15 to Jul 31

Costa's Hummingbird *Calypte costae*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9470>

Breeds Jan 15 to Jun 10

Gilded Flicker *Colaptes chrysoides*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/2960>

Breeds May 1 to Aug 10

Golden Eagle *Aquila chrysaetos*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Breeds Dec 1 to Aug 31

Lawrence's Goldfinch *Carduelis lawrencei*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9464>

Breeds Mar 20 to Sep 20

Rufous Hummingbird *selasphorus rufus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8002>

Breeds elsewhere

Rufous-winged Sparrow *Aimophila carpalis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Jun 15 to Sep 30

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Mohave County, Arizona



Local office

Arizona Ecological Services Field Office

☎ (602) 242-0210

📠 (602) 242-2513

9828 North 31st Ave

#c3

Birds

NAME	STATUS
California Condor <i>Gymnogyps californianus</i> U.S.A. (specific portions of Arizona, Nevada, and Utah) There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8193	EXPN
California Condor <i>Gymnogyps californianus</i> U.S.A. only, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northern Mexican Gartersnake <i>Thamnophis eques megalops</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7655	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

"BREEDS ELSEWHERE" INDICATES
.....
THAT THE BIRD DOES NOT LIKELY
.....
BREED IN YOUR PROJECT AREA.)
.....

Black-chinned Sparrow *Spizella atrogularis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9447>

Breeds Apr 15 to Jul 31

Costa's Hummingbird *Calypte costae*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9470>

Breeds Jan 15 to Jun 10

Gilded Flicker *Colaptes chrysoides*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/2960>

Breeds May 1 to Aug 10

Golden Eagle *Aquila chrysaetos*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Breeds Dec 1 to Aug 31

Lawrence's Goldfinch *Carduelis lawrencei*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9464>

Breeds Mar 20 to Sep 20

Rufous Hummingbird *selasphorus rufus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8002>

Breeds elsewhere

Rufous-winged Sparrow *Aimophila carpalis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Jun 15 to Sep 30

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ

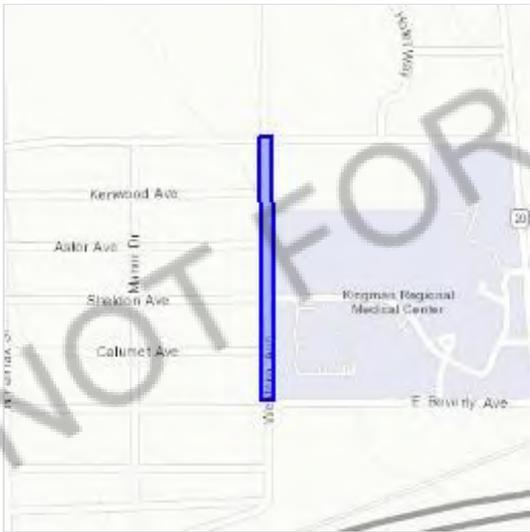
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Mohave County, Arizona



Local office

Arizona Ecological Services Field Office

☎ (602) 242-0210

📠 (602) 242-2513

9828 North 31st Ave

#c3

Birds

NAME	STATUS
California Condor <i>Gymnogyps californianus</i> U.S.A. only, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
California Condor <i>Gymnogyps californianus</i> U.S.A. (specific portions of Arizona, Nevada, and Utah) There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8193	EXPN
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northern Mexican Gartersnake <i>Thamnophis eques megalops</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7655	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

"BREEDS ELSEWHERE" INDICATES
.....
THAT THE BIRD DOES NOT LIKELY
.....
BREED IN YOUR PROJECT AREA.)
.....

Black-chinned Sparrow *Spizella atrogularis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9447>

Breeds Apr 15 to Jul 31

Costa's Hummingbird *Calypte costae*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9470>

Breeds Jan 15 to Jun 10

Gilded Flicker *Colaptes chrysoides*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/2960>

Breeds May 1 to Aug 10

Golden Eagle *Aquila chrysaetos*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Breeds Dec 1 to Aug 31

Lawrence's Goldfinch *Carduelis lawrencei*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9464>

Breeds Mar 20 to Sep 20

Rufous Hummingbird *selasphorus rufus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8002>

Breeds elsewhere

Rufous-winged Sparrow *Aimophila carpalis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Jun 15 to Sep 30

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Mohave County, Arizona



Local office

Arizona Ecological Services Field Office

☎ (602) 242-0210

📠 (602) 242-2513

9828 North 31st Ave

#c3

Birds

NAME	STATUS
California Condor <i>Gymnogyps californianus</i> U.S.A. only, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
California Condor <i>Gymnogyps californianus</i> U.S.A. (specific portions of Arizona, Nevada, and Utah) There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8193	EXPN
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northern Mexican Gartersnake <i>Thamnophis eques megalops</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7655	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

"BREEDS ELSEWHERE" INDICATES
.....
THAT THE BIRD DOES NOT LIKELY
.....
BREED IN YOUR PROJECT AREA.)
.....

Black-chinned Sparrow *Spizella atrogularis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9447>

Breeds Apr 15 to Jul 31

Costa's Hummingbird *Calypte costae*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9470>

Breeds Jan 15 to Jun 10

Gilded Flicker *Colaptes chrysoides*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/2960>

Breeds May 1 to Aug 10

Golden Eagle *Aquila chrysaetos*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Breeds Dec 1 to Aug 31

Lawrence's Goldfinch *Carduelis lawrencei*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9464>

Breeds Mar 20 to Sep 20

Rufous Hummingbird *selasphorus rufus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8002>

Breeds elsewhere

Rufous-winged Sparrow *Aimophila carpalis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Jun 15 to Sep 30

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Mohave County, Arizona



Local office

Arizona Ecological Services Field Office

☎ (602) 242-0210

📠 (602) 242-2513

9828 North 31st Ave

#c3

Birds

NAME	STATUS
California Condor <i>Gymnogyps californianus</i> U.S.A. (specific portions of Arizona, Nevada, and Utah) There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8193	EXPN
California Condor <i>Gymnogyps californianus</i> U.S.A. only, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northern Mexican Gartersnake <i>Thamnophis eques megalops</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7655	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

"BREEDS ELSEWHERE" INDICATES
.....
THAT THE BIRD DOES NOT LIKELY
.....
BREED IN YOUR PROJECT AREA.)
.....

Bendire's Thrasher *Toxostoma bendirei*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9435>

Breeds Mar 15 to Jul 31

Black-chinned Sparrow *Spizella atrogularis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9447>

Breeds Apr 15 to Jul 31

Costa's Hummingbird *Calypte costae*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9470>

Breeds Jan 15 to Jun 10

Gilded Flicker *Colaptes chrysoides*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/2960>

Breeds May 1 to Aug 10

Golden Eagle *Aquila chrysaetos*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Breeds Dec 1 to Aug 31

Lawrence's Goldfinch *Carduelis lawrencei*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9464>

Breeds Mar 20 to Sep 20

Rufous Hummingbird *selasphorus rufus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8002>

Breeds elsewhere

Rufous-winged Sparrow *Aimophila carpalis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Jun 15 to Sep 30

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Mohave County, Arizona



Local office

Arizona Ecological Services Field Office

☎ (602) 242-0210

📠 (602) 242-2513

9828 North 31st Ave

#c3

Birds

NAME	STATUS
California Condor <i>Gymnogyps californianus</i> U.S.A. only, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
California Condor <i>Gymnogyps californianus</i> U.S.A. (specific portions of Arizona, Nevada, and Utah) There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8193	EXPN
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northern Mexican Gartersnake <i>Thamnophis eques megalops</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7655	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

"BREEDS ELSEWHERE" INDICATES
.....
THAT THE BIRD DOES NOT LIKELY
.....
BREED IN YOUR PROJECT AREA.)
.....

Bendire's Thrasher *Toxostoma bendirei*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9435>

Breeds Mar 15 to Jul 31

Black-chinned Sparrow *Spizella atrogularis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9447>

Breeds Apr 15 to Jul 31

Costa's Hummingbird *Calypte costae*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9470>

Breeds Jan 15 to Jun 10

Gilded Flicker *Colaptes chrysoides*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/2960>

Breeds May 1 to Aug 10

Golden Eagle *Aquila chrysaetos*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Breeds Dec 1 to Aug 31

Lawrence's Goldfinch *Carduelis lawrencei*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9464>

Breeds Mar 20 to Sep 20

Rufous Hummingbird *selasphorus rufus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8002>

Breeds elsewhere

Rufous-winged Sparrow *Aimophila carpalis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Jun 15 to Sep 30

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Mohave County, Arizona



Local office

Arizona Ecological Services Field Office

☎ (602) 242-0210

📠 (602) 242-2513

9828 North 31st Ave

#c3

Birds

NAME	STATUS
California Condor <i>Gymnogyps californianus</i> U.S.A. only, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
California Condor <i>Gymnogyps californianus</i> U.S.A. (specific portions of Arizona, Nevada, and Utah) There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8193	EXPN
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northern Mexican Gartersnake <i>Thamnophis eques megalops</i> There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7655	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

"BREEDS ELSEWHERE" INDICATES
.....
THAT THE BIRD DOES NOT LIKELY
.....
BREED IN YOUR PROJECT AREA.)
.....

Black-chinned Sparrow *Spizella atrogularis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9447>

Breeds Apr 15 to Jul 31

Costa's Hummingbird *Calypte costae*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9470>

Breeds Jan 15 to Jun 10

Gilded Flicker *Colaptes chrysoides*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/2960>

Breeds May 1 to Aug 10

Golden Eagle *Aquila chrysaetos*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Breeds Dec 1 to Aug 31

Lawrence's Goldfinch *Carduelis lawrencei*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9464>

Breeds Mar 20 to Sep 20

Rufous Hummingbird *selasphorus rufus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8002>

Breeds elsewhere

Rufous-winged Sparrow *Aimophila carpalis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Jun 15 to Sep 30

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ

Appendix C

AGFD Online Environmental Review Tool Reports



Arizona Environmental Online Review Tool Report



Arizona Game and Fish Department Mission

To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:

KADMP - Solution 1.4

Project Description:

KADMP - Potential Drainage Solution 1.4

Project Type:

Water Use, Transfer, and Channel Activities, Dredging; reservoir/channel maintenance

Contact Person:

Jean Marie Rieck

Organization:

JE Fuller Hydrology & Geomorphology, Inc.

On Behalf Of:

OTHER

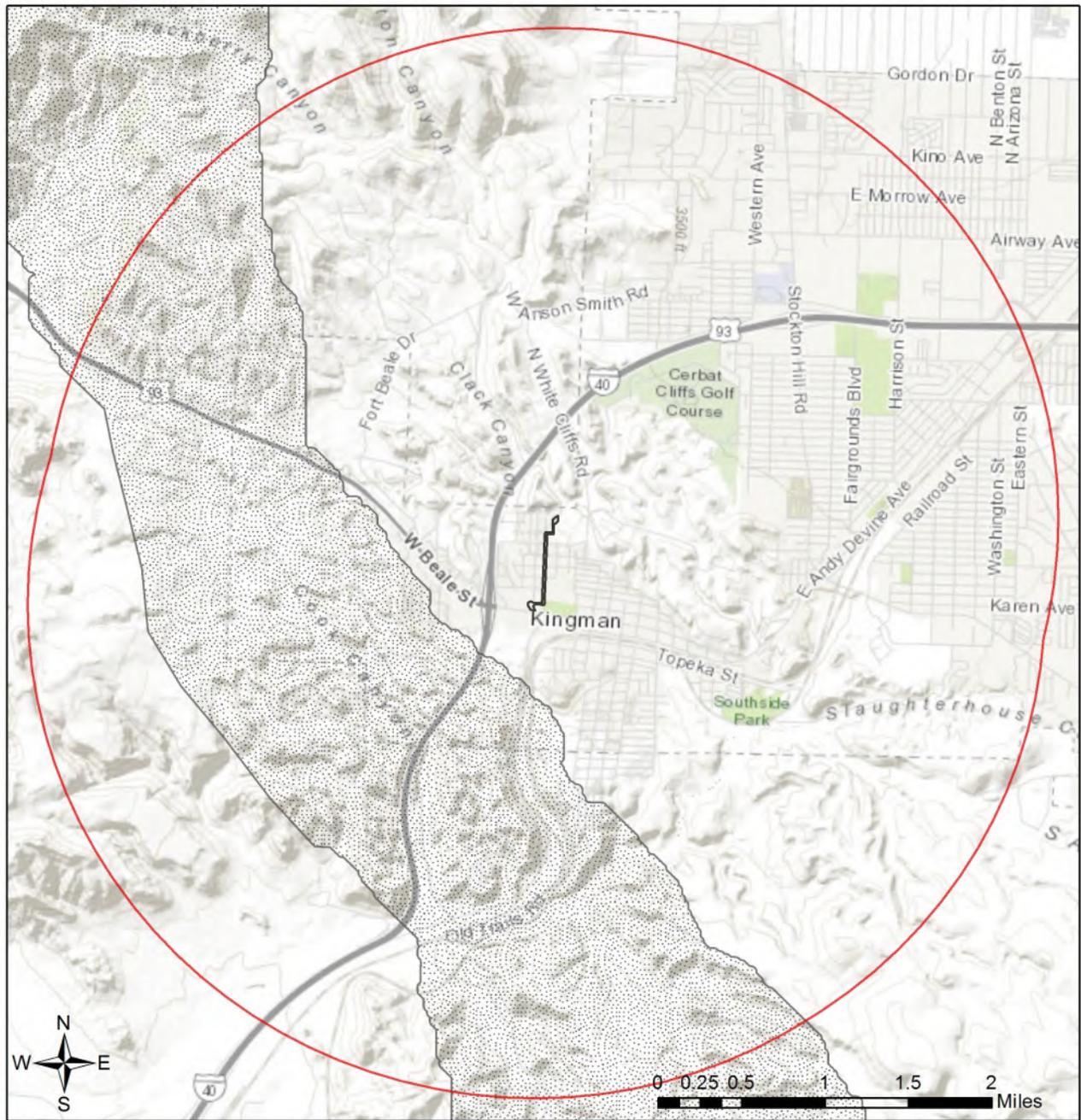
Project ID:

HGIS-10804

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

KADMP - Solution 1.4

Important Areas



- | | |
|--------------------------------------|--|
| Project Boundary | Wildlife Movement Area - Riparian/Wash |
| Buffered Project Boundary | Wildlife Connectivity |
| County Stakeholder Assessment | |
| Wildlife Crossing Area | Important Connectivity Zones |
| Wildlife Movement Area - Diffuse | Pinal County Riparian |
| Wildlife Movement Area - Landscape | Critical Habitat |
| | Important Bird Areas |

Project Size (acres): 6.79
 Lat/Long (DD): 35.1944 / -114.0614
 County(s): Mohave
 AGFD Region(s): Kingman
 Township/Range(s): T21N, R17W
 USGS Quad(s): KINGMAN

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Astragalus lentiginosus</i> var. <i>ambiguus</i>	Freckled Milk-vetch	SC				
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Heloderma suspectum cinctum</i>	Banded Gila Monster	SC				1A

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/>

No Special Areas Detected

No special areas were detected within the project vicinity.

Species of Greatest Conservation Need Predicted within the Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aix sponsa</i>	Wood Duck					1B
<i>Ammospermophilus harrisi</i>	Harris' Antelope Squirrel					1B
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Botaurus lentiginosus</i>	American Bittern					1B
<i>Calypte costae</i>	Costa's Hummingbird					1C
<i>Colaptes chrysoides</i>	Gilded Flicker			S		1B
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC	S	S		1B
<i>Euderma maculatum</i>	Spotted Bat	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC	S	S		1A
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Haliaeetus leucocephalus</i>	Bald Eagle	SC, BGA	S	S		1A
<i>Heloderma suspectum</i>	Gila Monster					1A
<i>Incilius alvarius</i>	Sonoran Desert Toad					1B
<i>Lasiurus blossevillii</i>	Western Red Bat		S			1B
<i>Lithobates pipiens</i>	Northern Leopard Frog		S	S		1A
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC		S		1B
<i>Melanerpes uropygialis</i>	Gila Woodpecker					1B
<i>Melospiza lincolni</i>	Lincoln's Sparrow					1B
<i>Micruroides euryxanthus</i>	Sonoran Coralsnake					1B
<i>Myotis occultus</i>	Arizona Myotis	SC		S		1B
<i>Myotis velifer</i>	Cave Myotis	SC		S		1B
<i>Myotis yumanensis</i>	Yuma Myotis	SC				1B

Arizona Environmental Online Review Tool Report



Arizona Game and Fish Department Mission

To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:

KADMP - Solution 1.8

Project Description:

KADMP - Potential Drainage Solution 1.8

Project Type:

Water Use, Transfer, and Channel Activities, Dredging; reservoir/channel maintenance

Contact Person:

Jean Marie Rieck

Organization:

JE Fuller Hydrology & Geomorphology, Inc.

On Behalf Of:

OTHER

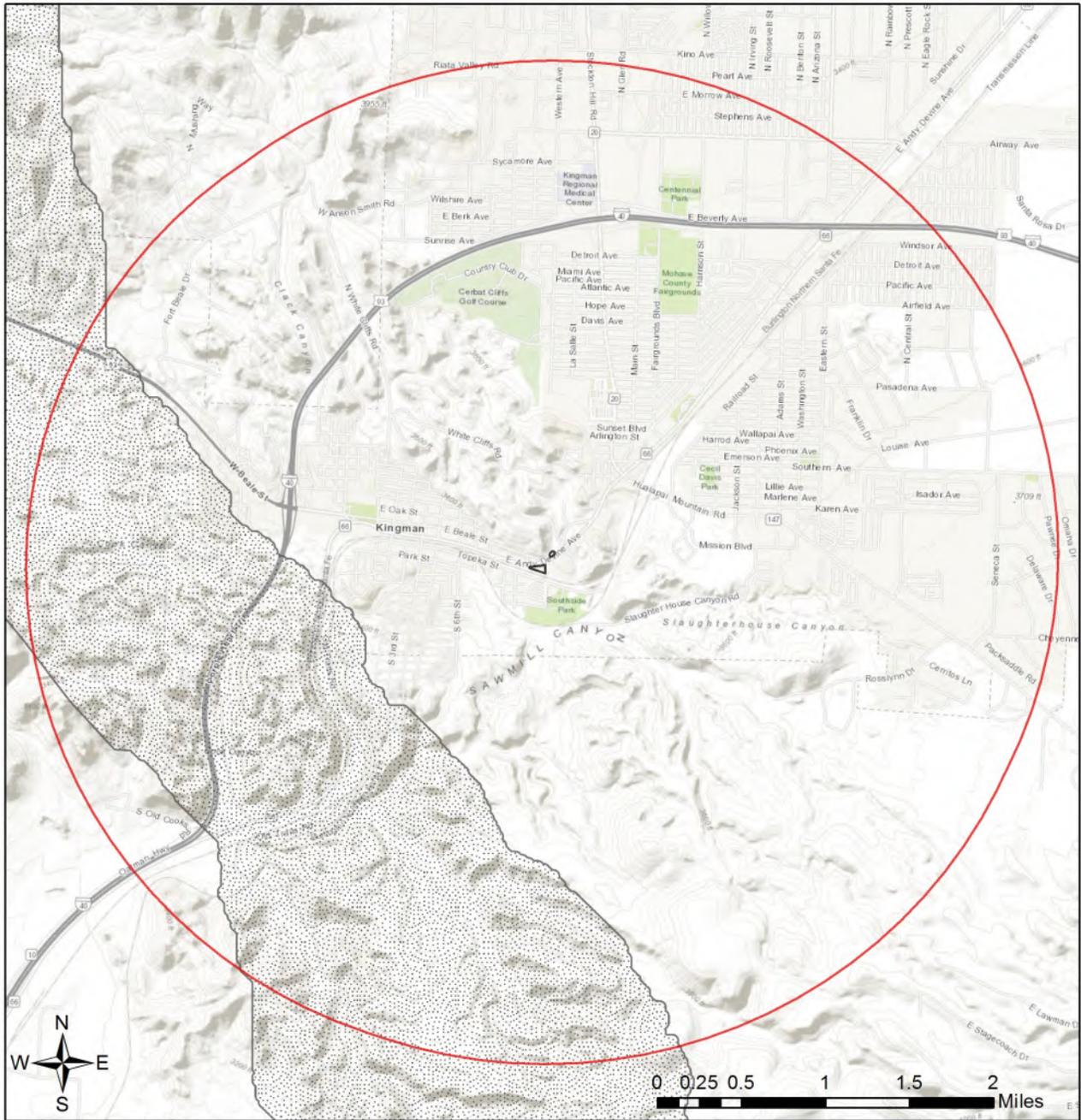
Project ID:

HGIS-10805

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

KADMP - Solution 1.8

Important Areas



- | | |
|--------------------------------------|--|
| Project Boundary | Wildlife Movement Area - Riparian/Wash |
| Buffered Project Boundary | Wildlife Connectivity |
| County Stakeholder Assessment | Important Connectivity Zones |
| Wildlife Crossing Area | Pinal County Riparian |
| Wildlife Movement Area - Diffuse | Critical Habitat |
| Wildlife Movement Area - Landscape | Important Bird Areas |

Project Size (acres): 2.17
 Lat/Long (DD): 35.1864 / -114.0404
 County(s): Mohave
 AGFD Region(s): Kingman
 Township/Range(s): T21N, R16W; T21N, R17W
 USGS Quad(s): KINGMAN

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Astragalus lentiginosus</i> var. <i>ambiguus</i>	Freckled Milk-vetch	SC				
<i>Athene cucularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Heloderma suspectum cinctum</i>	Banded Gila Monster	SC				1A

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/>

No Special Areas Detected

No special areas were detected within the project vicinity.

Species of Greatest Conservation Need Predicted within the Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aix sponsa</i>	Wood Duck					1B
<i>Ammospermophilus harrisi</i>	Harris' Antelope Squirrel					1B
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Athene cucularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Botaurus lentiginosus</i>	American Bittern					1B
<i>Calypte costae</i>	Costa's Hummingbird					1C
<i>Colaptes chrysoides</i>	Gilded Flicker			S		1B
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC	S	S		1B
<i>Euderma maculatum</i>	Spotted Bat	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC	S	S		1A
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Haliaeetus leucocephalus</i>	Bald Eagle	SC, BGA	S	S		1A
<i>Heloderma suspectum</i>	Gila Monster					1A
<i>Incilius alvarius</i>	Sonoran Desert Toad					1B
<i>Lasiurus blossevillii</i>	Western Red Bat		S			1B
<i>Lithobates pipiens</i>	Northern Leopard Frog		S	S		1A
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC		S		1B
<i>Melanerpes uropygialis</i>	Gila Woodpecker					1B
<i>Melospiza lincolni</i>	Lincoln's Sparrow					1B
<i>Micruroides euryxanthus</i>	Sonoran Coralsnake					1B
<i>Myotis occultus</i>	Arizona Myotis	SC		S		1B
<i>Myotis velifer</i>	Cave Myotis	SC		S		1B
<i>Myotis yumanensis</i>	Yuma Myotis	SC				1B

Arizona Environmental Online Review Tool Report



Arizona Game and Fish Department Mission

To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:

KADMP - Solution 1.11

Project Description:

KADMP - Potential Drainage Solution 1.11

Project Type:

Water Use, Transfer, and Channel Activities, Dredging; reservoir/channel maintenance

Contact Person:

Jean Marie Rieck

Organization:

JE Fuller Hydrology & Geomorphology, Inc.

On Behalf Of:

OTHER

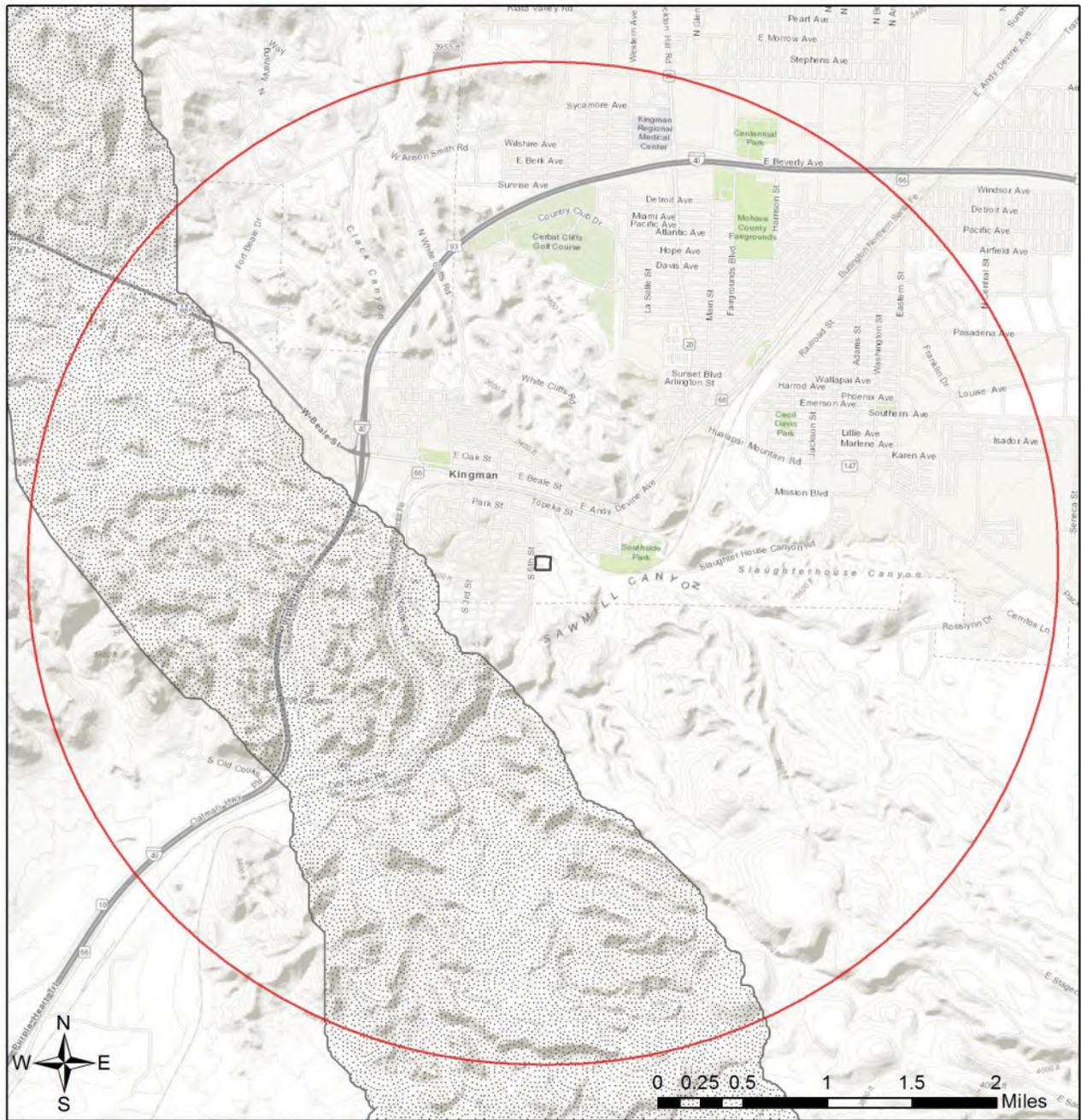
Project ID:

HGIS-10806

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

KADMP - Solution 1.11

Important Areas



- | | |
|--------------------------------------|--|
| Project Boundary | Wildlife Movement Area - Riparian/Wash |
| Buffered Project Boundary | Wildlife Connectivity |
| County Stakeholder Assessment | Important Connectivity Zones |
| Wildlife Crossing Area | Pinal County Riparian |
| Wildlife Movement Area - Diffuse | Critical Habitat |
| Wildlife Movement Area - Landscape | Important Bird Areas |

Project Size (acres): 4.60
 Lat/Long (DD): 35.1818 / -114.0479
 County(s): Mohave
 AGFD Region(s): Kingman
 Township/Range(s): T21N, R17W
 USGS Quad(s): KINGMAN

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Astragalus lentiginosus</i> var. <i>ambiguus</i>	Freckled Milk-vetch	SC				
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Heloderma suspectum cinctum</i>	Banded Gila Monster	SC				1A

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/>

No Special Areas Detected

No special areas were detected within the project vicinity.

Species of Greatest Conservation Need Predicted within the Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aix sponsa</i>	Wood Duck					1B
<i>Ammospermophilus harrisi</i>	Harris' Antelope Squirrel					1B
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Botaurus lentiginosus</i>	American Bittern					1B
<i>Calypte costae</i>	Costa's Hummingbird					1C
<i>Colaptes chrysoides</i>	Gilded Flicker			S		1B
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC	S	S		1B
<i>Euderma maculatum</i>	Spotted Bat	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC	S	S		1A
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Haliaeetus leucocephalus</i>	Bald Eagle	SC, BGA	S	S		1A
<i>Heloderma suspectum</i>	Gila Monster					1A
<i>Incilius alvarius</i>	Sonoran Desert Toad					1B
<i>Lasiurus blossevillii</i>	Western Red Bat		S			1B
<i>Lithobates pipiens</i>	Northern Leopard Frog		S	S		1A
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC		S		1B
<i>Melanerpes uropygialis</i>	Gila Woodpecker					1B
<i>Melospiza lincolni</i>	Lincoln's Sparrow					1B
<i>Micruroides euryxanthus</i>	Sonoran Coralsnake					1B
<i>Myotis occultus</i>	Arizona Myotis	SC		S		1B
<i>Myotis velifer</i>	Cave Myotis	SC		S		1B
<i>Myotis yumanensis</i>	Yuma Myotis	SC				1B

Arizona Environmental Online Review Tool Report



Arizona Game and Fish Department Mission

To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:

KADMP - Solution 2.3

Project Description:

KADMP - Potential Drainage Solution 2.3

Project Type:

Water Use, Transfer, and Channel Activities, Water delivery and supply line or effluent delivery line (operated by municipality or water company), New lines or expansion of existing lines

Contact Person:

Jean Marie Rieck

Organization:

JE Fuller Hydrology & Geomorphology, Inc.

On Behalf Of:

OTHER

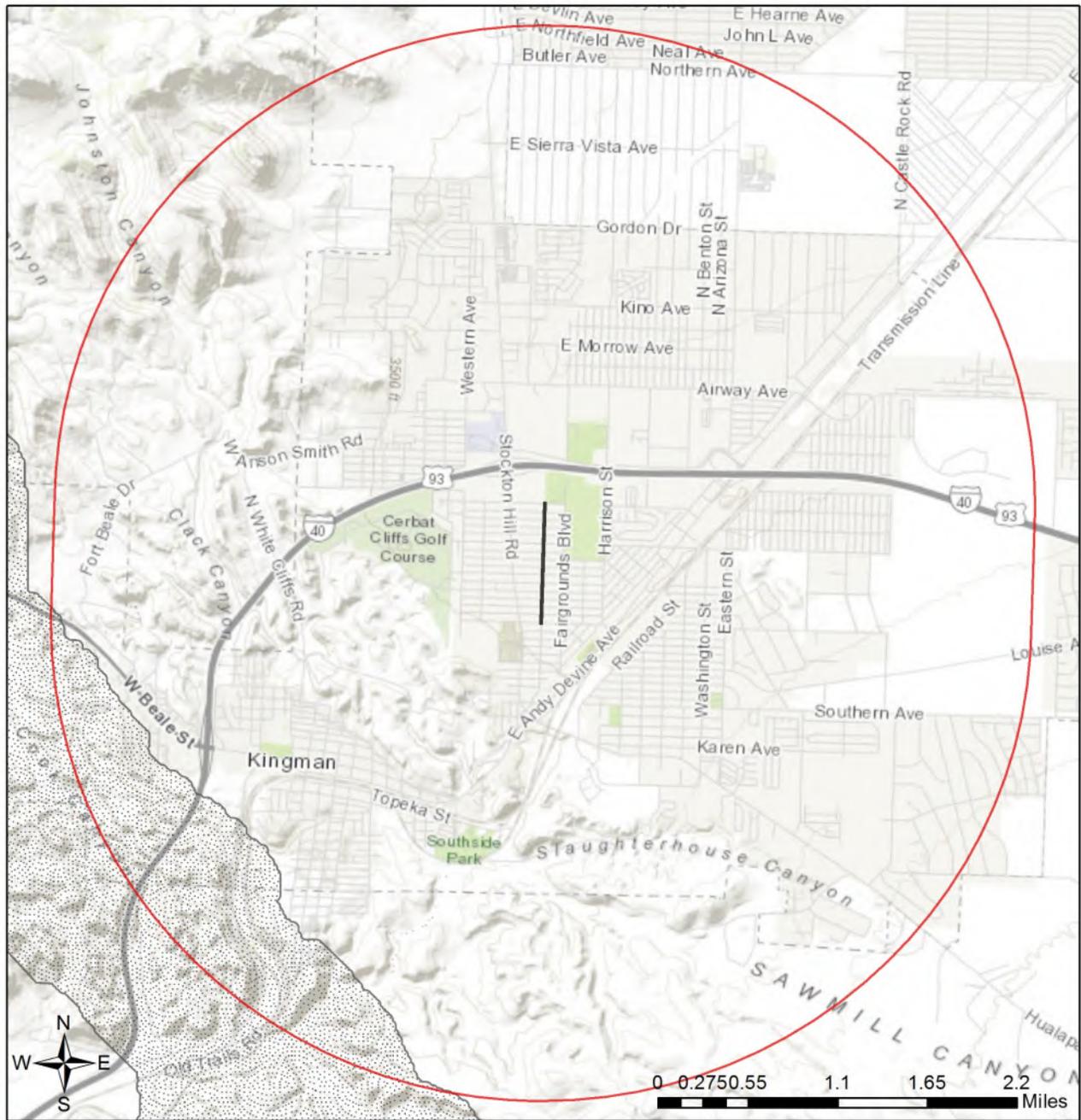
Project ID:

HGIS-10807

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

KADMP - Solution 2.3

Important Areas



- | | |
|--------------------------------------|--|
| Project Boundary | Wildlife Movement Area - Riparian/Wash |
| Buffered Project Boundary | Wildlife Connectivity |
| County Stakeholder Assessment | |
| Wildlife Crossing Area | Important Connectivity Zones |
| Wildlife Movement Area - Diffuse | Pinal County Riparian |
| Wildlife Movement Area - Landscape | Critical Habitat |
| | Important Bird Areas |

Project Size (acres): 4.63
 Lat/Long (DD): 35.2086 / -114.0313
 County(s): Mohave
 AGFD Region(s): Kingman
 Township/Range(s): T21N, R16W
 USGS Quad(s): KINGMAN

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Astragalus lentiginosus</i> var. <i>ambiguus</i>	Freckled Milk-vetch	SC				
<i>Athene cucularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Heloderma suspectum cinctum</i>	Banded Gila Monster	SC				1A

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/>

No Special Areas Detected

No special areas were detected within the project vicinity.

Species of Greatest Conservation Need Predicted within the Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aix sponsa</i>	Wood Duck					1B
<i>Ammospermophilus harrisi</i>	Harris' Antelope Squirrel					1B
<i>Antilocapra americana americana</i>	American Pronghorn					1B
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Athene cucularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Baeolophus ridgwayi</i>	Juniper Titmouse					1C
<i>Buteo swainsoni</i>	Swainson's Hawk					1C
<i>Calypte costae</i>	Costa's Hummingbird					1C
<i>Castor canadensis</i>	American Beaver					1B
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC	S	S		1B
<i>Euderma maculatum</i>	Spotted Bat	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC	S	S		1A
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Haliaeetus leucocephalus</i>	Bald Eagle	SC, BGA	S	S		1A
<i>Heloderma suspectum</i>	Gila Monster					1A
<i>Incilius alvarius</i>	Sonoran Desert Toad					1B
<i>Lasiurus blossevillii</i>	Western Red Bat		S			1B
<i>Lithobates pipiens</i>	Northern Leopard Frog		S	S		1A
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC		S		1B
<i>Melanerpes uropygialis</i>	Gila Woodpecker					1B
<i>Melospiza lincolni</i>	Lincoln's Sparrow					1B
<i>Micruroides euryxanthus</i>	Sonoran Coralsnake					1B
<i>Myotis occultus</i>	Arizona Myotis	SC		S		1B

Arizona Environmental Online Review Tool Report



Arizona Game and Fish Department Mission

To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:

KADMP - Solution 2.4

Project Description:

KADMP - Potential Drainage Solution 2.4

Project Type:

Water Use, Transfer, and Channel Activities, Water delivery and supply line or effluent delivery line (operated by municipality or water company), New lines or expansion of existing lines

Contact Person:

Jean Marie Rieck

Organization:

JE Fuller Hydrology & Geomorphology, Inc.

On Behalf Of:

OTHER

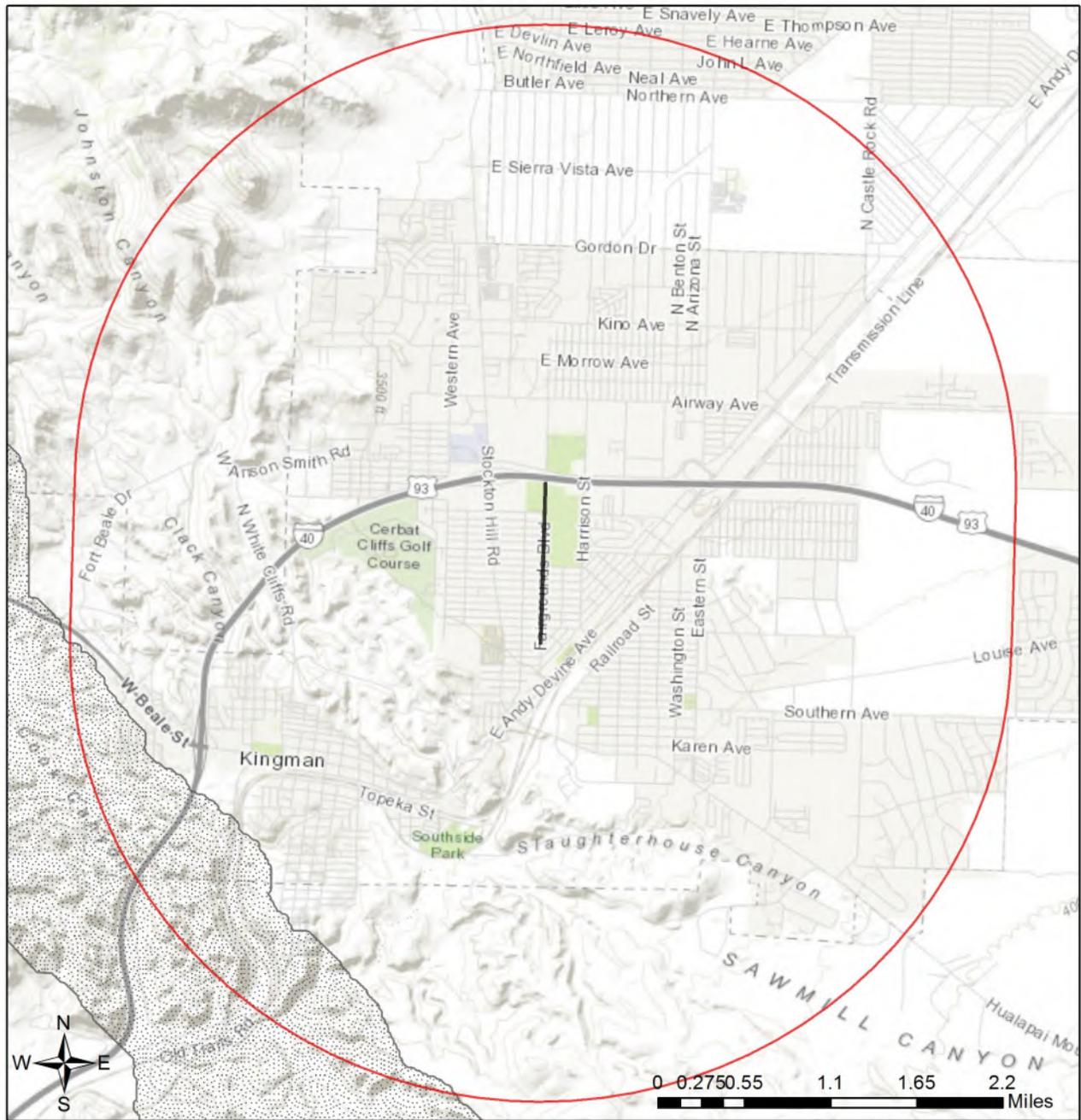
Project ID:

HGIS-10808

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

KADMP - Solution 2.4

Important Areas



- | | |
|--------------------------------------|--|
| Project Boundary | Wildlife Movement Area - Riparian/Wash |
| Buffered Project Boundary | Wildlife Connectivity |
| County Stakeholder Assessment | |
| Wildlife Crossing Area | Important Connectivity Zones |
| Wildlife Movement Area - Diffuse | Pinal County Riparian |
| Wildlife Movement Area - Landscape | Critical Habitat |
| | Important Bird Areas |

Project Size (acres): 7.13
 Lat/Long (DD): 35.2090 / -114.0291
 County(s): Mohave
 AGFD Region(s): Kingman
 Township/Range(s): T21N, R16W
 USGS Quad(s): KINGMAN

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Astragalus lentiginosus</i> var. <i>ambiguus</i>	Freckled Milk-vetch	SC				
<i>Athene cucularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Heloderma suspectum cinctum</i>	Banded Gila Monster	SC				1A

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/>

No Special Areas Detected

No special areas were detected within the project vicinity.

Species of Greatest Conservation Need Predicted within the Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aix sponsa</i>	Wood Duck					1B
<i>Ammospermophilus harrisi</i>	Harris' Antelope Squirrel					1B
<i>Antilocapra americana americana</i>	American Pronghorn					1B
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Athene cucularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Baeolophus ridgwayi</i>	Juniper Titmouse					1C
<i>Buteo swainsoni</i>	Swainson's Hawk					1C
<i>Calypte costae</i>	Costa's Hummingbird					1C
<i>Castor canadensis</i>	American Beaver					1B
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC	S	S		1B
<i>Euderma maculatum</i>	Spotted Bat	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC	S	S		1A
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Haliaeetus leucocephalus</i>	Bald Eagle	SC, BGA	S	S		1A
<i>Heloderma suspectum</i>	Gila Monster					1A
<i>Incilius alvarius</i>	Sonoran Desert Toad					1B
<i>Lasiurus blossevillii</i>	Western Red Bat		S			1B
<i>Lithobates pipiens</i>	Northern Leopard Frog		S	S		1A
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC		S		1B
<i>Melanerpes uropygialis</i>	Gila Woodpecker					1B
<i>Melospiza lincolni</i>	Lincoln's Sparrow					1B
<i>Micruroides euryxanthus</i>	Sonoran Coralsnake					1B
<i>Myotis occultus</i>	Arizona Myotis	SC		S		1B

Arizona Environmental Online Review Tool Report



Arizona Game and Fish Department Mission

To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:

KADMP - Solution 3.1

Project Description:

KADMP - Potential Drainage Solution 3.1

Project Type:

Water Use, Transfer, and Channel Activities, Detention basin

Contact Person:

Jean Marie Rieck

Organization:

JE Fuller Hydrology & Geomorphology, Inc.

On Behalf Of:

OTHER

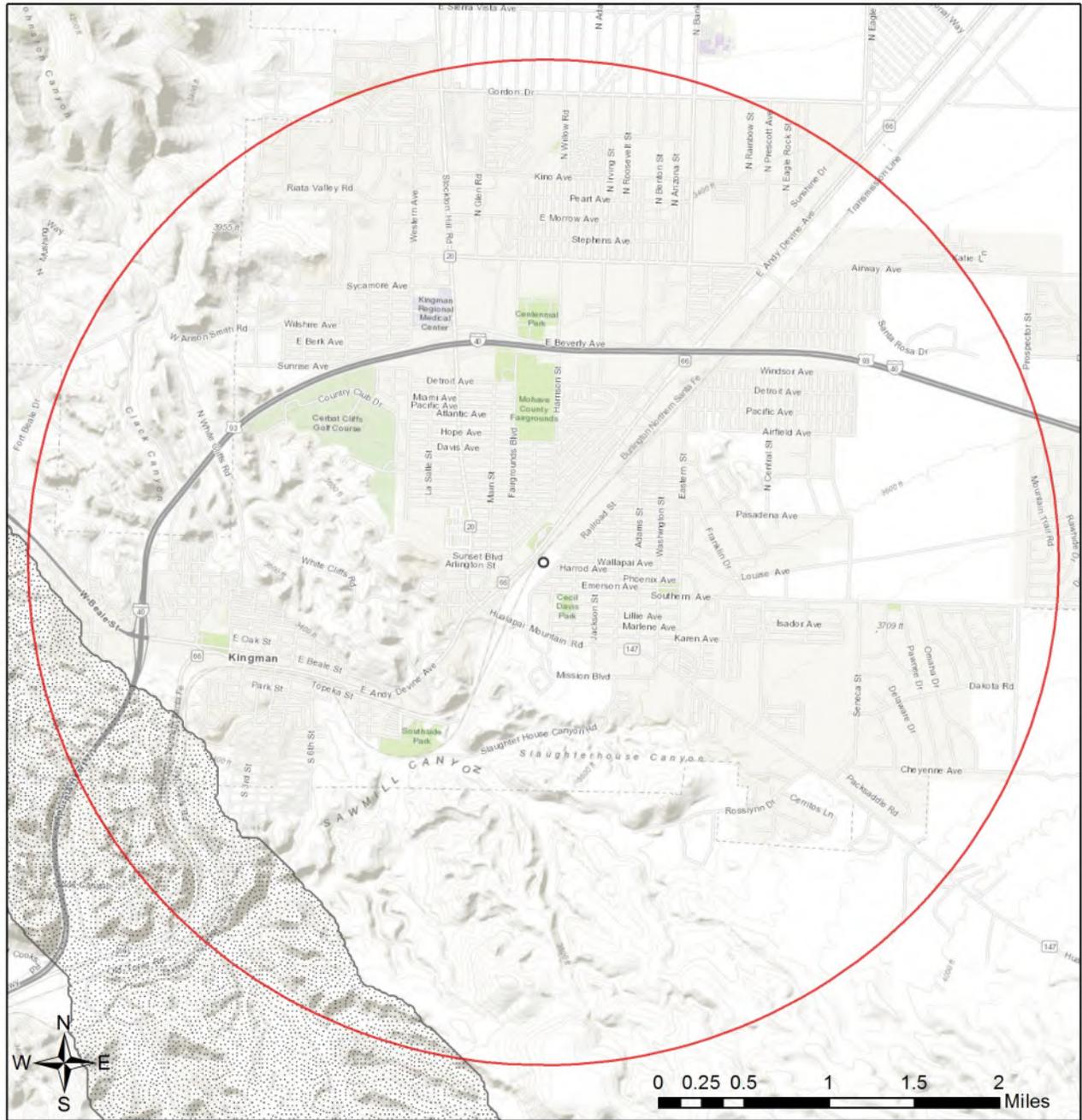
Project ID:

HGIS-10809

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

KADMP - Solution 3.1

Important Areas



- | | |
|--------------------------------------|--|
| Project Boundary | Wildlife Movement Area - Riparian/Wash |
| Buffered Project Boundary | Wildlife Connectivity |
| County Stakeholder Assessment | Important Connectivity Zones |
| Wildlife Crossing Area | Pinal County Riparian |
| Wildlife Movement Area - Diffuse | Critical Habitat |
| Wildlife Movement Area - Landscape | Important Bird Areas |

Project Size (acres): 1.48
 Lat/Long (DD): 35.1984 / -114.0256
 County(s): Mohave
 AGFD Region(s): Kingman
 Township/Range(s): T21N, R16W
 USGS Quad(s): KINGMAN

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Astragalus lentiginosus</i> var. <i>ambiguus</i>	Freckled Milk-vetch	SC				
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Heloderma suspectum cinctum</i>	Banded Gila Monster	SC				1A

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/>

No Special Areas Detected

No special areas were detected within the project vicinity.

Species of Greatest Conservation Need Predicted within the Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aix sponsa</i>	Wood Duck					1B
<i>Ammospermophilus harrisi</i>	Harris' Antelope Squirrel					1B
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Baeolophus ridgwayi</i>	Juniper Titmouse					1C
<i>Buteo swainsoni</i>	Swainson's Hawk					1C
<i>Calypte costae</i>	Costa's Hummingbird					1C
<i>Castor canadensis</i>	American Beaver					1B
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC	S	S		1B
<i>Euderma maculatum</i>	Spotted Bat	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC	S	S		1A
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Haliaeetus leucocephalus</i>	Bald Eagle	SC, BGA	S	S		1A
<i>Heloderma suspectum</i>	Gila Monster					1A
<i>Incilius alvarius</i>	Sonoran Desert Toad					1B
<i>Lasiurus blossevillii</i>	Western Red Bat		S			1B
<i>Lithobates pipiens</i>	Northern Leopard Frog		S	S		1A
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC		S		1B
<i>Melanerpes uropygialis</i>	Gila Woodpecker					1B
<i>Melospiza lincolni</i>	Lincoln's Sparrow					1B
<i>Micruroides euryxanthus</i>	Sonoran Coralsnake					1B
<i>Myotis occultus</i>	Arizona Myotis	SC		S		1B
<i>Myotis velifer</i>	Cave Myotis	SC		S		1B

Arizona Environmental Online Review Tool Report



Arizona Game and Fish Department Mission

To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:

KADMP - Solution 3.7

Project Description:

KADMP - Potential Drainage Solution 3.7

Project Type:

Water Use, Transfer, and Channel Activities, Dredging; reservoir/channel maintenance

Contact Person:

Jean Marie Rieck

Organization:

JE Fuller Hydrology & Geomorphology, Inc.

On Behalf Of:

OTHER

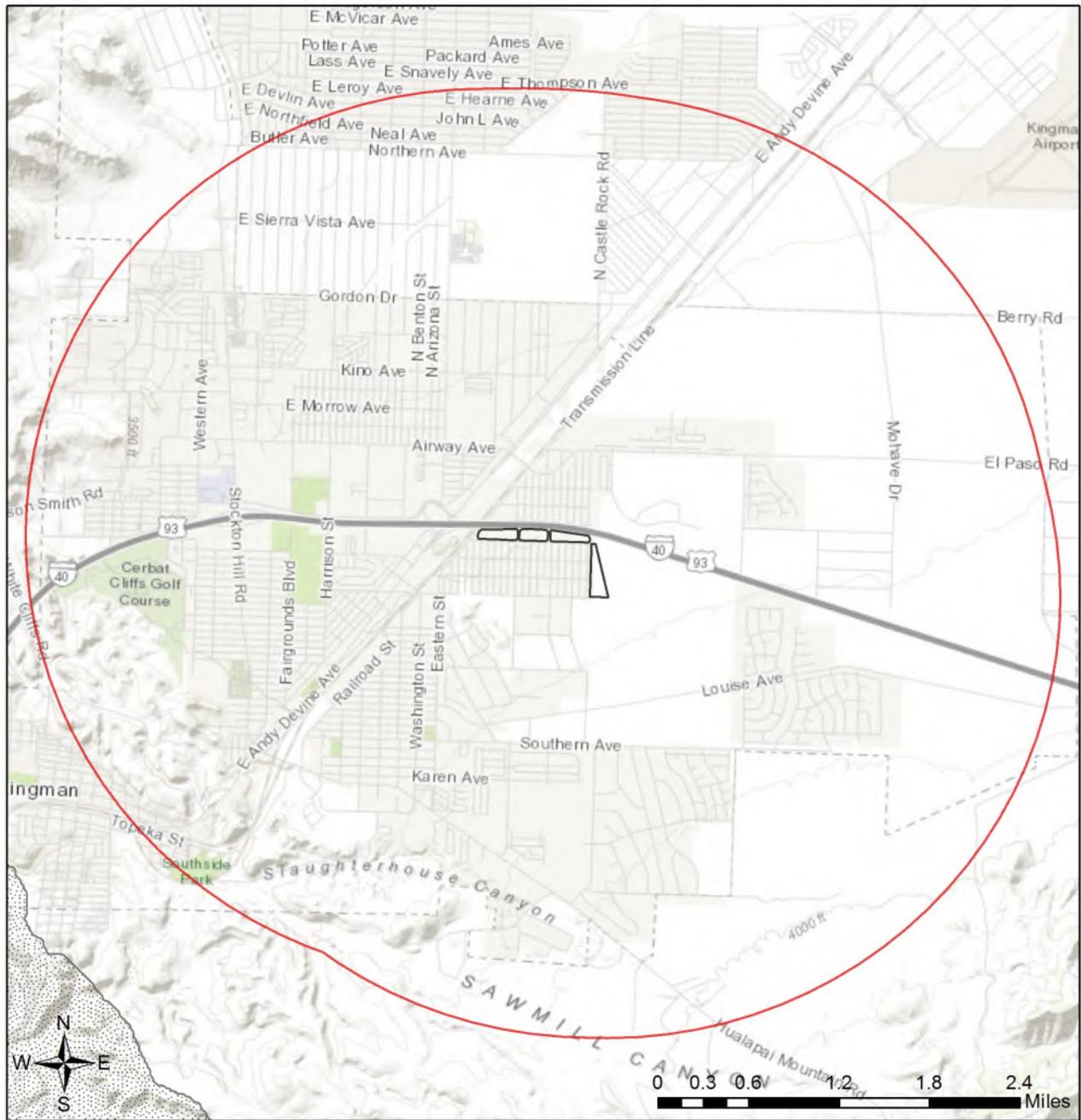
Project ID:

HGIS-10802

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

KADMP - Solution 3.7

Important Areas



- | | |
|--------------------------------------|--|
| Project Boundary | Wildlife Movement Area - Riparian/Wash |
| Buffered Project Boundary | Wildlife Connectivity |
| County Stakeholder Assessment | Important Connectivity Zones |
| Wildlife Crossing Area | Pinal County Riparian |
| Wildlife Movement Area - Diffuse | Critical Habitat |
| Wildlife Movement Area - Landscape | Important Bird Areas |

Project Size (acres): 47.89
 Lat/Long (DD): 35.2125 / -113.9931
 County(s): Mohave
 AGFD Region(s): Kingman
 Township/Range(s): T21N, R16W
 USGS Quad(s): KINGMAN; RATTLESNAKE HILL

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Heloderma suspectum cinctum</i>	Banded Gila Monster	SC				1A

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/>

No Special Areas Detected

No special areas were detected within the project vicinity.

Species of Greatest Conservation Need Predicted within the Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aix sponsa</i>	Wood Duck					1B
<i>Ammospermophilus harrisi</i>	Harris' Antelope Squirrel					1B
<i>Antilocapra americana americana</i>	American Pronghorn					1B
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Athene cucularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Buteo swainsoni</i>	Swainson's Hawk					1C
<i>Calypte costae</i>	Costa's Hummingbird					1C
<i>Castor canadensis</i>	American Beaver					1B
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC	S	S		1B
<i>Euderma maculatum</i>	Spotted Bat	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC	S	S		1A
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Haliaeetus leucocephalus</i>	Bald Eagle	SC, BGA	S	S		1A
<i>Heloderma suspectum</i>	Gila Monster					1A
<i>Lasiurus blossevillii</i>	Western Red Bat		S			1B
<i>Lithobates pipiens</i>	Northern Leopard Frog		S	S		1A
<i>Melanerpes uropygialis</i>	Gila Woodpecker					1B
<i>Melospiza lincolni</i>	Lincoln's Sparrow					1B
<i>Micruroides euryxanthus</i>	Sonoran Coralsnake					1B
<i>Myotis occultus</i>	Arizona Myotis	SC		S		1B
<i>Myotis velifer</i>	Cave Myotis	SC		S		1B
<i>Myotis yumanensis</i>	Yuma Myotis	SC				1B
<i>Oreoscoptes montanus</i>	Sage Thrasher					1C
<i>Oreothlypis luciae</i>	Lucy's Warbler					1C
<i>Sphyrapicus nuchalis</i>	Red-naped Sapsucker					1C
<i>Spizella atrogularis</i>	Black-chinned Sparrow					1C

Arizona Environmental Online Review Tool Report



Arizona Game and Fish Department Mission

To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:

KADMP - Solution 5.1

Project Description:

KADMP - Potential Drainage Solution 5.1

Project Type:

Water Use, Transfer, and Channel Activities, Dredging; reservoir/channel maintenance

Contact Person:

Jean Marie Rieck

Organization:

JE Fuller Hydrology & Geomorphology, Inc.

On Behalf Of:

OTHER

Project ID:

HGIS-10811

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

KADMP - Solution 5.1

Important Areas



- | | |
|--------------------------------------|--|
| Project Boundary | Wildlife Movement Area - Riparian/Wash |
| Buffered Project Boundary | Wildlife Connectivity |
| County Stakeholder Assessment | Important Connectivity Zones |
| Wildlife Crossing Area | Pinal County Riparian |
| Wildlife Movement Area - Diffuse | Critical Habitat |
| Wildlife Movement Area - Landscape | Important Bird Areas |

Project Size (acres): 10.13
 Lat/Long (DD): 35.2329 / -114.0158
 County(s): Mohave
 AGFD Region(s): Kingman
 Township/Range(s): T21N, R16W
 USGS Quad(s): KINGMAN

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/>

No Special Areas Detected

No special areas were detected within the project vicinity.

Species of Greatest Conservation Need Predicted within the Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aix sponsa</i>	Wood Duck					1B
<i>Ammospermophilus harrisi</i>	Harris' Antelope Squirrel					1B
<i>Antilocapra americana americana</i>	American Pronghorn					1B
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Botaurus lentiginosus</i>	American Bittern					1B
<i>Buteo swainsoni</i>	Swainson's Hawk					1C
<i>Calypte costae</i>	Costa's Hummingbird					1C
<i>Castor canadensis</i>	American Beaver					1B
<i>Colaptes chrysoides</i>	Gilded Flicker			S		1B
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC	S	S		1B
<i>Euderma maculatum</i>	Spotted Bat	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC	S	S		1A
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Haliaeetus leucocephalus</i>	Bald Eagle	SC, BGA	S	S		1A
<i>Heloderma suspectum</i>	Gila Monster					1A
<i>Lasiurus blossevillii</i>	Western Red Bat		S			1B
<i>Lithobates pipiens</i>	Northern Leopard Frog		S	S		1A
<i>Melanerpes uropygialis</i>	Gila Woodpecker					1B
<i>Melospiza lincolni</i>	Lincoln's Sparrow					1B
<i>Micruroides euryxanthus</i>	Sonoran Coralsnake					1B
<i>Myotis occultus</i>	Arizona Myotis	SC		S		1B
<i>Myotis velifer</i>	Cave Myotis	SC		S		1B
<i>Myotis yumanensis</i>	Yuma Myotis	SC				1B
<i>Oreoscoptes montanus</i>	Sage Thrasher					1C
<i>Oreothlypis luciae</i>	Lucy's Warbler					1C
<i>Sphyrapicus nuchalis</i>	Red-naped Sapsucker					1C

Arizona Environmental Online Review Tool Report



Arizona Game and Fish Department Mission

To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:

KADMP - Solution 6.1/6.2

Project Description:

KADMP - Potential Drainage Solution 6.1/6.2

Project Type:

Water Use, Transfer, and Channel Activities, Water diversion/channelization

Contact Person:

Jean Marie Rieck

Organization:

JE Fuller Hydrology & Geomorphology, Inc.

On Behalf Of:

OTHER

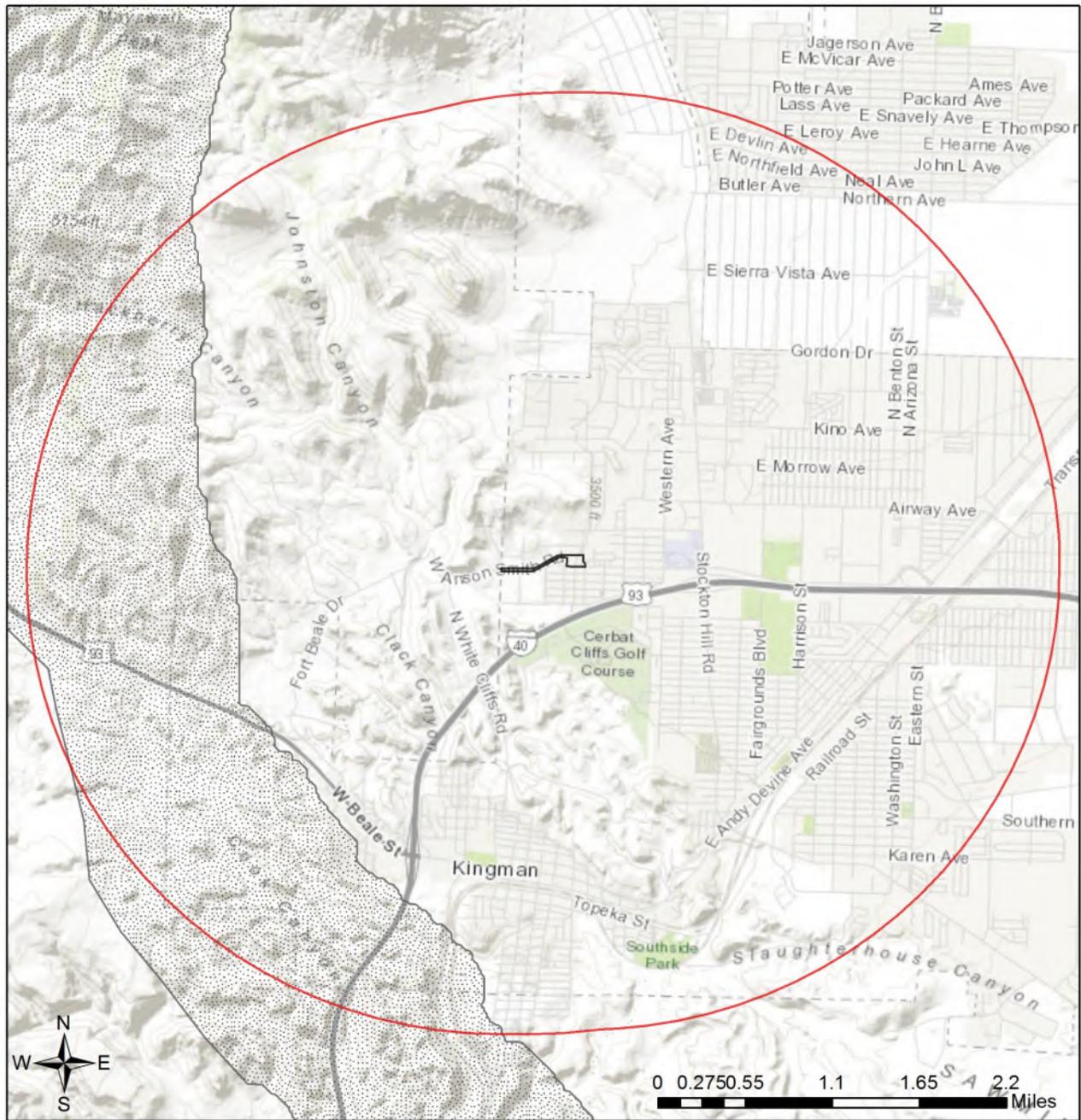
Project ID:

HGIS-10812

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

KADMP - Solution 6.1/6.2

Important Areas



- | | |
|--------------------------------------|--|
| Project Boundary | Wildlife Movement Area - Riparian/Wash |
| Buffered Project Boundary | Wildlife Connectivity |
| County Stakeholder Assessment | |
| Wildlife Crossing Area | Important Connectivity Zones |
| Wildlife Movement Area - Diffuse | Pinal County Riparian |
| Wildlife Movement Area - Landscape | Critical Habitat |
| | Important Bird Areas |

Project Size (acres): 9.76
 Lat/Long (DD): 35.2194 / -114.0512
 County(s): Mohave
 AGFD Region(s): Kingman
 Township/Range(s): T21N, R17W
 USGS Quad(s): KINGMAN

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Astragalus lentiginosus</i> var. <i>ambiguus</i>	Freckled Milk-vetch	SC				
<i>Athene cucularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Heloderma suspectum cinctum</i>	Banded Gila Monster	SC				1A

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/>

No Special Areas Detected

No special areas were detected within the project vicinity.

Species of Greatest Conservation Need Predicted within the Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aix sponsa</i>	Wood Duck					1B
<i>Ammospermophilus harrisi</i>	Harris' Antelope Squirrel					1B
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Athene cucularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Baeolophus ridgwayi</i>	Juniper Titmouse					1C
<i>Botaurus lentiginosus</i>	American Bittern					1B
<i>Calypte costae</i>	Costa's Hummingbird					1C
<i>Castor canadensis</i>	American Beaver					1B
<i>Colaptes chrysoides</i>	Gilded Flicker			S		1B
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC	S	S		1B
<i>Euderma maculatum</i>	Spotted Bat	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC	S	S		1A
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Haliaeetus leucocephalus</i>	Bald Eagle	SC, BGA	S	S		1A
<i>Heloderma suspectum</i>	Gila Monster					1A
<i>Incilius alvarius</i>	Sonoran Desert Toad					1B
<i>Lasiurus blossevillii</i>	Western Red Bat		S			1B
<i>Lithobates pipiens</i>	Northern Leopard Frog		S	S		1A
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC		S		1B
<i>Melanerpes uropygialis</i>	Gila Woodpecker					1B
<i>Melospiza lincolnii</i>	Lincoln's Sparrow					1B
<i>Microtus mexicanus</i>	Mexican Vole					1B
<i>Micruroides euryxanthus</i>	Sonoran Coralsnake					1B

Arizona Environmental Online Review Tool Report



Arizona Game and Fish Department Mission

To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:

KADMP - Solution 6.3/6.4

Project Description:

KADMP - Potential Drainage Solution 6.3/6.4

Project Type:

Water Use, Transfer, and Channel Activities, Water diversion/channelization

Contact Person:

Jean Marie Rieck

Organization:

JE Fuller Hydrology & Geomorphology, Inc.

On Behalf Of:

OTHER

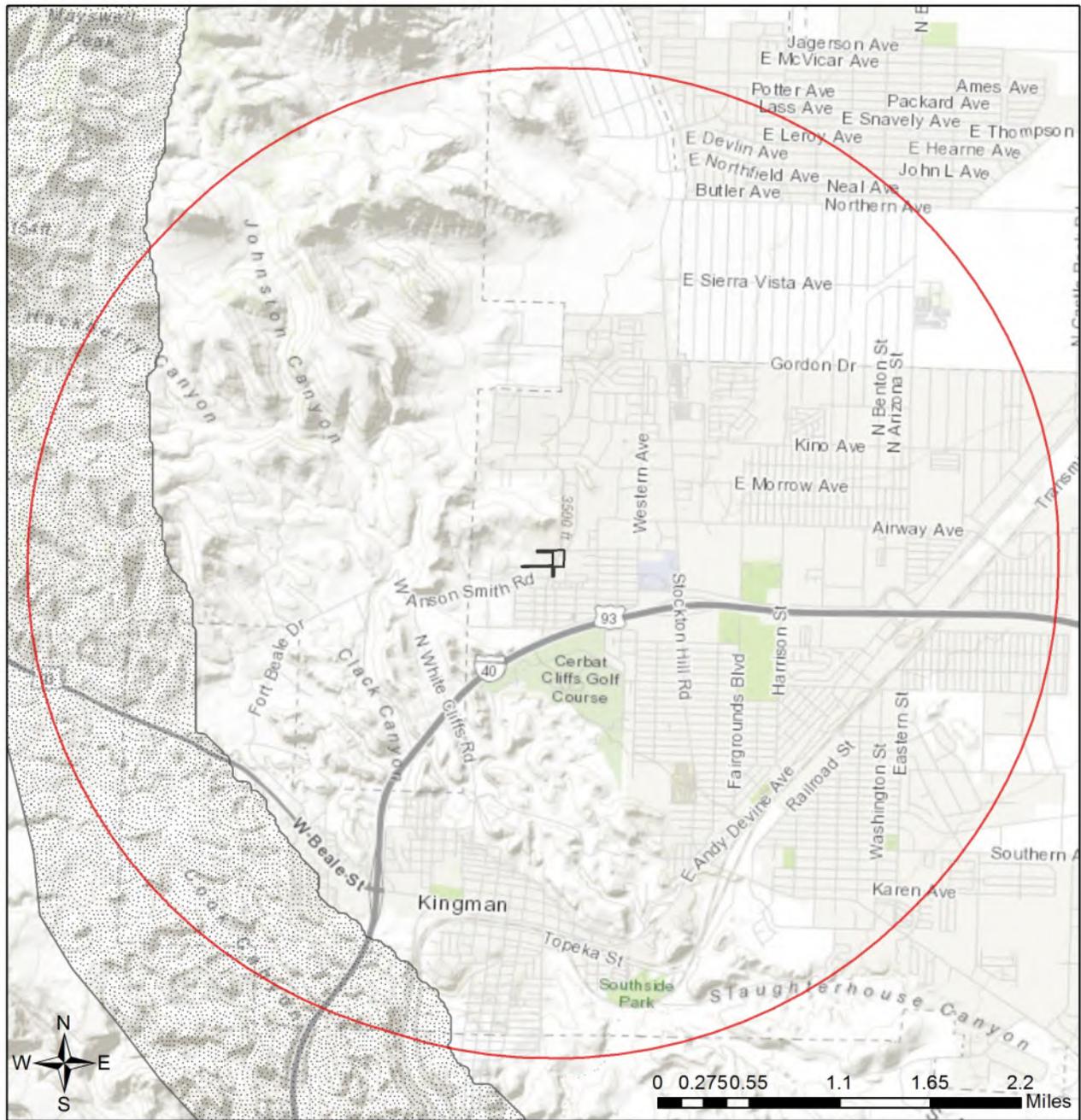
Project ID:

HGIS-10813

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

KADMP - Solution 6.3/6.4

Important Areas



- | | |
|--------------------------------------|--|
| Project Boundary | Wildlife Movement Area - Riparian/Wash |
| Buffered Project Boundary | Wildlife Connectivity |
| County Stakeholder Assessment | |
| Wildlife Crossing Area | Important Connectivity Zones |
| Wildlife Movement Area - Diffuse | Pinal County Riparian |
| Wildlife Movement Area - Landscape | Critical Habitat |
| | Important Bird Areas |

Project Size (acres): 6.55
 Lat/Long (DD): 35.2211 / -114.0492
 County(s): Mohave
 AGFD Region(s): Kingman
 Township/Range(s): T21N, R17W
 USGS Quad(s): KINGMAN

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Astragalus lentiginosus</i> var. <i>ambiguus</i>	Freckled Milk-vetch	SC				
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Heloderma suspectum cinctum</i>	Banded Gila Monster	SC				1A

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/>

No Special Areas Detected

No special areas were detected within the project vicinity.

Species of Greatest Conservation Need Predicted within the Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aix sponsa</i>	Wood Duck					1B
<i>Ammospermophilus harrisi</i>	Harris' Antelope Squirrel					1B
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Baeolophus ridgwayi</i>	Juniper Titmouse					1C
<i>Botaurus lentiginosus</i>	American Bittern					1B
<i>Calypte costae</i>	Costa's Hummingbird					1C
<i>Castor canadensis</i>	American Beaver					1B
<i>Colaptes chrysoides</i>	Gilded Flicker			S		1B
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC	S	S		1B
<i>Euderma maculatum</i>	Spotted Bat	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC	S	S		1A
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Haliaeetus leucocephalus</i>	Bald Eagle	SC, BGA	S	S		1A
<i>Heloderma suspectum</i>	Gila Monster					1A
<i>Incilius alvarius</i>	Sonoran Desert Toad					1B
<i>Lasiurus blossevillii</i>	Western Red Bat		S			1B
<i>Lithobates pipiens</i>	Northern Leopard Frog		S	S		1A
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC		S		1B
<i>Melanerpes uropygialis</i>	Gila Woodpecker					1B
<i>Melospiza lincolnii</i>	Lincoln's Sparrow					1B
<i>Microtus mexicanus</i>	Mexican Vole					1B
<i>Micruroides euryxanthus</i>	Sonoran Coralsnake					1B

Arizona Environmental Online Review Tool Report



Arizona Game and Fish Department Mission

To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:

KADMP - Solution 6.5

Project Description:

KADMP - Potential Drainage Solution 6.5

Project Type:

Water Use, Transfer, and Channel Activities, Water delivery and supply line or effluent delivery line (operated by municipality or water company), New lines or expansion of existing lines

Contact Person:

Jean Marie Rieck

Organization:

JE Fuller Hydrology & Geomorphology, Inc.

On Behalf Of:

OTHER

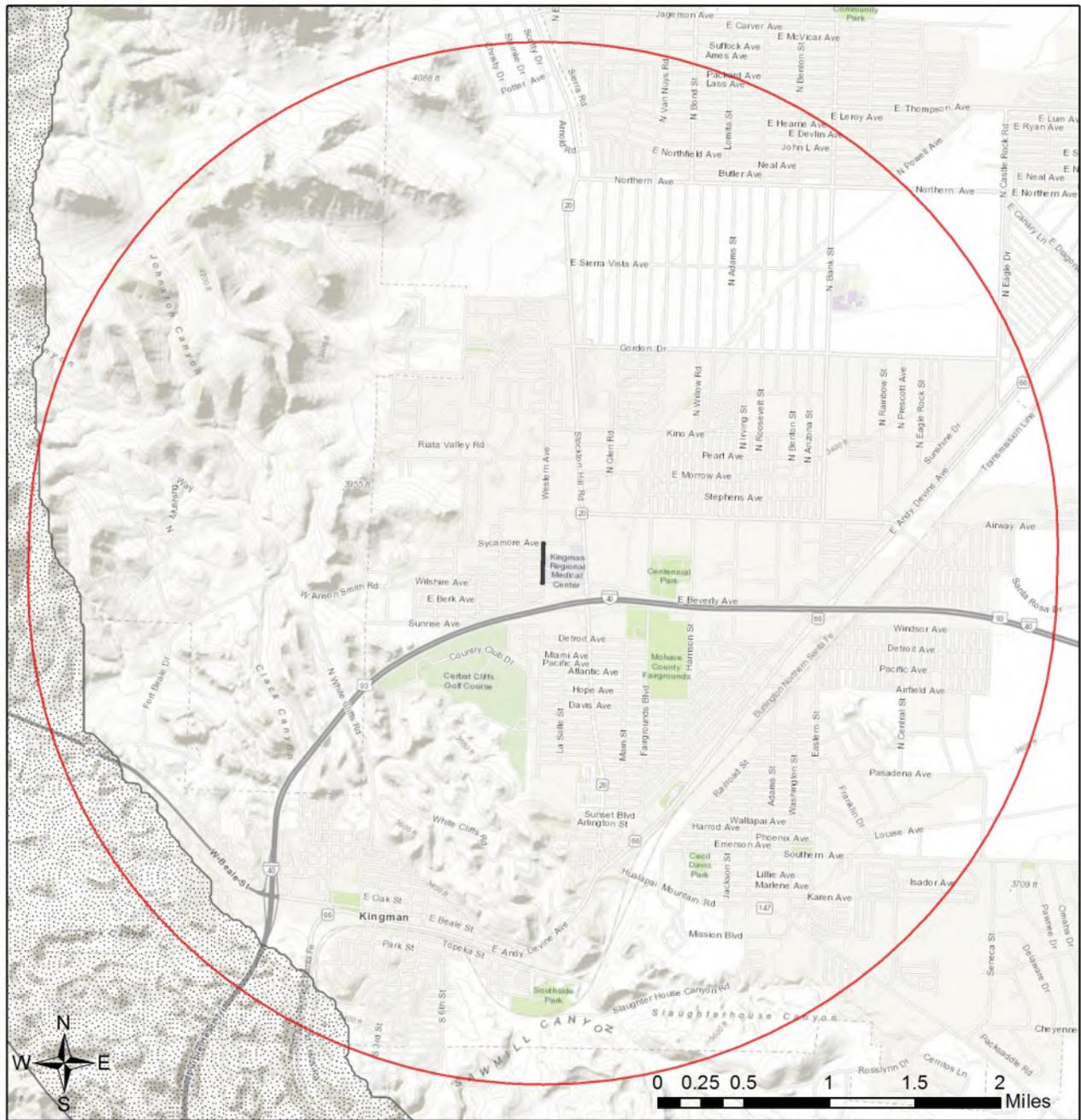
Project ID:

HGIS-10814

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

KADMP - Solution 6.5

Important Areas



- | | |
|--------------------------------------|--|
| Project Boundary | Wildlife Movement Area - Riparian/Wash |
| Buffered Project Boundary | Wildlife Connectivity |
| County Stakeholder Assessment | Important Connectivity Zones |
| Wildlife Crossing Area | Pinal County Riparian |
| Wildlife Movement Area - Diffuse | Critical Habitat |
| Wildlife Movement Area - Landscape | Important Bird Areas |

Project Size (acres): 1.87
 Lat/Long (DD): 35.2205 / -114.0402
 County(s): Mohave
 AGFD Region(s): Kingman
 Township/Range(s): T21N, R16W; T21N, R17W
 USGS Quad(s): KINGMAN

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Astragalus lentiginosus</i> var. <i>ambiguus</i>	Freckled Milk-vetch	SC				
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Heloderma suspectum cinctum</i>	Banded Gila Monster	SC				1A

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/>

No Special Areas Detected

No special areas were detected within the project vicinity.

Species of Greatest Conservation Need Predicted within the Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aix sponsa</i>	Wood Duck					1B
<i>Ammospermophilus harrisi</i>	Harris' Antelope Squirrel					1B
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Baeolophus ridgwayi</i>	Juniper Titmouse					1C
<i>Botaurus lentiginosus</i>	American Bittern					1B
<i>Calypte costae</i>	Costa's Hummingbird					1C
<i>Castor canadensis</i>	American Beaver					1B
<i>Colaptes chrysoides</i>	Gilded Flicker			S		1B
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC	S	S		1B
<i>Euderma maculatum</i>	Spotted Bat	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC	S	S		1A
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Haliaeetus leucocephalus</i>	Bald Eagle	SC, BGA	S	S		1A
<i>Heloderma suspectum</i>	Gila Monster					1A
<i>Incilius alvarius</i>	Sonoran Desert Toad					1B
<i>Lasiurus blossevillii</i>	Western Red Bat		S			1B
<i>Lithobates pipiens</i>	Northern Leopard Frog		S	S		1A
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC		S		1B
<i>Melanerpes uropygialis</i>	Gila Woodpecker					1B
<i>Melospiza lincolnii</i>	Lincoln's Sparrow					1B
<i>Microtus mexicanus</i>	Mexican Vole					1B
<i>Micruroides euryxanthus</i>	Sonoran Coralsnake					1B

Arizona Environmental Online Review Tool Report



Arizona Game and Fish Department Mission

To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:

KADMP - Solution 6.7

Project Description:

KADMP - Potential Drainage Solution 6.7

Project Type:

Water Use, Transfer, and Channel Activities, Detention basin

Contact Person:

Jean Marie Rieck

Organization:

JE Fuller Hydrology & Geomorphology, Inc.

On Behalf Of:

OTHER

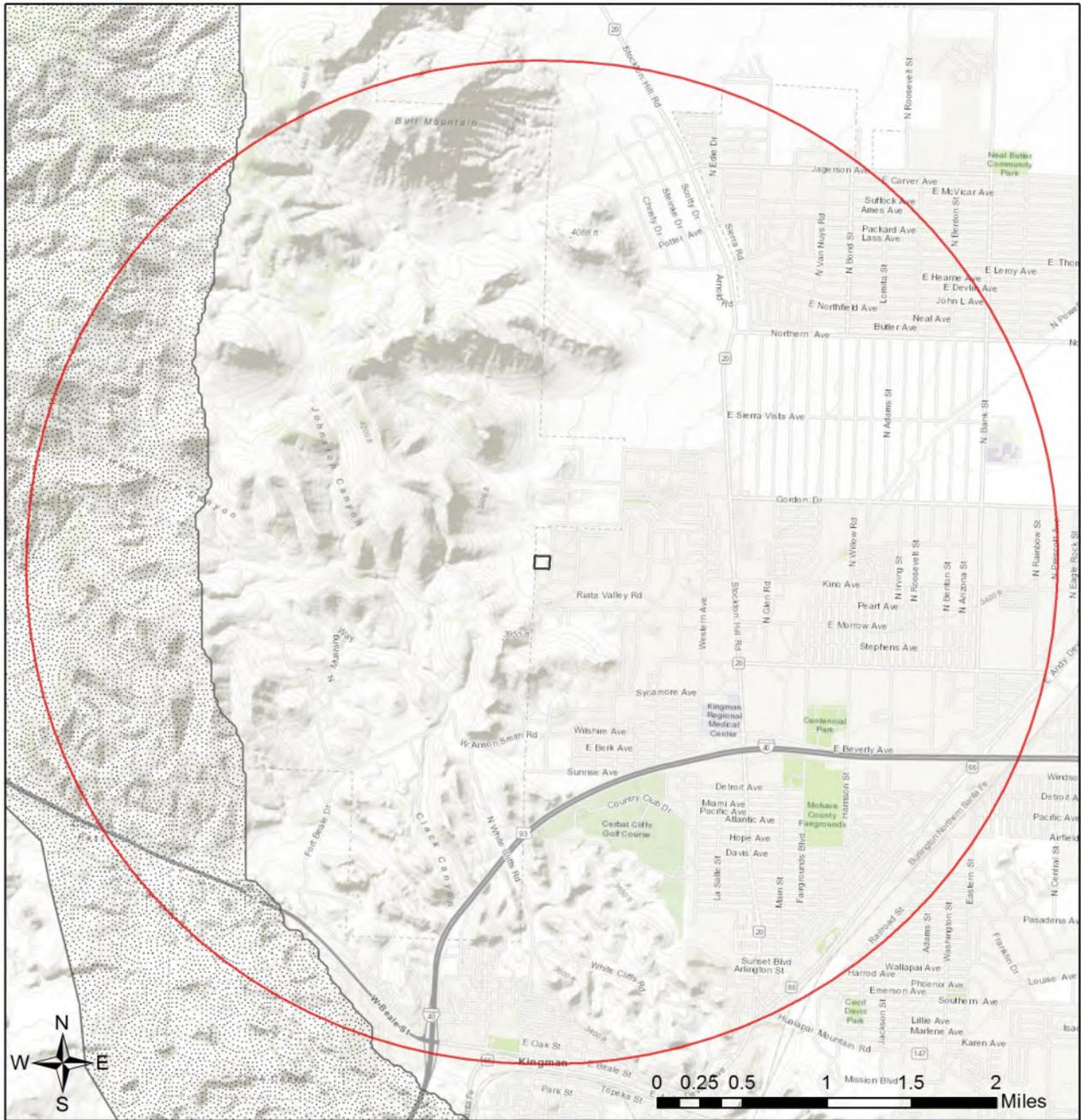
Project ID:

HGIS-10815

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

KADMP - Solution 6.7

Important Areas



- | | |
|--------------------------------------|--|
| Project Boundary | Wildlife Movement Area - Riparian/Wash |
| Buffered Project Boundary | Wildlife Connectivity |
| County Stakeholder Assessment | Important Connectivity Zones |
| Wildlife Crossing Area | Pinal County Riparian |
| Wildlife Movement Area - Diffuse | Critical Habitat |
| Wildlife Movement Area - Landscape | Important Bird Areas |

Project Size (acres): 4.38
 Lat/Long (DD): 35.2332 / -114.0572
 County(s): Mohave
 AGFD Region(s): Kingman
 Township/Range(s): T21N, R17W
 USGS Quad(s): KINGMAN

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Astragalus lentiginosus</i> var. <i>ambiguus</i>	Freckled Milk-vetch	SC				
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Heloderma suspectum cinctum</i>	Banded Gila Monster	SC				1A

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/>

No Special Areas Detected

No special areas were detected within the project vicinity.

Species of Greatest Conservation Need Predicted within the Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aix sponsa</i>	Wood Duck					1B
<i>Ammospermophilus harrisi</i>	Harris' Antelope Squirrel					1B
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Aspidoscelis flagellicauda</i>	Gila Spotted Whiptail					1B
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Baeolophus ridgwayi</i>	Juniper Titmouse					1C
<i>Calypte costae</i>	Costa's Hummingbird					1C
<i>Castor canadensis</i>	American Beaver					1B
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC	S	S		1B
<i>Crotalus cerberus</i>	Arizona Black Rattlesnake					1B
<i>Empidonax wrightii</i>	Gray Flycatcher					1C
<i>Euderma maculatum</i>	Spotted Bat	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC	S	S		1A
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Haliaeetus leucocephalus</i>	Bald Eagle	SC, BGA	S	S		1A
<i>Heloderma suspectum</i>	Gila Monster					1A
<i>Lithobates pipiens</i>	Northern Leopard Frog		S	S		1A
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC		S		1B
<i>Melanerpes uropygialis</i>	Gila Woodpecker					1B
<i>Melospiza lincolni</i>	Lincoln's Sparrow					1B
<i>Microtus mexicanus</i>	Mexican Vole					1B
<i>Micruroides euryxanthus</i>	Sonoran Coralsnake					1B
<i>Myotis occultus</i>	Arizona Myotis	SC		S		1B
<i>Myotis velifer</i>	Cave Myotis	SC		S		1B

Arizona Environmental Online Review Tool Report



Arizona Game and Fish Department Mission

To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:

KADMP - Solution 6.8

Project Description:

KADMP - Potential Drainage Solution 6.8

Project Type:

Water Use, Transfer, and Channel Activities, Water diversion/channelization

Contact Person:

Jean Marie Rieck

Organization:

JE Fuller Hydrology & Geomorphology, Inc.

On Behalf Of:

OTHER

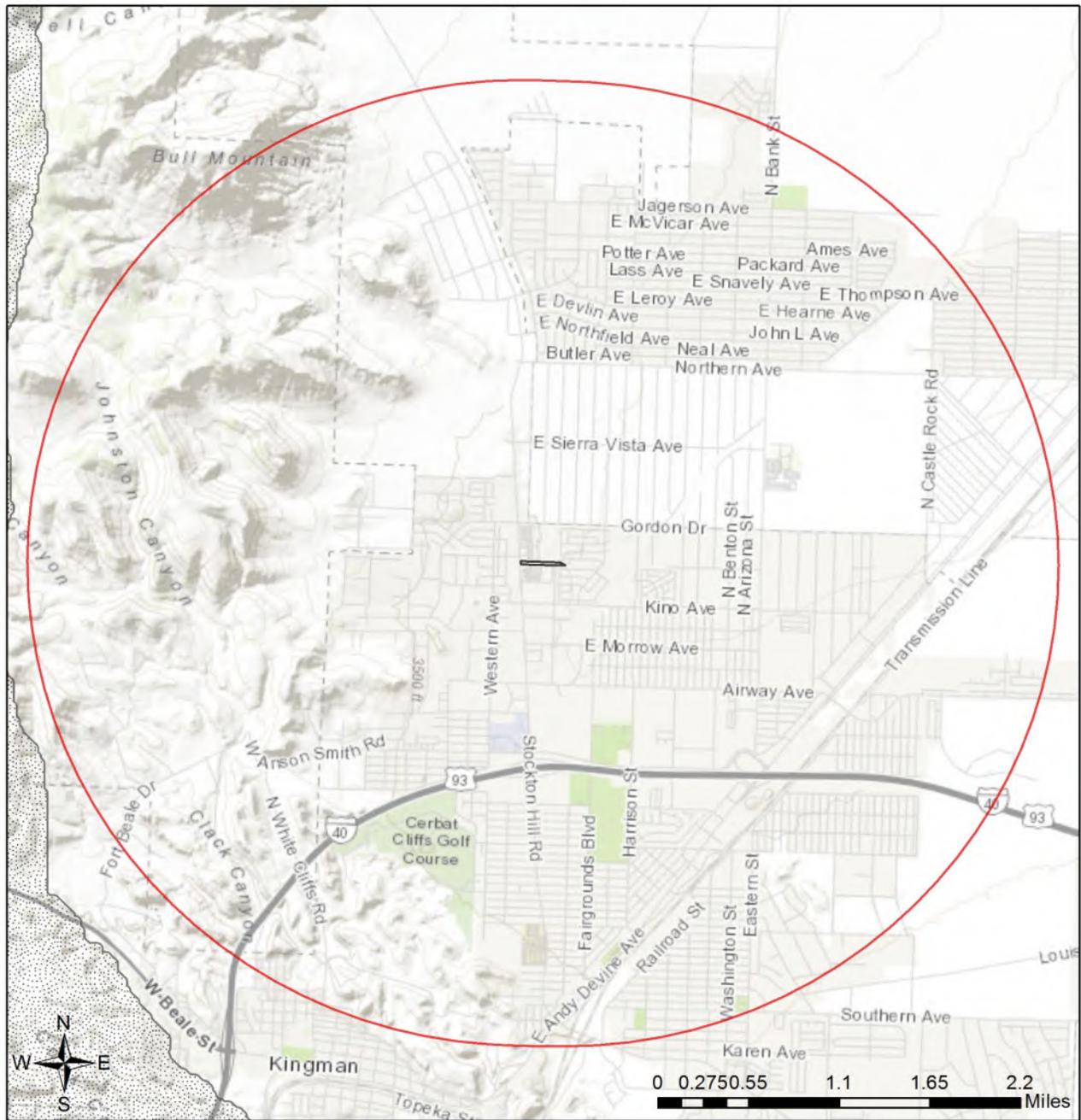
Project ID:

HGIS-10816

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

KADMP - Solution 6.8

Important Areas



- | | |
|--------------------------------------|--|
| Project Boundary | Wildlife Movement Area - Riparian/Wash |
| Buffered Project Boundary | Wildlife Connectivity |
| County Stakeholder Assessment | |
| Wildlife Crossing Area | Important Connectivity Zones |
| Wildlife Movement Area - Diffuse | Pinal County Riparian |
| Wildlife Movement Area - Landscape | Critical Habitat |
| | Important Bird Areas |

Project Size (acres): 3.07
 Lat/Long (DD): 35.2358 / -114.0351
 County(s): Mohave
 AGFD Region(s): Kingman
 Township/Range(s): T21N, R16W
 USGS Quad(s): KINGMAN

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Astragalus lentiginosus</i> var. <i>ambiguus</i>	Freckled Milk-vetch	SC				
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Heloderma suspectum cinctum</i>	Banded Gila Monster	SC				1A

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/>

No Special Areas Detected

No special areas were detected within the project vicinity.

Species of Greatest Conservation Need Predicted within the Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aix sponsa</i>	Wood Duck					1B
<i>Ammospermophilus harrisi</i>	Harris' Antelope Squirrel					1B
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Aspidoscelis flagellicauda</i>	Gila Spotted Whiptail					1B
<i>Athene cucularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Baeolophus ridgwayi</i>	Juniper Titmouse					1C
<i>Botaurus lentiginosus</i>	American Bittern					1B
<i>Buteo swainsoni</i>	Swainson's Hawk					1C
<i>Calypte costae</i>	Costa's Hummingbird					1C
<i>Castor canadensis</i>	American Beaver					1B
<i>Colaptes chrysoides</i>	Gilded Flicker			S		1B
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC	S	S		1B
<i>Crotalus cerberus</i>	Arizona Black Rattlesnake					1B
<i>Empidonax wrightii</i>	Gray Flycatcher					1C
<i>Euderma maculatum</i>	Spotted Bat	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC	S	S		1A
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Haliaeetus leucocephalus</i>	Bald Eagle	SC, BGA	S	S		1A
<i>Heloderma suspectum</i>	Gila Monster					1A
<i>Lasiurus blossevillii</i>	Western Red Bat		S			1B
<i>Lithobates pipiens</i>	Northern Leopard Frog		S	S		1A
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC		S		1B
<i>Melanerpes uropygialis</i>	Gila Woodpecker					1B
<i>Melospiza lincolni</i>	Lincoln's Sparrow					1B

Arizona Environmental Online Review Tool Report



Arizona Game and Fish Department Mission

To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:

KADMP - Solution 7.2

Project Description:

KADMP - Potential Drainage Solution 7.2

Project Type:

Water Use, Transfer, and Channel Activities, Water diversion/channelization

Contact Person:

Jean Marie Rieck

Organization:

JE Fuller Hydrology & Geomorphology, Inc.

On Behalf Of:

OTHER

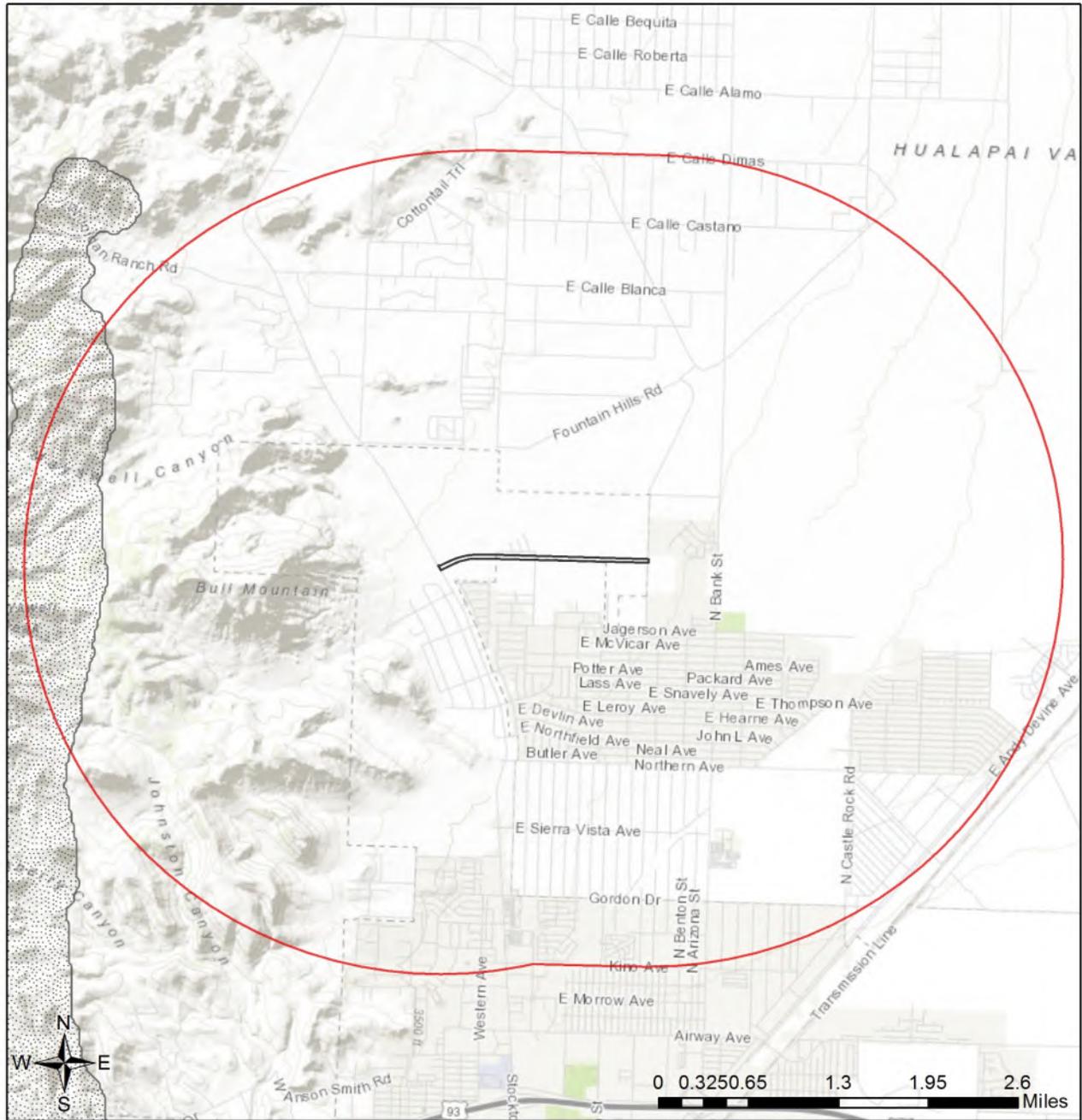
Project ID:

HGIS-10817

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

KADMP - Solution 7.2

Important Areas



- | | |
|--------------------------------------|--|
| Project Boundary | Wildlife Movement Area - Riparian/Wash |
| Buffered Project Boundary | Wildlife Connectivity |
| County Stakeholder Assessment | Important Connectivity Zones |
| Wildlife Crossing Area | Pinal County Riparian |
| Wildlife Movement Area - Diffuse | Critical Habitat |
| Wildlife Movement Area - Landscape | Important Bird Areas |

Project Size (acres): 29.14
 Lat/Long (DD): 35.2757 / -114.0343
 County(s): Mohave
 AGFD Region(s): Kingman
 Township/Range(s): T22N, R16W; T22N, R17W
 USGS Quad(s): STOCKTON HILL

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Heloderma suspectum cinctum</i>	Banded Gila Monster	SC				1A

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/>

No Special Areas Detected

No special areas were detected within the project vicinity.

Species of Greatest Conservation Need Predicted within the Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aix sponsa</i>	Wood Duck					1B
<i>Ammospermophilus harrisi</i>	Harris' Antelope Squirrel					1B
<i>Antilocapra americana americana</i>	American Pronghorn					1B
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Aspidoscelis flagellicauda</i>	Gila Spotted Whiptail					1B
<i>Athene cucularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Baeolophus ridgwayi</i>	Juniper Titmouse					1C
<i>Buteo swainsoni</i>	Swainson's Hawk					1C
<i>Calypte costae</i>	Costa's Hummingbird					1C
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC	S	S		1B
<i>Crotalus cerberus</i>	Arizona Black Rattlesnake					1B
<i>Euderma maculatum</i>	Spotted Bat	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC	S	S		1A
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Heloderma suspectum</i>	Gila Monster					1A
<i>Lithobates pipiens</i>	Northern Leopard Frog		S	S		1A
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC		S		1B
<i>Melanerpes uropygialis</i>	Gila Woodpecker					1B
<i>Melospiza lincolni</i>	Lincoln's Sparrow					1B
<i>Microtus mexicanus</i>	Mexican Vole					1B
<i>Micruroides euryxanthus</i>	Sonoran Coralsnake					1B
<i>Myotis occultus</i>	Arizona Myotis	SC		S		1B
<i>Myotis velifer</i>	Cave Myotis	SC		S		1B
<i>Myotis yumanensis</i>	Yuma Myotis	SC				1B
<i>Oreoscoptes montanus</i>	Sage Thrasher					1C
<i>Oreothlypis luciae</i>	Lucy's Warbler					1C
<i>Sphyrapicus nuchalis</i>	Red-naped Sapsucker					1C
<i>Spizella atrogularis</i>	Black-chinned Sparrow					1C

Arizona Environmental Online Review Tool Report



Arizona Game and Fish Department Mission

To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:

KADMP - Solution 7.6

Project Description:

KADMP - Potential Drainage Solution 7.6

Project Type:

Water Use, Transfer, and Channel Activities, Water diversion/channelization

Contact Person:

Jean Marie Rieck

Organization:

JE Fuller Hydrology & Geomorphology, Inc.

On Behalf Of:

OTHER

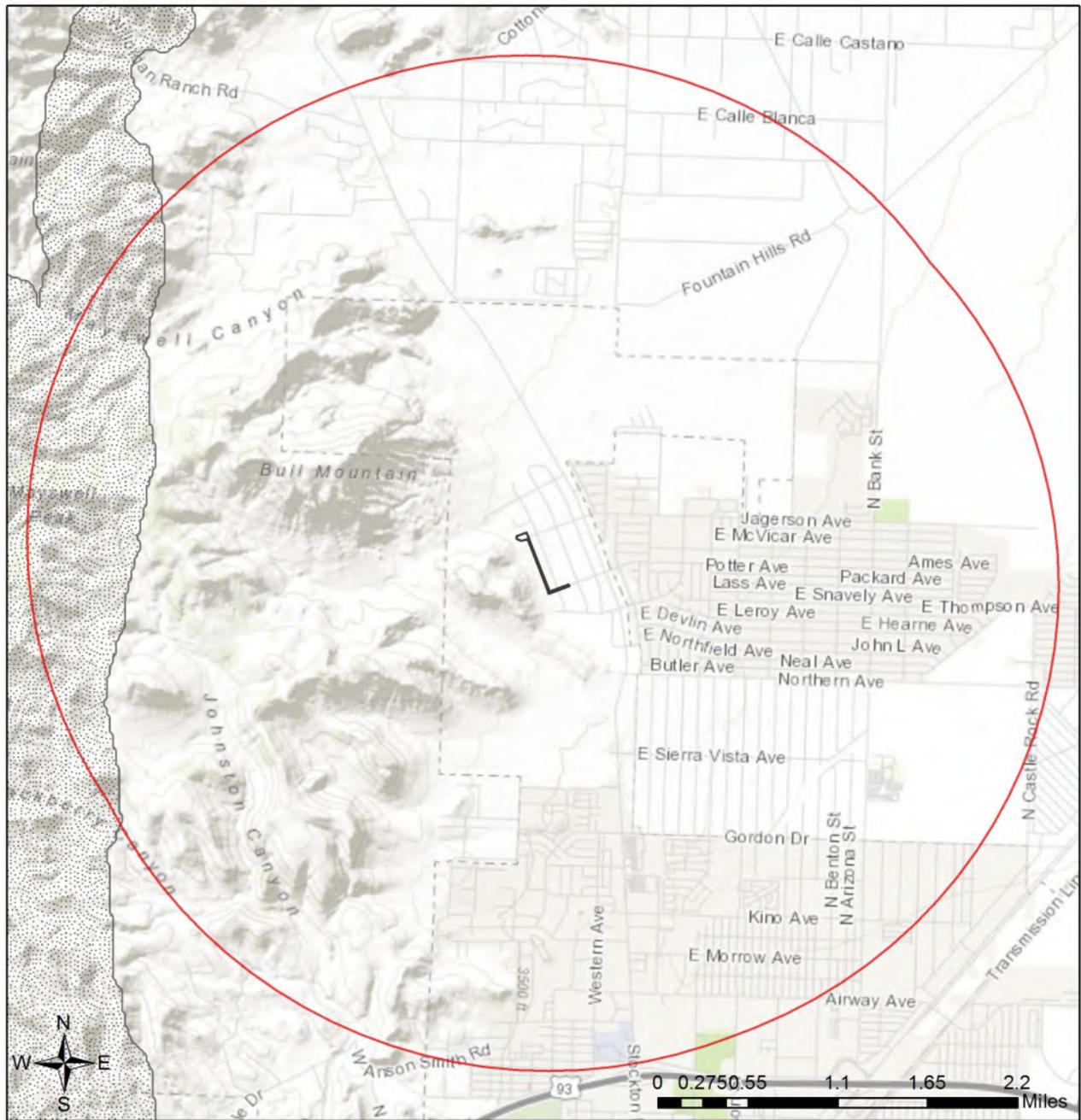
Project ID:

HGIS-10818

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

KADMP - Solution 7.6

Important Areas



- | | |
|--------------------------------------|--|
| Project Boundary | Wildlife Movement Area - Riparian/Wash |
| Buffered Project Boundary | Wildlife Connectivity |
| County Stakeholder Assessment | |
| Wildlife Crossing Area | Important Connectivity Zones |
| Wildlife Movement Area - Diffuse | Pinal County Riparian |
| Wildlife Movement Area - Landscape | Critical Habitat |
| | Important Bird Areas |

Project Size (acres): 4.42
 Lat/Long (DD): 35.2627 / -114.0473
 County(s): Mohave
 AGFD Region(s): Kingman
 Township/Range(s): T22N, R17W
 USGS Quad(s): STOCKTON HILL

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Heloderma suspectum cinctum</i>	Banded Gila Monster	SC				1A

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/>

No Special Areas Detected

No special areas were detected within the project vicinity.

Species of Greatest Conservation Need Predicted within the Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Aix sponsa</i>	Wood Duck					1B
<i>Ammospermophilus harrisi</i>	Harris' Antelope Squirrel					1B
<i>Aquila chrysaetos</i>	Golden Eagle	BGA		S		1B
<i>Aspidoscelis flagellicauda</i>	Gila Spotted Whiptail					1B
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC	S	S		1B
<i>Baeolophus ridgwayi</i>	Juniper Titmouse					1C
<i>Calypte costae</i>	Costa's Hummingbird					1C
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC	S	S		1B
<i>Crotalus cerberus</i>	Arizona Black Rattlesnake					1B
<i>Euderma maculatum</i>	Spotted Bat	SC	S	S		1B
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC		S		1B
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC	S	S		1A
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1A
<i>Heloderma suspectum</i>	Gila Monster					1A
<i>Lithobates pipiens</i>	Northern Leopard Frog		S	S		1A
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC		S		1B
<i>Melanerpes uropygialis</i>	Gila Woodpecker					1B
<i>Melospiza lincolni</i>	Lincoln's Sparrow					1B
<i>Microtus mexicanus</i>	Mexican Vole					1B
<i>Micruroides euryxanthus</i>	Sonoran Coralsnake					1B
<i>Myotis occultus</i>	Arizona Myotis	SC		S		1B
<i>Myotis velifer</i>	Cave Myotis	SC		S		1B
<i>Myotis yumanensis</i>	Yuma Myotis	SC				1B
<i>Oreoscoptes montanus</i>	Sage Thrasher					1C
<i>Oreothlypis luciae</i>	Lucy's Warbler					1C
<i>Sphyrapicus nuchalis</i>	Red-naped Sapsucker					1C
<i>Spizella atrogularis</i>	Black-chinned Sparrow					1C
<i>Spizella breweri</i>	Brewer's Sparrow					1C
<i>Tadarida brasiliensis</i>	Brazilian Free-tailed Bat					1B

PRELIMINARY RECORDS REVIEW FOR THE KINGMAN AREA DRAINAGE PLAN,
MOHAVE COUNTY, ARIZONA

Prepared for

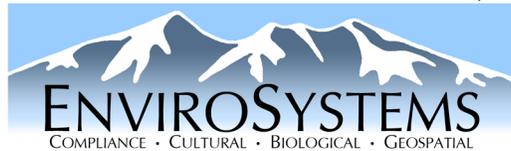
J.E. FULLER HYDROLOGY AND GEOMORPHOLOGY, INC.
323 N. San Francisco Street, Suite 100
Flagstaff, Arizona 86001
(928) 699-4409

Prepared by

Blayne R. Brown

Joshua Whiting, RPA/M.A., Technical Editor
Travis Ellison, Mapping/Graphics

ENVIROSYSTEMS MANAGEMENT, INC.



23 East Fine Avenue
Flagstaff, Arizona 86001
(928) 226-0236
www.esmaz.com

EnviroSystems Management Project and Report No. 2049-20 (Preliminary Records Review)

April 9, 2020

On behalf of J. E. Fuller, EnviroSystems Management, Inc. (EnviroSystems or ESM) conducted a preliminary cultural resources archival review for the Kingman Area Drainage Plan, Mohave County, Arizona. Between April 2 and April 6, 2020, EnviroSystems Archaeologists Travis Ellison and Blayne R. Brown conducted records searches via AZSITE, the online database for archaeological project and site records maintained by the Arizona State Museum (ASM).

The records review looked areas surrounding 18 locations:

- Stockton Hill Avenue/High School Stormdrain (1.4)
- Detention Upstream of 8th Street (1.8)
- 4th Avenue Basin (1.11)
- Main Street Stormdrain Extension (2.3)
- Fairgrounds Boulevard Stormdrain (2.4)
- Harrod Avenue Basin Upgrades (3.1)
- I-40 Regional Retention Basin 1 (3.7)
- I-40 Regional Retention Basin 2 (3.7)
- I-40 Regional Retention Basin 3 (3.7)
- I-40 Regional Retention Basin 4 (3.7)
- Pinal Street Basin (5.1)
- Anson Smith Road Collector Channel and Basin (6.1/6.2)
- Harvard Street Improvements and Basin (6.3/6.4)
- Western Avenue Stormdrain (6.5)
- Vista Basin (6.7)
- Lower Crestwood Channel (6.8)
- Grace Neal Channel (7.2)
- Shane Channel (7.6)

The AZSITE database yielded 53 previous surveys conducted within 1 mile of the project areas (*Table 1; Figure 1*). These projects were conducted between 1988 and 2017 and are primarily associated with development and infrastructure. Two sites are not in AZSITE; these were identified from “advanced sites” (in-progress sites). Project 1999-280.ASM runs past the extreme west end of the Grace Neal Channel (Location 7.2). Project 2007-417.ASM run immediately north of the Interstate 40 Regional Retention Basins (Location 3.7) and projects 1988-30.ASM, 1998-338.ASM, 1999-307.ASM, 2006-285.ASM, and 2013-551.ASM are located immediately to the south; none of these projects, however, occur within the unit. Projects 1996-313.ASM, 1999-196.ASM, 1999-465.ASM, 2000-662.ASM, 2001-545.ASM, 2001-547.ASM, 2003-23.ASM, and 2009-51.ASM are all immediately north of the Fairgrounds Boulevard Stormdrain (Location 2.4) but also do not occur within the unit. Project 1993-209.ASM runs across the extreme south end of the Stockton Hill Avenue/High School Stormdrain (Location 1.4) and occurs immediately north of, but not within, the Detention Upstream of 8th Street (Location 1.8). The remaining locations do not have any associated previous projects.

The previous projects depicted in AZSITE have resulted in 62 previously recorded sites, an additional 63 historic structures, and one historic district (*Table 2; Figure 2*). These include 14 “advanced sites” and eight SHPO Mohave County Sites. With the exception of AZ F:12:7(BLM) and many of the County Sites, the remaining sites have all been assigned ASM numbers. Two of

the County Sites are also associated with AZ F:16:18(ASM) and AZ F:12:22(ASM) (Northern Avenue Petroglyph Site and Hubbs Residence, respectively). Advanced sites in AZSITE are sites recorded during projects that are still in progress and have not been completely entered into the online data. These sites have limited associated information and the site plots are provisional. The majority of the Advanced Sites were recorded by Logan Simpson Design (LSD) in 2012 and are located to the northwest of downtown Kingman. Two Advanced Sites were recorded by AECOM Engineering in 2017 and are located east of town and south of Interstate 40. Neither of these projects are depicted in AZSITE but were added to the previous projects table (Table 1). Another 63 historic structures shown in AZSite are not associated with ASM, BLM, or SHPO site numbers in AZSite (Table 3). Of these, six occur in close proximity to the Stockton Hill Avenue/High School Stormdrain (1.4) (Figure 3); the remainder of these structures have currently not been plotted on Figures 2 or 3. Finally, the Kingman Commercial Historic District includes 4.5 acres along the 300 and 400 blocks of Andy Devine Avenue, located downtown east of the Stockton Hill Avenue/High School Stormdrain (1.4).

Overall, the sites are dominated by historic trash dumps and scatters, primarily located around the periphery of Kingman, followed by a few historic structures and roads. Prehistoric sites are few and consist of a village site (NA3387), 2 temporary camps (AZ F:12:7[BLM] and AZ F:16:2[ASM]), and 2 ceramic scatters (NA3358 and NA3378). The majority of these sites are not eligible to the National Register of Historic Places (National Register or NRHP), or they are unevaluated or there is no data. Only four sites are recommended eligible to the National Register. These include a Cerbat temporary camp (AZ F:12:7[BLM]), an extensive historic trash scatter (AZ F:16:99[ASM]), the Beale Wagon Road (AZ I:14:5[ASM]), and historic US Route 93 (AZ U:3:248[ASM]). Historic Route 66 (AZ I:15:156[ASM]) is determined eligible to the NRHP and seven sites identified in AZSITE are listed on the National Register. The six historic structures near the Stockton Hill Avenue/High School Stormdrain (1.4) are also on the National Register. None of the previously recorded sites occur within the proposed Kingman Area Drainages project locations; however, historic Route 66, runs immediately north of the Detention Upstream of 8th Street (Location 1.8) and, of course, six structures occur near survey area 1.4.

Sites identified in AZSITE as listed on the National Register include six historic buildings and a petroglyph site listed as SHPO County Sites, and an addition six historic structures not assigned site numbers in AZSite. Therefore, Mr. Brown checked the National Archives Catalog on April 6 and April 7, 2020 to review these properties. In addition to the National Register-listed sites identified in AZSITE, another 63 properties are on the National Register in the City of Kingman. Many of these sites are located downtown and/or within the 1-mile study area and may be among the historic structures in AZSite that were not added to the previously recorded sites table (see Table 3).

In addition, several General Land Office (GLO) plat maps were examined on April 6, 2020 by Mr. Brown. The GLO map filed December 16, 1912 for Township 21 North, Range 16 West (Figure 4) depicts the "Atchison Topeka, & Santa Fe R.R." (ATSF) passing through the 1-mile study area. The ATSF railroad is still in use as the Burlington Northern and Santa Fe (BNSF). A few associated roads on the map may also still be present. The railroad is again depicted on the GLO map for Township 22 North, Range 16 West (Figure 5); however, it is well outside of the study area. Several roads depicted on the map may still be present within the study area. GLO maps for

Township 22 North, Range 17 West were filed on August 6, 1874 (*Figure 6*) and May 21, 1957 (*Figure 7*). These maps both depict the “Road from Stockton” which is now currently in use as Stockton Hill Road. Only the west half of Township 21 North, Range 17 West is depicted on the GLO filed August 14, 1919 (*Figure 8*). The western portion of the GLO is outside the study area. The eastern portion of the GLO that would occur within the study area and includes downtown Kingman has not been mapped.

In sum, no surveys have occurred within any of the proposed locations. Therefore, all project locations would require a Class III cultural resources inventory prior to any ground disturbing activities. Most of the sites are found in larger block surveys around the periphery of Kingman; therefore, EnviroSystems would not expect an abundance of sites within the proposed locations. However, sites are possible and would mostly likely be historic in nature. Project areas located near historic downtown Kingman may have in-use historic structures present near or immediately adjacent to them.

Table 1. Previous Archaeological Investigations within 1 Mile of the Kingman Area Drainage Master Plan

Project No.*	Project Name	Organization**
1988-30.ASM	State Land Survey	ASM
1989-98.ASM	HNC - Kingman	ARS
1988-153.ASM	Bank St. - Airway Ave. Intersection Survey, Kingman	PMDR
1989-169.ASM	AT&T Flagstaff to Las Vegas Fiber	D&M
1991-4.ASM	Route 93 Relocation Study	SRI
1993-209.ASM	KINGMAN SIDEWALKS	ARS
1994-4.ASM	KINGMAN: US93 REALIGNMENT	ACS
1994-388.ASM	Old 66 South of Kingman (Holy Moses Wash Bridge)	PMDR
1995-94.ASM	Kingman: Bank St. Overhead Powerline Extension	ACS
1996-196.ASM	Kingman Maintenance Shop	ARS
1996-313.ASM	Interstate 40 - Stockton Hill Road Interchange	ARS
1997-19.ASM	I-40 West Kingman TI, at US 93	PMDR
1998-229.ASM	Hualapai Mountain Bike Path	PMDR
1998-248.ASM	ADOT - Kingman I	SCI
1998-338.ASM	Rancho Santa Fe	RCI
1999-138.ASM	East Kingman TI	LSD
1999-176.ASM	SR 66 in Kingman	ACS
1999-196.ASM	Stockton Hill Road Kingman TI	LSD
1999-280.ASM	Two Parcels Near Kingman	PMDR
1999-307.ASM	Disposal D-3-128	EcoPlan
1999-465.ASM	Beverly Ave., Kingman	LSD
1999-534.ASM	SR 66 Survey, Kingman Maintenance District	PMDR
2000-406.ASM	SBA Inc. Flagstaff Build (Mohave Co.)	ALC
2000-662.ASM	I-40, Mohave Wash Pathway	HDR
2001-545.ASM	I-40, Mohave Wash	EcoPlan
2001-547.ASM	I-40, Beverly	EcoPlan
2001-759.ASM	Mohave Wash Survey	SWCA
2003-23.ASM	Kingman Multi-Use Pathway Survey	EcoPlan
2003-1107.ASM	SR 95 Lake Havasu City	LSD
2006-285.ASM	Kingman 640	URS
2006-586.ASM	Sundance Canyon Kingman	LSD
2007-417.ASM	Kingman Crossing TI	EcoPlan

Project No.*	Project Name	Organization**
2007-652.ASM	Three Development Sites	Aztec
2008-67.ASM	MoCo ASLD Arch Survey	SWCA
2008-68.ASM	MoCo Bank Street Survey	SWCA
2008-170.ASM	Horizon Bank Survey	FCR
2008-208.ASM	North Bank Street Survey	EPG
2008-223.ASM	Johnson Spring Canyon Fence	SWCA
2009-51.ASM	I-40; Holy Moses Wash to Rattlesnake Wash	Aztec
2009-236.ASM	Kingman Downtown WWTP	BC
2009-487.ASM	Bull Mountain Drainage Improvements Survey	TRS
2009-703.ASM	Northern Avenue	HDR
2010-264.ASM	Johnson Wash Bridge	LSD
2010-536.ASM	Jagerson Avenue Improvements	SWCA
2010-566.ASM	Gordon Drive Widening Reconstruction	LSD
2011-181.ASM	Eastern Pathway	ACS
2011-389.ASM	Bank Street Widening Northern to Jagerson	SWCA
2012-345.ASM	I-40/US 93 West Kingman TI	LSD
2013-551.ASM	Section 16 ROW Corridor East of Kingman Inventory	ESM
2017-534.ASM	Kingman Crossing Blvd: Southern Ave to Airfield Ave	AECOM
2-1-92-2.BLM	Transwestern Pipeline	BLM-KFO
SHPO-2000-3108	ASLD Application 16-106141 - Mohave County - ASLD Considering Application for a New, Perpetual ROW Acquisition	Unknown
SHPO-2001-1656	Review of Cingular Wireless Facility LV 323-01 - at 1000 Radar Hill, Kingman	Unknown

* Project numbers include: ASM = Arizona State Museum; BLM = Bureau of Land Management; SHPO = Arizona State Historic Preservation Office.

**ACS = Archaeological Consulting Services, Ltd.; AECOM = AECOM Engineering; ARS = Archaeological Research Services, Ltd.; ALC = Andrew L. Christenson; ASM = Arizona State Museum; Aztec = Aztec Archaeological Consultants, LLC; BC = Brown and Caldwell; BLM-KFO = Bureau of Land Management – Kingman Field Office; EcoPlan = EcoPlan Associates, Inc.; EPG = Environmental Planning Group, LLC.; ESM = EnviroSystems Management, Inc.; FCR = Four Corners Research, Inc.; HDR = HDR Engineering, Inc.; LSD = Logan Simpson Design, Inc.; DAMES = Dames & Moore Intermountain Cultural Resource Services; PMDR = Plateau Mountain Desert Research; RCI = Rincon Consultants, Inc.; SRI = Statistical Research, Inc.; SCI = Stantec Consulting, Inc.; SWCA = SWCA Environmental Consultants; TRS = Tierra Right-of-Way Services, Ltd.; URS = URS Corporation.

Table 2. Previously Recorded Sites within 1 Mile of the Kingman Area Drainage Master Plan

Site Number [†]	Site Type	Cultural Affiliation & Date	NRHP Eligibility Recommendation
Sites listed in AZSITE			
AZ F:12:7(BLM)	Temporary Camp	Cerbat A.D. 1100–1600	Eligible
AZ F:16:2(ASM)	Atlantic Spring Temporary Camp	Unknown Prehistoric	Unevaluated
AZ F:16:6(ASM)	Kingman Public Library	Euroamerican No Data	Unevaluated
AZ F:16:12(ASM)	Bonelli House	Euroamerican No Data	National Register Listed NARA Ref 75000352 4/24/1975
AZ F:16:14(ASM)	Rockshelter	Cerbat/Pai A.D. 1200–1450	Unevaluated
AZ F:16:27(ASM)	Foundations & Trash Dumps	Euroamerican Depression Era	Unevaluated
AZ F:16:28(ASM)	Trash Dump	Euroamerican Depression Era	Unevaluated
AZ F:16:30(ASM)	Trash Scatter	Euroamerican No Data	Unevaluated
AZ F:16:88(ASM)	Rock Clusters, Pits, Checkdams, & Trash Scatter	Euroamerican ca. 1880–post 1972	Not Eligible
AZ F:16:98(ASM)	Prospect Pit	Euroamerican Unknown Historic	Not Eligible
AZ F:16:99(ASM)	Trash Scatter	Euroamerican 1880s–1940s	Eligible
AZ F:16:102(ASM)	Cemetery	Euroamerican No Data	Unevaluated
AZ G:13:26(ASM)	Trash Scatter	Euroamerican ca. 1940/1953–1968	Not Eligible
AZ G:13:27(ASM)	Trash Scatter	Euroamerican 1937–1948	Not Eligible
AZ G:13:28(ASM)	Trash Dump	Euroamerican ca. 1930	Not Eligible
AZ G:13:29(ASM)	Trash Dump	Euroamerican late 1940s/early 1950s	Not Eligible
AZ G:13:30(ASM)	Trash Dump	Euroamerican 1915–1930s	Not Eligible
AZ G:13:31(ASM)	Trash Dump	Euroamerican 1950s	Not Eligible
AZ G:13:32(ASM)	Trash Dump	Euroamerican 1915–1920s	Not Eligible
AZ G:13:33(ASM)	Trash Dumps	Euroamerican 1915–1940s	Not Eligible
AZ G:13:34(ASM)	Trash Dump	Euroamerican mid-1950s	Not Eligible
AZ G:13:35(ASM)	Trash Scatter	Euroamerican 1940s	Not Eligible
AZ G:13:36(ASM)	Trash Scatter	Euroamerican 1940s–1960s	Not Eligible
AZ G:13:37(ASM)	Trash Dump	Euroamerican 1940s–1960s	Not Eligible

Site Number [†]	Site Type	Cultural Affiliation & Date	NRHP Eligibility Recommendation
AZ G:13:39(ASM)	Trash Scatter	Euroamerican 1915–1920s	Not Eligible
AZ G:13:40(ASM)	Trash Scatter	Euroamerican 1915–1930s	Not Eligible
AZ G:13:41(ASM)	Trash Dump	Euroamerican 1955–1960s	Not Eligible
AZ G:13:42(ASM)	Trash Scatter	Euroamerican 1935–1940s	Not Eligible
AZ G:13:43(ASM)	Trash Scatter	Euroamerican post-1935	Not Eligible
AZ G:13:44(ASM)	Road, rock alignments & Trash Scatter	Euroamerican 1880s–1930s	Not Eligible
AZ G:13:45(ASM)	Trash Scatter	Euroamerican 1920s	Not Eligible
AZ I:14:5(ASM) ^{††}	Beale Wagon Road	Euroamerican late 1850s	Eligible
AZ I:15:156(ASM)	Historic Route 66	Euroamerican ca. 1920s–Present	Determined Eligible
AZ U:13:248(ASM)	US93	Euroamerican ca. 1946–1965	Eligible
NA3358 No Site Card	Ceramic Scatter	Ceramic Period A.D. 200–1500	Unevaluated
NA3378 No Site Card	Ceramic Scatter	Ceramic Period A.D. 200–1500	Unevaluated
NA3379 No Site Card	Ceramic Scatter	Protohistoric/Historic A.D. 1500–1950	Unevaluated
NA3382 No Site Card	Erickson House	Euroamerican ca. 1938	Unevaluated
NA3387 No Site Card	Village Site	Unknown Prehistoric	Unevaluated
NA3800 No Site Card	Burial	Cerbat/Pai A.D. 1200–1450	Unevaluated
Advanced Sites (sites associated with in-progress projects in AZSITE)			
AZ F:16:104(ASM)* No Site Card	No Data	No Data	No Data
AZ F:16:105(ASM)* No Site Card	No Data	No Data	No Data
AZ F:16:106(ASM)* No Site Card	No Data	No Data	No Data
AZ F:16:107(ASM)* No Site Card	No Data	No Data	No Data
AZ F:16:108(ASM)* No Site Card	No Data	No Data	No Data
AZ F:16:109(ASM)* No Site Card	No Data	No Data	No Data
AZ F:16:110(ASM)* No Site Card	No Data	No Data	No Data
AZ F:16:111(ASM)* No Site Card	No Data	No Data	No Data
AZ F:16:112(ASM)* No Site Card	No Data	No Data	No Data

Site Number [†]	Site Type	Cultural Affiliation & Date	NRHP Eligibility Recommendation
AZ F:16:113(ASM) * No Site Card	No Data	No Data	No Data
AZ F:16:114(ASM) * No Site Card	No Data	No Data	No Data
AZ F:16:115(ASM) * No Site Card	No Data	No Data	No Data
AZ G:13:64(ASM) ** No Site Card	No Data	No Data	No Data
AZ G:13:65(ASM) ** No Site Card	No Data	No Data	No Data
SHPO County Sites (from AZSITE)			
Property Key 7067 AZ F:16:18(ASM)	Hubbs Residence	Euroamerican Constructed 1893	National Register Listed NARA Ref 78000554 6/15/1978
Property Key 7100	Mohave County Courthouse and Jail	Euroamerican Constructed 1909 and 1915	National Register Listed NARA Ref 83002990 8/25/1983
Property Key 7103	St. Mary's Catholic Church & School	Euroamerican Constructed 1897	National Register Listed NARA Ref 86001167 5/14/1986
Property Key 7104	Elks Lodge No. 468	Euroamerican Constructed 1903–1904	National Register Listed NARA Ref 86001138 5/14/1986
Property Key 36829	Santa Fe Railroad Depot	No Data	National Register Listed NARA Ref 1001091 10/11/2001
Property Key 36948	Kingman Motel	Euroamerican No Additional Data	No Data
Property Key 36959 Site/ AZ F:12:22(ASM)	Northern Avenue Petroglyph	No Data	National Register Listed NARA Ref 96001054 10/3/1996
Property Key 36980	El Trovatore Motel	Euroamerican No Additional Data	No Data

[†] Site numbers are assigned by: ASM = Arizona State Museum; BLM = Bureau of Land Management; NA = Museum of Northern Arizona; NARA = National Archives (NRHP).

^{††} The portion of the Beale Wagon Road that runs through Kingman was originally recorded as Site AZ F:16:19(ASM) but was later consolidated into Site AZ I:14:5(ASM).

* Recorded by Logan Simpson Design, Inc. (Project 2012-345.ASM; I-40/US 93 West Kingman TI); not in AZSITE.

**Recorded by AECOM (Project 2017-534; Kingman Crossing Blvd: Southern Ave to Airfield Ave); not in AZSITE.

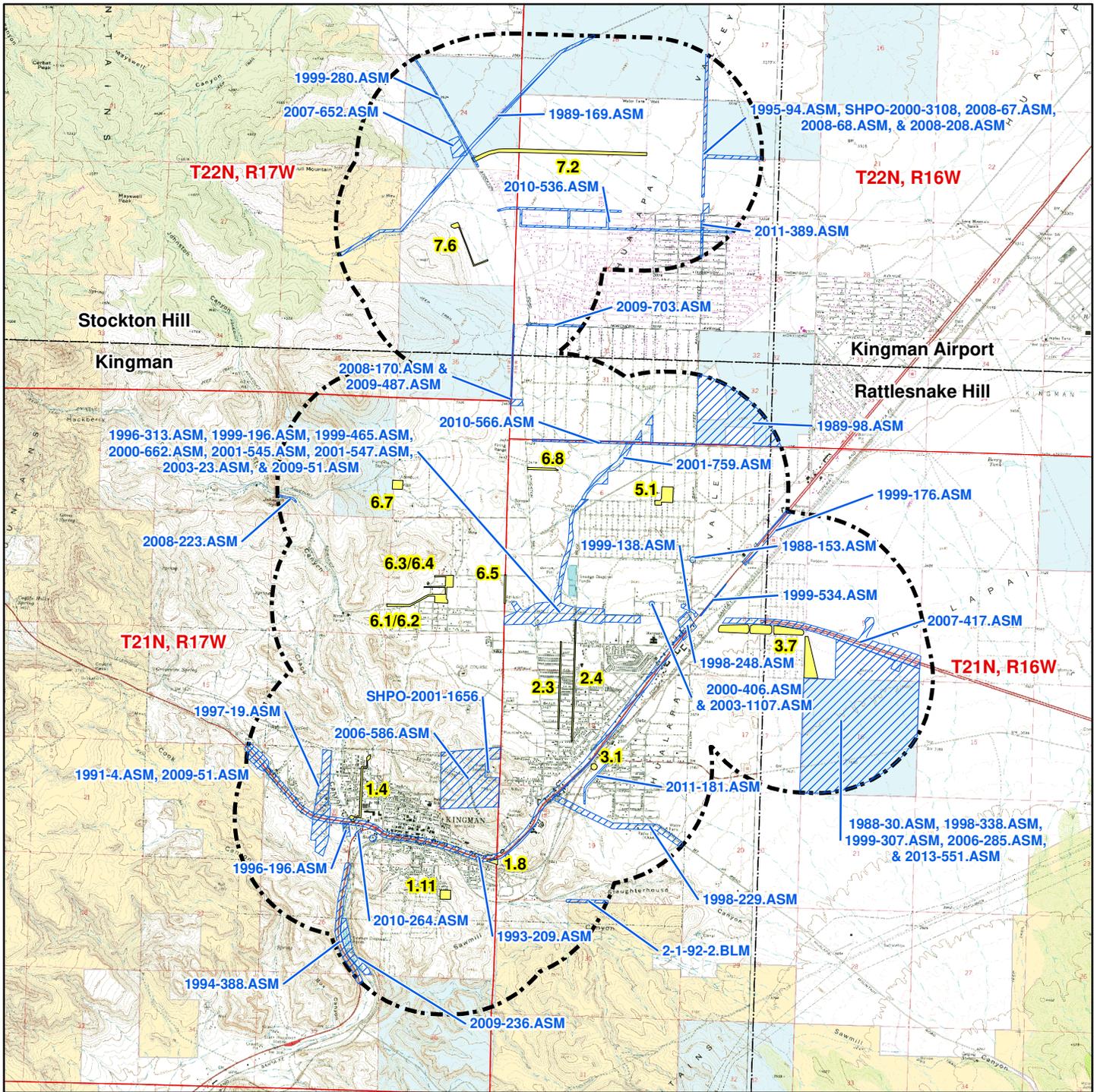
Table 3. Historic Structures Not Assigned Site Numbers within 1 Mile of the Kingman Area Drainage Master Plan

Property Key No.	Property Name	Date	Street Address (Kingman, AZ 86401)	NRHP Eligibility Recommendation
7055	Ed Thompson's Saloon	1899	329 W Andy Devine Ave.	Listed, District Contributor
7056	Hotel Beale	1899	319 W Andy Devine Ave.	Listed, Individual
7057	Lovin Building	1906	317 E Andy Devine Ave.	Listed, Individual
7058	Hotel Brunswick	1907–1909	313 W Andy Devine Ave.	Listed, Individual
7059	Arizona Stores Company Building	1912	311 W Andy Devine Ave.	Listed, District Contributor
7060	Old Trails Garage	1915	307 W Andy Devine Ave.	Listed, District Contributor
7061	John Mulligan Building	1922	301 W Andy Devine Ave.	Listed, Individual
7068	No Data	1897	519 Golconda Ave.	Listed, Individual
7069	House	1906	536 Park St.	Listed, Individual
7070	Walker, O. E., House	1916	906 Madison St.	Listed, Individual
7072	Lovin & Withers Investment House	1914	722 E Beale St.	Listed, Individual
7073	Sargent, Mrs. M. P., House	1897	426 Topeka St.	Listed, Individual
7075*	Armour and Jacobson Building	1921	426 W Beale St.	Listed, Individual NARA 86001112 5/14/1986
7076	Gruniger, W. A., Building [or Gruninger?]	1921	424 W Beale St.	Listed, Individual
7077	Livingston, Dr. David S., House	1889	222 Topeka St.	Listed, Individual
7078	Dennis, Foster S., House	1889	125 Park St.	Listed, Individual
7079	A. T. & S. F. Locomotive No. 3759	1927	310 W Beale St.	Listed, Individual
7084	U.S. Post Office	1935	310 N 4th St.	Listed, Individual
7085	Masonic Temple	1939	212 N 4th St.	Listed, Individual
7086*	Van Marter building	1921	423 W Beale St.	Listed, Individual NARA 86001150 5/14/1986
7087	I.O.O.F. Building	1912	208 N 5th St.	Listed, Individual
7088	Blakely, Ross H., House	1897	519 E Spring St.	Listed, Individual
7089	Ziemer, Charles, House	1898	507 E Oak St.	Listed, Individual
7090	Williams, Ebenezer B., House	1887	513 E Oak St.	Listed, Individual
7091	Lefever House	1900	525 E Oak St.	Listed, Individual
7092	Brown, J. Duff, House	1911	541 E Oak St.	Listed, Individual
7094	Elliott, S. T., House	1917	537 E Spring St.	Listed, Individual
7095	White, Dr. Toler R., House	1916	509 E Spring St.	Listed, Individual
7096	Blakeley, William G., House	1887	503 E Spring St.	Listed, Individual

Property Key No.	Property Name	Date	Street Address (Kingman, AZ 86401)	NRHP Eligibility Recommendation
7098	Anderson, J. Max, House	1927	523 Pine St.	Listed, Individual
7099	Elliott, S. T., House	1917	527 Pine St.	Listed, Individual
7102	Apartment House	1917	218 E Spring St.	Listed, Individual
7105	Little Red School	1896	219 N 4th St.	Listed, Individual
7106	Sullivan, George H., Lodging House	1911	218 E Oak St.	Listed, Individual
7107	Wright, J. B., House	1912	317 E Spring St.	Listed, Individual
7108	No Data	1911	105 E Spring St.	Listed, Individual
7110	Tyrell House Complex	1897	133 E Beale St.	Listed, Individual
7112*	No Data	post-1923	809 Grandview Ave.	Listed, Individual No Additional data
7113	Lovin Investment House	1911–1916	631 E Beale St.	Listed, Individual
7114	Anderson, R. L., House	1915	703 E Beale St.	Listed, Individual
7115	Gates, J. M., House	1915	714 E Oak St.	Listed, Individual
7116	Carr, Raymond, House	1916	620 E Oak St.	Listed, Individual
7117	Kayser, George R., House	1911	604 E Oak St.	Listed, Individual
7118*	Mylius, Frank A., House	post-1923	909 Grandview Ave.	Listed, District Contributor No Additional Data
7119*	Dutton, C. A., House	1923	408 Lead St.	Listed, District Contributor No Additional Data
7120	Casteel, Sarah R., House	1902	132 E Oak St.	Listed, District Contributor
7121	Haskins, D. M., House	1910	104 E Oak St.	Listed, District Contributor
7122	Metcalfe, Charles, Cottage	1900	120 E Spring St.	Listed, District Contributor
7123	Hogan, D. L., House	1913	125 Pine St.	Listed, District Contributor
7124	No Data	1909, 1916	214 E Oak St.	Listed, District Contributor
7126	No Data	1930	515 E Beale St.	Listed, District Contributor
7127*	Sprouse-Reitz Store	1935	409 W Beale St.	Listed, District Contributor No Additional Data
7128	No Data	1890	226 Topeka St.	Listed, District Contributor
7129	No Data	1918	511 Park St.	Listed, District Contributor
7130	Sweeney's Rooming House	1901, 1910	405 Park St.	Listed, District Contributor
7131	Sweeney's Boarding House	1910	118 S 4th St.	Listed, District Contributor
7132	Sweeney's Rooming House	1901, 1910	409 Park St.	Listed, District Contributor
7133	No Data	pre-1901	116 S 4th St.	Listed, District Contributor
7134	No Data	1910	616 E Beale St.	Listed, District Contributor
7135	910 Madison	pre-1916	910 Madison St.	Listed, District Contributor
7136	No Data	1916	921 Center St.	Listed, District Contributor

Property Key No.	Property Name	Date	Street Address (Kingman, AZ 86401)	NRHP Eligibility Recommendation
22449	Black, Arthur F., House	1919/1933	707 Cerbat Ave.	Listed, District Contributor
36974	Mobil Gas Station	1936	201 E Andy Devine Ave.	No Data

***Bold** Property Key Numbers are Historic structures located along the Stockton Hill Avenue/High School Stormdrain (1.4).



**Kingman Area Drainage Master Plan
Cultural Resources Archival Review**

EnviroSystems Project No. 2049-20

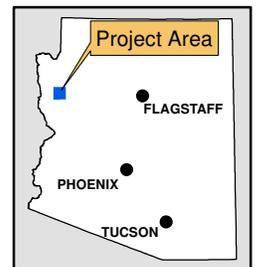
Figure 1. Survey areas and previous projects within 1 mile.



1:80,000

Legend

- JE Fuller survey area
- Previous projects
- State
- BLM
- Private

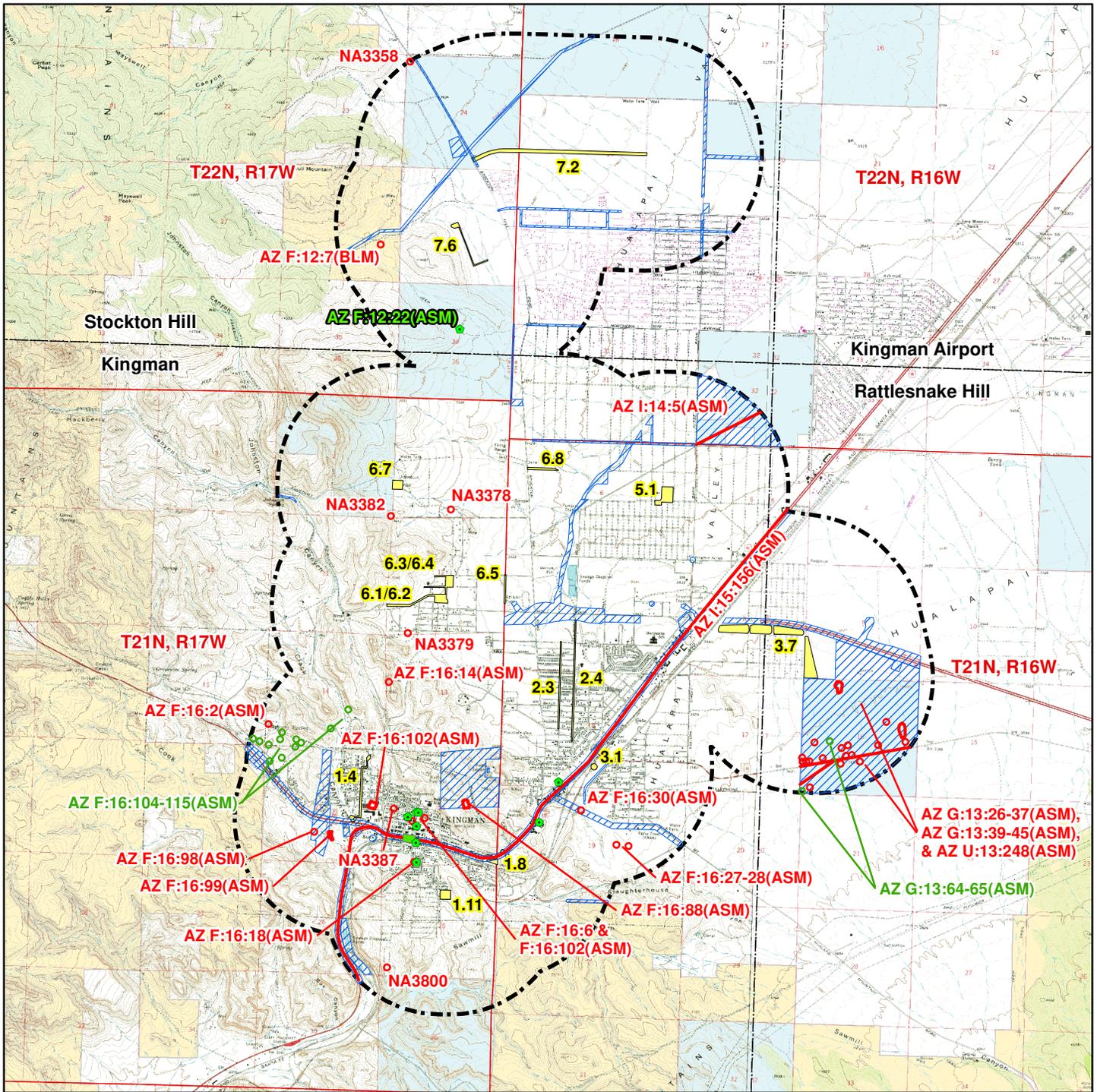


0 1 2 Miles

0 1 2 Kilometers

Base maps are AZ (all 1968),
USGS 7.5' quadrangles.





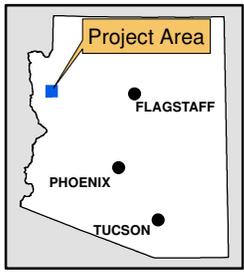
**Kingman Area Drainage Master Plan
Cultural Resources Archival Review**

EnviroSystems Project No. 2049-20

Figure 2. Survey areas and previous sites within 1 mile.

Legend

JE Fuller survey area	Advanced site
Previous projects	SHPO County site
Kingman Commerical Historic District	State
Site	BLM
	Private



Base maps are AZ (all 1968),
USGS 7.5' quadrangles.





**Kingman Area Drainage Master Plan
Cultural Resources Archival Review**

EnviroSystems Project No. 2049-20

Figure 3. Historic district and historic structures near JE Fuller survey area 1.4.



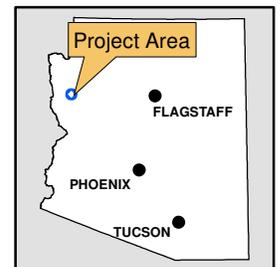
1:24,000

0 0.25 0.5 Miles

0 0.25 0.5 Kilometers

Legend

- JE Fuller survey area
- Historic district
- Selected historic structure
- BLM
- Private



Base map is Kingman, AZ (1968),
USGS 7.5' quadrangle.



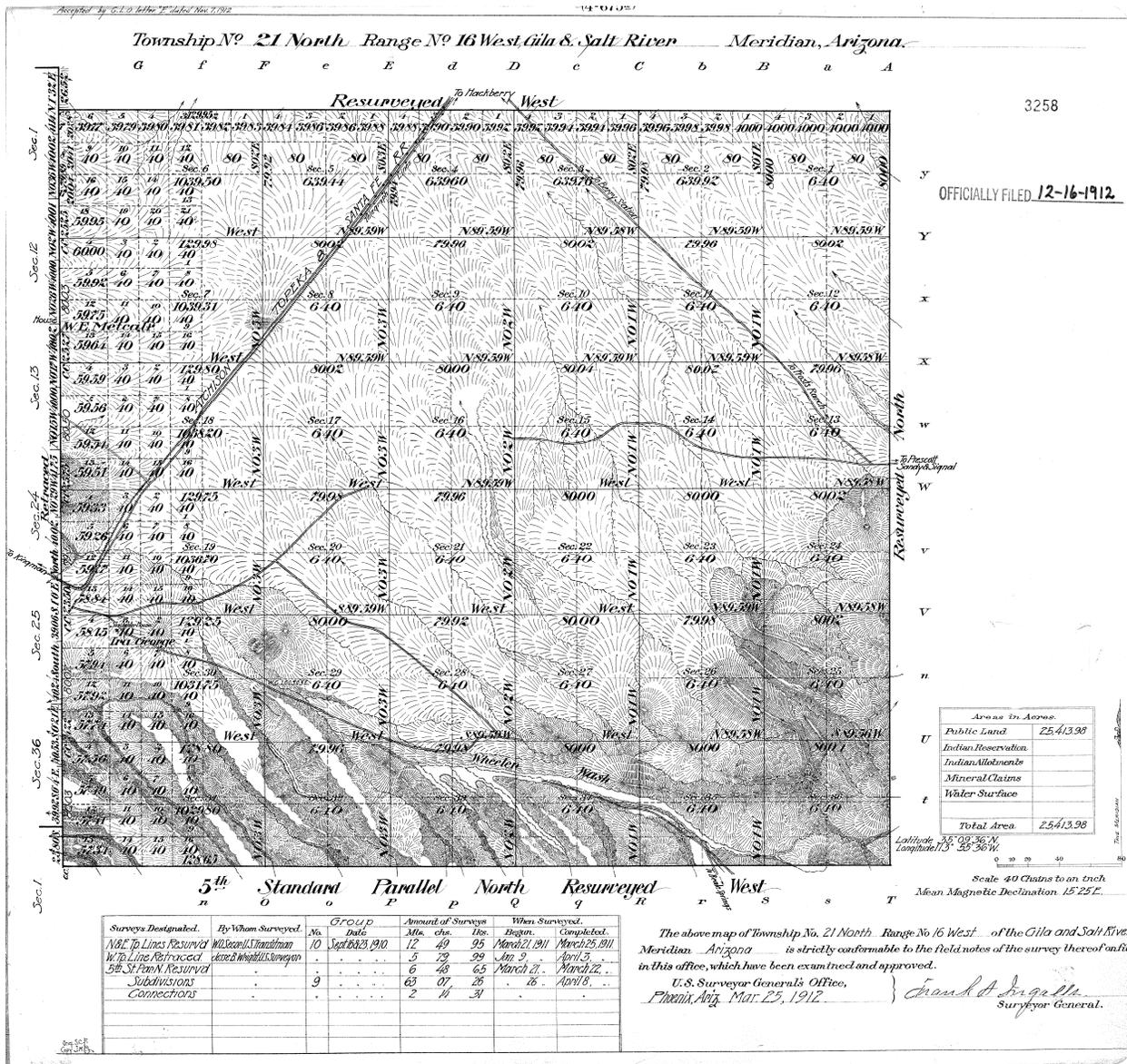
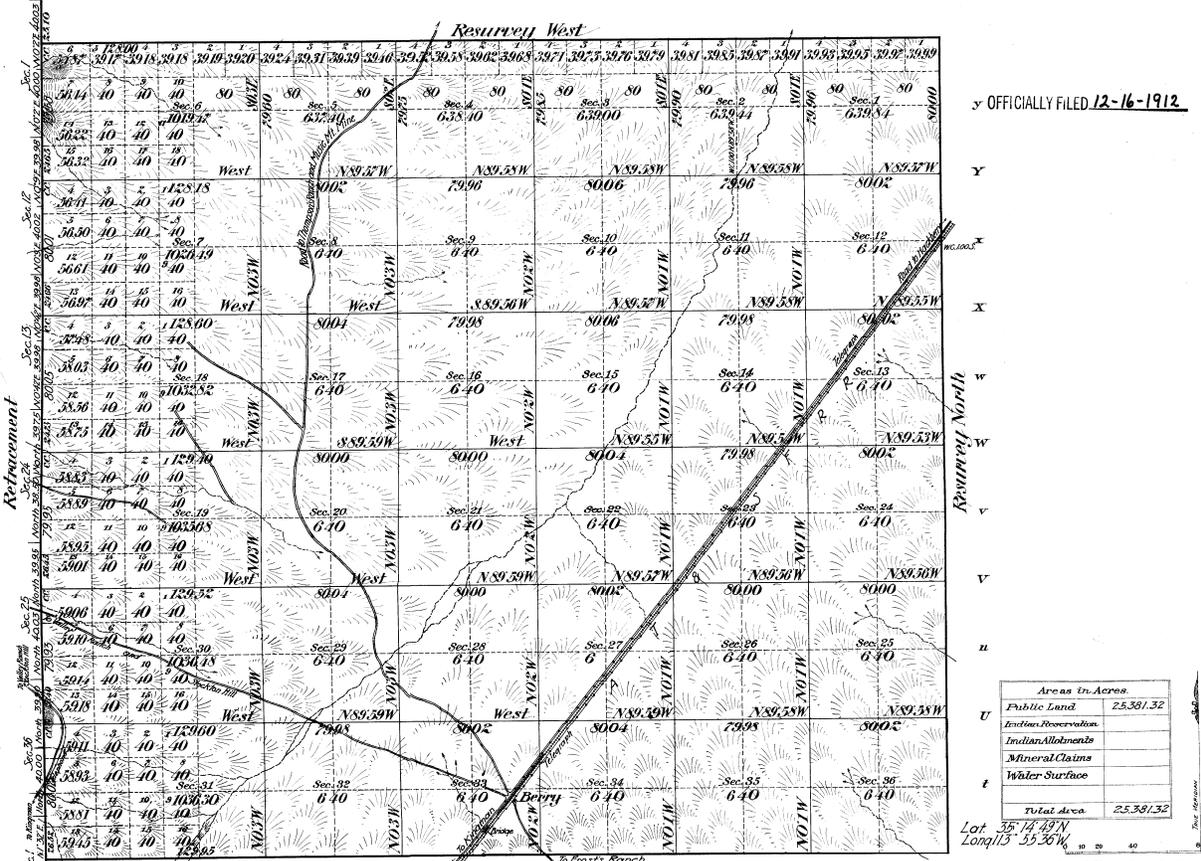


Figure 4. GLO map for Township 21 North, Range 16 West, filed December 16, 1912.

Township No 22 North Range No 16 West Gila & Salt River Meridian, Arizona

3284



OFFICIALLY FILED 12-16-1912

Areas in Acres.	
Public Land	25,381.32
Indian Reservation	
Indian Allotments	
Mineral Claims	
Water Surface	
Total Area	25,381.32

Lat. 35° 14' 49\"/>

Surveys Designated.	By Whom Surveyed.	Group No.	Amount of Surveys			When Surveyed.	
			Ac.	Ch.	Lin.	Begin.	Completed.
N. S. & C. Adm. Res.	Jesse B. Whipple	10	19	17	25	Mar. 24	Apr. 4, 1911
Water Ref.			5	79	54	Apr. 4, 1911	
Subdivisions		9	63	04	60		9-15
Connections			2	18	33		

The above map of Township No. 22 North, Range No. 16 West of the Gila & Salt River Meridian, Arizona is strictly conformable to the field notes of the survey thereof and in this office, which have been examined and approved.

U. S. Surveyor General's Office,
 PHOENIX, ARIZONA, Mar. 25, 1912

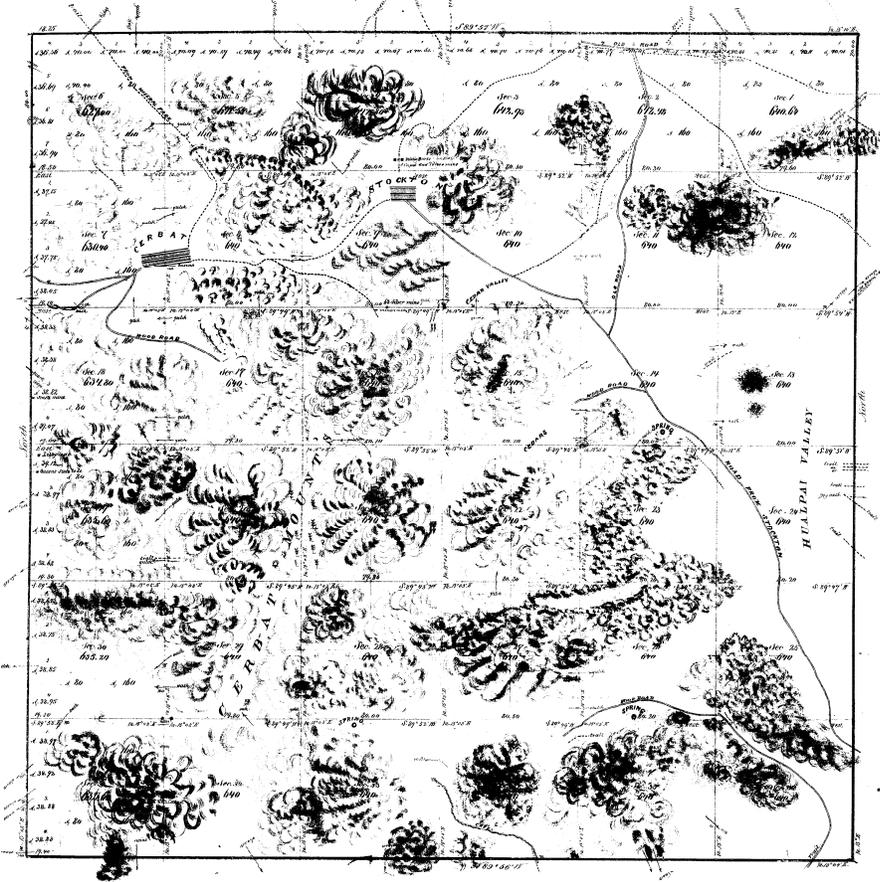
Charles J. Sigalla
 Surveyor General.

Figure 5. GLO map for Township 22 North, Range 16 West, filed December 16, 1912.

TOWNSHIP N^o 22 NORTH RANGE N^o 17 WEST GILA AND SALT RIVER MERIDIAN

3288

OFFICIALLY FILED 8-6-1874



Aggregate Area of Public Lands Surveyed 230000.00 Acres

Survey	By whom surveyed	Date of Survey	Amount of Survey	When surveyed
Township lines	D. F. Case	July 29 th 1872	4 16 00	Aug ^o 11 th 1872
Subdivisions	C. Paulsen Foster	August 5 th 1873	50 78 60	July 16 th 24 th 1874

The above Map of Township 22 North of Range 17 West of the Gila and Salt River Meridians and Division is correct, comprehensive in the field work of the United States Survey as the agent which have been transmitted to approval.

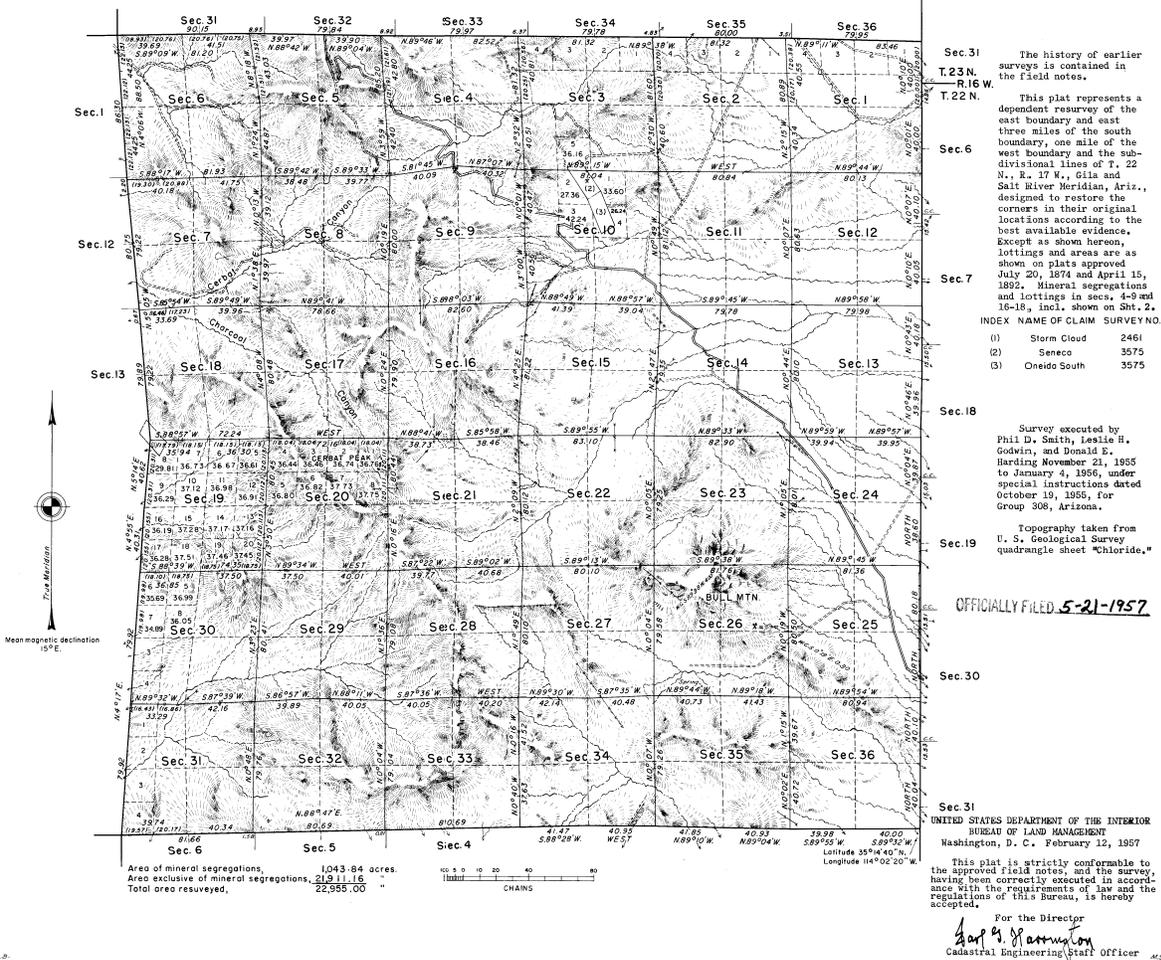
Surveyor General's Office
Tucson, Arizona
11/17 20th 1874
Chas. Grant

Figure 6. GLO map for Township 22 North, Range 17 West, filed August 6, 1874.

TOWNSHIP 22 NORTH, RANGE 17 WEST, GILA AND SALT RIVER MERIDIAN, ARIZONA.

DEPENDENT RESURVEY

3285



Sec. 31 The history of earlier surveys is contained in the field notes.

T. 23 N.
 R. 16 W.
 T. 22 N.

This plat represents a dependent resurvey of the east boundary and east three miles of the south boundary, one mile of the west boundary and the subdivisional lines of T. 22 N., R. 17 W., Gila and Salt River Meridian, Ariz., designed to restore the corners in their original locations according to the best available evidence, except as shown hereon. Lottings and areas are as shown on plats approved July 20, 1874 and April 15, 1892. Mineral segregations and lottings in sec. 4 and 16-18, incl. shown on Sht. 2.

INDEX NAME OF CLAIM SURVEYNO.

(1) Storm Cloud	2461
(2) Seneca	3575
(3) Oneida South	3575

Sec. 18 Survey executed by Phil D. Smith, Leslie H. Godwin, and Donald E. Harding November 21, 1955 to January 4, 1956, under special instructions dated October 19, 1955, for Group 308, Arizona.

Sec. 19 Topography taken from U. S. Geological Survey quadrangle sheet "Whitehorse."

Sec. 30 UNITED STATES DEPARTMENT OF THE INTERIOR
 BUREAU OF LAND MANAGEMENT
 Washington, D. C. February 12, 1957

This plat is strictly conformable to the approved field notes, and the survey, having been correctly executed in accordance with the requirements of law and the regulations of this Bureau, is hereby accepted.

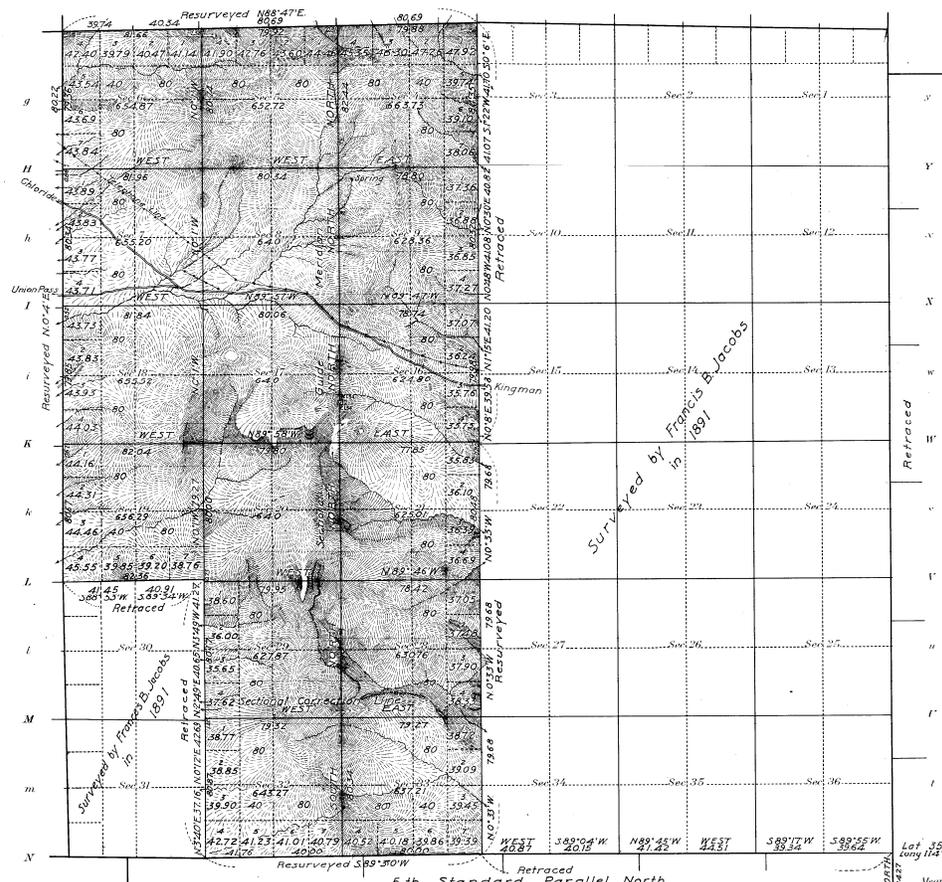
Figure 7. GLO map for Township 22 North, Range 17 West, filed May 21, 1957.

Supplemental Plot of
 Township No. 21 North Range No. 17 West, Gila and Salt River Meridian, Arizona.

Survey accepted April 15, 1919 - G.L.O.

3261

OFFICIALLY FILED 8-14-1919



Areas in Acres	
Public Land	10,275.61
Indian Reservations	
Indian Allotments	
Mineral Claims	
Water Surface	
Total Area	

Scale 40 Chains to an inch
 Mean Magnetic Declination 15° 25' E.

Surveys Designated	By Whom Surveyed	Group	Amount of Surveys		When Surveyed	
			Sec.	Acres	Began	Completed
5th Std. Par. N. Resur.		44	Jan 6, 1915	5 of secs 32 and 33		Feb 8, 1915
N. bdy Resur.	Thos O. Johnston U.S.	"	"	N. " 4, 5 and 6		"
Subdivisions Ret.	Edward Glyman U.S.	"	"	W of secs 15, 16, 30, 31 & 34		" 5-13 "
" Resur.		"	"	W of secs 22, 27 & 34		" 5-6 "
"		"	"	16 secs as shown		" 8-15 "
E. bdy Retraced	Jesse B. Wright U.S.	10	Sept 16, 1910	Complete		Jan 9 April 3, 1911
W "	Frank W. Rusk U.S.	10	Mar. 10 1909	"		" 28 " 29, 1910
5th Std. Par. N. Ret.	Howard G. Mason U.S. and Mary H. Coffin Jr. U.S.	34-35-36		under current Group No. 46		
E. & W. bdy Resur.	5th Std. Par. N. Resur. S of Sec. 31, Subdivisions (22 sec.)			surveyed by Francis B. Jacobs, U.S.S. under Com'l Order May 25, 1891.		

Supplemental
 The above map of Township No. 21 North Range No. 17 West of the Gila and Salt River Meridian Arizona is strictly conformable to the field notes of the survey thereof on file in this office, which have been examined and approved
 U.S. Surveyor General's Office.
 Phoenix, Arizona December 24, 1917.

Frank C. Smith
 Surveyor General.

Figure 8. GLO map for Township 21 North, Range 17 West, filed August 14, 1919.

PRELIMINARY RECORDS REVIEW FOR THE KINGMAN AREA DRAINAGE PLAN,
MOHAVE COUNTY, ARIZONA

Prepared for

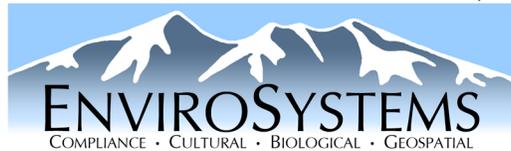
J.E. FULLER HYDROLOGY AND GEOMORPHOLOGY, INC.
323 N. San Francisco Street, Suite 100
Flagstaff, Arizona 86001
(928) 699-4409

Prepared by

Blayne R. Brown

Joshua Whiting, RPA/M.A., Technical Editor
Travis Ellison, Mapping/Graphics

ENVIROSYSTEMS MANAGEMENT, INC.



23 East Fine Avenue
Flagstaff, Arizona 86001
(928) 226-0236
www.esmaz.com

EnviroSystems Management Project and Report No. 2049-20 (Preliminary Records Review)

April 9, 2020

On behalf of J. E. Fuller, EnviroSystems Management, Inc. (EnviroSystems or ESM) conducted a preliminary cultural resources archival review for the Kingman Area Drainage Plan, Mohave County, Arizona. Between April 2 and April 6, 2020, EnviroSystems Archaeologists Travis Ellison and Blayne R. Brown conducted records searches via AZSITE, the online database for archaeological project and site records maintained by the Arizona State Museum (ASM).

The records review looked areas surrounding 18 locations:

- Stockton Hill Avenue/High School Stormdrain (1.4)
- Detention Upstream of 8th Street (1.8)
- 4th Avenue Basin (1.11)
- Main Street Stormdrain Extension (2.3)
- Fairgrounds Boulevard Stormdrain (2.4)
- Harrod Avenue Basin Upgrades (3.1)
- I-40 Regional Retention Basin 1 (3.7)
- I-40 Regional Retention Basin 2 (3.7)
- I-40 Regional Retention Basin 3 (3.7)
- I-40 Regional Retention Basin 4 (3.7)
- Pinal Street Basin (5.1)
- Anson Smith Road Collector Channel and Basin (6.1/6.2)
- Harvard Street Improvements and Basin (6.3/6.4)
- Western Avenue Stormdrain (6.5)
- Vista Basin (6.7)
- Lower Crestwood Channel (6.8)
- Grace Neal Channel (7.2)
- Shane Channel (7.6)

The AZSITE database yielded 53 previous surveys conducted within 1 mile of the project areas (*Table 1; Figure 1*). These projects were conducted between 1988 and 2017 and are primarily associated with development and infrastructure. Two sites are not in AZSITE; these were identified from “advanced sites” (in-progress sites). Project 1999-280.ASM runs past the extreme west end of the Grace Neal Channel (Location 7.2). Project 2007-417.ASM run immediately north of the Interstate 40 Regional Retention Basins (Location 3.7) and projects 1988-30.ASM, 1998-338.ASM, 1999-307.ASM, 2006-285.ASM, and 2013-551.ASM are located immediately to the south; none of these projects, however, occur within the unit. Projects 1996-313.ASM, 1999-196.ASM, 1999-465.ASM, 2000-662.ASM, 2001-545.ASM, 2001-547.ASM, 2003-23.ASM, and 2009-51.ASM are all immediately north of the Fairgrounds Boulevard Stormdrain (Location 2.4) but also do not occur within the unit. Project 1993-209.ASM runs across the extreme south end of the Stockton Hill Avenue/High School Stormdrain (Location 1.4) and occurs immediately north of, but not within, the Detention Upstream of 8th Street (Location 1.8). The remaining locations do not have any associated previous projects.

The previous projects depicted in AZSITE have resulted in 62 previously recorded sites, an additional 63 historic structures, and one historic district (*Table 2; Figure 2*). These include 14 “advanced sites” and eight SHPO Mohave County Sites. With the exception of AZ F:12:7(BLM) and many of the County Sites, the remaining sites have all been assigned ASM numbers. Two of

the County Sites are also associated with AZ F:16:18(ASM) and AZ F:12:22(ASM) (Northern Avenue Petroglyph Site and Hubbs Residence, respectively). Advanced sites in AZSITE are sites recorded during projects that are still in progress and have not been completely entered into the online data. These sites have limited associated information and the site plots are provisional. The majority of the Advanced Sites were recorded by Logan Simpson Design (LSD) in 2012 and are located to the northwest of downtown Kingman. Two Advanced Sites were recorded by AECOM Engineering in 2017 and are located east of town and south of Interstate 40. Neither of these projects are depicted in AZSITE but were added to the previous projects table (Table 1). Another 63 historic structures shown in AZSite are not associated with ASM, BLM, or SHPO site numbers in AZSite (Table 3). Of these, six occur in close proximity to the Stockton Hill Avenue/High School Stormdrain (1.4) (Figure 3); the remainder of these structures have currently not been plotted on Figures 2 or 3. Finally, the Kingman Commercial Historic District includes 4.5 acres along the 300 and 400 blocks of Andy Devine Avenue, located downtown east of the Stockton Hill Avenue/High School Stormdrain (1.4).

Overall, the sites are dominated by historic trash dumps and scatters, primarily located around the periphery of Kingman, followed by a few historic structures and roads. Prehistoric sites are few and consist of a village site (NA3387), 2 temporary camps (AZ F:12:7[BLM] and AZ F:16:2[ASM]), and 2 ceramic scatters (NA3358 and NA3378). The majority of these sites are not eligible to the National Register of Historic Places (National Register or NRHP), or they are unevaluated or there is no data. Only four sites are recommended eligible to the National Register. These include a Cerbat temporary camp (AZ F:12:7[BLM]), an extensive historic trash scatter (AZ F:16:99[ASM]), the Beale Wagon Road (AZ I:14:5[ASM]), and historic US Route 93 (AZ U:3:248[ASM]). Historic Route 66 (AZ I:15:156[ASM]) is determined eligible to the NRHP and seven sites identified in AZSITE are listed on the National Register. The six historic structures near the Stockton Hill Avenue/High School Stormdrain (1.4) are also on the National Register. None of the previously recorded sites occur within the proposed Kingman Area Drainages project locations; however, historic Route 66, runs immediately north of the Detention Upstream of 8th Street (Location 1.8) and, of course, six structures occur near survey area 1.4.

Sites identified in AZSITE as listed on the National Register include six historic buildings and a petroglyph site listed as SHPO County Sites, and an addition six historic structures not assigned site numbers in AZSite. Therefore, Mr. Brown checked the National Archives Catalog on April 6 and April 7, 2020 to review these properties. In addition to the National Register-listed sites identified in AZSITE, another 63 properties are on the National Register in the City of Kingman. Many of these sites are located downtown and/or within the 1-mile study area and may be among the historic structures in AZSite that were not added to the previously recorded sites table (see Table 3).

In addition, several General Land Office (GLO) plat maps were examined on April 6, 2020 by Mr. Brown. The GLO map filed December 16, 1912 for Township 21 North, Range 16 West (Figure 4) depicts the "Atchison Topeka, & Santa Fe R.R." (ATSF) passing through the 1-mile study area. The ATSF railroad is still in use as the Burlington Northern and Santa Fe (BNSF). A few associated roads on the map may also still be present. The railroad is again depicted on the GLO map for Township 22 North, Range 16 West (Figure 5); however, it is well outside of the study area. Several roads depicted on the map may still be present within the study area. GLO maps for

Township 22 North, Range 17 West were filed on August 6, 1874 (*Figure 6*) and May 21, 1957 (*Figure 7*). These maps both depict the “Road from Stockton” which is now currently in use as Stockton Hill Road. Only the west half of Township 21 North, Range 17 West is depicted on the GLO filed August 14, 1919 (*Figure 8*). The western portion of the GLO is outside the study area. The eastern portion of the GLO that would occur within the study area and includes downtown Kingman has not been mapped.

In sum, no surveys have occurred within any of the proposed locations. Therefore, all project locations would require a Class III cultural resources inventory prior to any ground disturbing activities. Most of the sites are found in larger block surveys around the periphery of Kingman; therefore, EnviroSystems would not expect an abundance of sites within the proposed locations. However, sites are possible and would mostly likely be historic in nature. Project areas located near historic downtown Kingman may have in-use historic structures present near or immediately adjacent to them.

Table 1. Previous Archaeological Investigations within 1 Mile of the Kingman Area Drainage Master Plan

Project No.*	Project Name	Organization**
1988-30.ASM	State Land Survey	ASM
1989-98.ASM	HNC - Kingman	ARS
1988-153.ASM	Bank St. - Airway Ave. Intersection Survey, Kingman	PMDR
1989-169.ASM	AT&T Flagstaff to Las Vegas Fiber	D&M
1991-4.ASM	Route 93 Relocation Study	SRI
1993-209.ASM	KINGMAN SIDEWALKS	ARS
1994-4.ASM	KINGMAN: US93 REALIGNMENT	ACS
1994-388.ASM	Old 66 South of Kingman (Holy Moses Wash Bridge)	PMDR
1995-94.ASM	Kingman: Bank St. Overhead Powerline Extension	ACS
1996-196.ASM	Kingman Maintenance Shop	ARS
1996-313.ASM	Interstate 40 - Stockton Hill Road Interchange	ARS
1997-19.ASM	I-40 West Kingman TI, at US 93	PMDR
1998-229.ASM	Hualapai Mountain Bike Path	PMDR
1998-248.ASM	ADOT - Kingman I	SCI
1998-338.ASM	Rancho Santa Fe	RCI
1999-138.ASM	East Kingman TI	LSD
1999-176.ASM	SR 66 in Kingman	ACS
1999-196.ASM	Stockton Hill Road Kingman TI	LSD
1999-280.ASM	Two Parcels Near Kingman	PMDR
1999-307.ASM	Disposal D-3-128	EcoPlan
1999-465.ASM	Beverly Ave., Kingman	LSD
1999-534.ASM	SR 66 Survey, Kingman Maintenance District	PMDR
2000-406.ASM	SBA Inc. Flagstaff Build (Mohave Co.)	ALC
2000-662.ASM	I-40, Mohave Wash Pathway	HDR
2001-545.ASM	I-40, Mohave Wash	EcoPlan
2001-547.ASM	I-40, Beverly	EcoPlan
2001-759.ASM	Mohave Wash Survey	SWCA
2003-23.ASM	Kingman Multi-Use Pathway Survey	EcoPlan
2003-1107.ASM	SR 95 Lake Havasu City	LSD
2006-285.ASM	Kingman 640	URS
2006-586.ASM	Sundance Canyon Kingman	LSD
2007-417.ASM	Kingman Crossing TI	EcoPlan

Project No.*	Project Name	Organization**
2007-652.ASM	Three Development Sites	Aztec
2008-67.ASM	MoCo ASLD Arch Survey	SWCA
2008-68.ASM	MoCo Bank Street Survey	SWCA
2008-170.ASM	Horizon Bank Survey	FCR
2008-208.ASM	North Bank Street Survey	EPG
2008-223.ASM	Johnson Spring Canyon Fence	SWCA
2009-51.ASM	I-40; Holy Moses Wash to Rattlesnake Wash	Aztec
2009-236.ASM	Kingman Downtown WWTP	BC
2009-487.ASM	Bull Mountain Drainage Improvements Survey	TRS
2009-703.ASM	Northern Avenue	HDR
2010-264.ASM	Johnson Wash Bridge	LSD
2010-536.ASM	Jagerson Avenue Improvements	SWCA
2010-566.ASM	Gordon Drive Widening Reconstruction	LSD
2011-181.ASM	Eastern Pathway	ACS
2011-389.ASM	Bank Street Widening Northern to Jagerson	SWCA
2012-345.ASM	I-40/US 93 West Kingman TI	LSD
2013-551.ASM	Section 16 ROW Corridor East of Kingman Inventory	ESM
2017-534.ASM	Kingman Crossing Blvd: Southern Ave to Airfield Ave	AECOM
2-1-92-2.BLM	Transwestern Pipeline	BLM-KFO
SHPO-2000-3108	ASLD Application 16-106141 - Mohave County - ASLD Considering Application for a New, Perpetual ROW Acquisition	Unknown
SHPO-2001-1656	Review of Cingular Wireless Facility LV 323-01 - at 1000 Radar Hill, Kingman	Unknown

* Project numbers include: ASM = Arizona State Museum; BLM = Bureau of Land Management; SHPO = Arizona State Historic Preservation Office.

**ACS = Archaeological Consulting Services, Ltd.; AECOM = AECOM Engineering; ARS = Archaeological Research Services, Ltd.; ALC = Andrew L. Christenson; ASM = Arizona State Museum; Aztec = Aztec Archaeological Consultants, LLC; BC = Brown and Caldwell; BLM-KFO = Bureau of Land Management – Kingman Field Office; EcoPlan = EcoPlan Associates, Inc.; EPG = Environmental Planning Group, LLC.; ESM = EnviroSystems Management, Inc.; FCR = Four Corners Research, Inc.; HDR = HDR Engineering, Inc.; LSD = Logan Simpson Design, Inc.; DAMES = Dames & Moore Intermountain Cultural Resource Services; PMDR = Plateau Mountain Desert Research; RCI = Rincon Consultants, Inc.; SRI = Statistical Research, Inc.; SCI = Stantec Consulting, Inc.; SWCA = SWCA Environmental Consultants; TRS = Tierra Right-of-Way Services, Ltd.; URS = URS Corporation.

Table 2. Previously Recorded Sites within 1 Mile of the Kingman Area Drainage Master Plan

Site Number†	Site Type	Cultural Affiliation & Date	NRHP Eligibility Recommendation
Sites listed in AZSITE			
AZ F:12:7(BLM)	Temporary Camp	Cerbat A.D. 1100–1600	Eligible
AZ F:16:2(ASM)	Atlantic Spring Temporary Camp	Unknown Prehistoric	Unevaluated
AZ F:16:6(ASM)	Kingman Public Library	Euroamerican No Data	Unevaluated
AZ F:16:12(ASM)	Bonelli House	Euroamerican No Data	National Register Listed NARA Ref 75000352 4/24/1975
AZ F:16:14(ASM)	Rockshelter	Cerbat/Pai A.D. 1200–1450	Unevaluated
AZ F:16:27(ASM)	Foundations & Trash Dumps	Euroamerican Depression Era	Unevaluated
AZ F:16:28(ASM)	Trash Dump	Euroamerican Depression Era	Unevaluated
AZ F:16:30(ASM)	Trash Scatter	Euroamerican No Data	Unevaluated
AZ F:16:88(ASM)	Rock Clusters, Pits, Checkdams, & Trash Scatter	Euroamerican ca. 1880–post 1972	Not Eligible
AZ F:16:98(ASM)	Prospect Pit	Euroamerican Unknown Historic	Not Eligible
AZ F:16:99(ASM)	Trash Scatter	Euroamerican 1880s–1940s	Eligible
AZ F:16:102(ASM)	Cemetery	Euroamerican No Data	Unevaluated
AZ G:13:26(ASM)	Trash Scatter	Euroamerican ca. 1940/1953–1968	Not Eligible
AZ G:13:27(ASM)	Trash Scatter	Euroamerican 1937–1948	Not Eligible
AZ G:13:28(ASM)	Trash Dump	Euroamerican ca. 1930	Not Eligible
AZ G:13:29(ASM)	Trash Dump	Euroamerican late 1940s/early 1950s	Not Eligible
AZ G:13:30(ASM)	Trash Dump	Euroamerican 1915–1930s	Not Eligible
AZ G:13:31(ASM)	Trash Dump	Euroamerican 1950s	Not Eligible
AZ G:13:32(ASM)	Trash Dump	Euroamerican 1915–1920s	Not Eligible
AZ G:13:33(ASM)	Trash Dumps	Euroamerican 1915–1940s	Not Eligible
AZ G:13:34(ASM)	Trash Dump	Euroamerican mid-1950s	Not Eligible
AZ G:13:35(ASM)	Trash Scatter	Euroamerican 1940s	Not Eligible
AZ G:13:36(ASM)	Trash Scatter	Euroamerican 1940s–1960s	Not Eligible
AZ G:13:37(ASM)	Trash Dump	Euroamerican 1940s–1960s	Not Eligible

Site Number [†]	Site Type	Cultural Affiliation & Date	NRHP Eligibility Recommendation
AZ G:13:39(ASM)	Trash Scatter	Euroamerican 1915–1920s	Not Eligible
AZ G:13:40(ASM)	Trash Scatter	Euroamerican 1915–1930s	Not Eligible
AZ G:13:41(ASM)	Trash Dump	Euroamerican 1955–1960s	Not Eligible
AZ G:13:42(ASM)	Trash Scatter	Euroamerican 1935–1940s	Not Eligible
AZ G:13:43(ASM)	Trash Scatter	Euroamerican post-1935	Not Eligible
AZ G:13:44(ASM)	Road, rock alignments & Trash Scatter	Euroamerican 1880s–1930s	Not Eligible
AZ G:13:45(ASM)	Trash Scatter	Euroamerican 1920s	Not Eligible
AZ I:14:5(ASM) ^{††}	Beale Wagon Road	Euroamerican late 1850s	Eligible
AZ I:15:156(ASM)	Historic Route 66	Euroamerican ca. 1920s–Present	Determined Eligible
AZ U:13:248(ASM)	US93	Euroamerican ca. 1946–1965	Eligible
NA3358 No Site Card	Ceramic Scatter	Ceramic Period A.D. 200–1500	Unevaluated
NA3378 No Site Card	Ceramic Scatter	Ceramic Period A.D. 200–1500	Unevaluated
NA3379 No Site Card	Ceramic Scatter	Protohistoric/Historic A.D. 1500–1950	Unevaluated
NA3382 No Site Card	Erickson House	Euroamerican ca. 1938	Unevaluated
NA3387 No Site Card	Village Site	Unknown Prehistoric	Unevaluated
NA3800 No Site Card	Burial	Cerbat/Pai A.D. 1200–1450	Unevaluated
Advanced Sites (sites associated with in-progress projects in AZSITE)			
AZ F:16:104(ASM)* No Site Card	No Data	No Data	No Data
AZ F:16:105(ASM)* No Site Card	No Data	No Data	No Data
AZ F:16:106(ASM)* No Site Card	No Data	No Data	No Data
AZ F:16:107(ASM)* No Site Card	No Data	No Data	No Data
AZ F:16:108(ASM)* No Site Card	No Data	No Data	No Data
AZ F:16:109(ASM)* No Site Card	No Data	No Data	No Data
AZ F:16:110(ASM)* No Site Card	No Data	No Data	No Data
AZ F:16:111(ASM)* No Site Card	No Data	No Data	No Data
AZ F:16:112(ASM)* No Site Card	No Data	No Data	No Data

Site Number [†]	Site Type	Cultural Affiliation & Date	NRHP Eligibility Recommendation
AZ F:16:113(ASM) * No Site Card	No Data	No Data	No Data
AZ F:16:114(ASM) * No Site Card	No Data	No Data	No Data
AZ F:16:115(ASM) * No Site Card	No Data	No Data	No Data
AZ G:13:64(ASM) ** No Site Card	No Data	No Data	No Data
AZ G:13:65(ASM) ** No Site Card	No Data	No Data	No Data
SHPO County Sites (from AZSITE)			
Property Key 7067 AZ F:16:18(ASM)	Hubbs Residence	Euroamerican Constructed 1893	National Register Listed NARA Ref 78000554 6/15/1978
Property Key 7100	Mohave County Courthouse and Jail	Euroamerican Constructed 1909 and 1915	National Register Listed NARA Ref 83002990 8/25/1983
Property Key 7103	St. Mary's Catholic Church & School	Euroamerican Constructed 1897	National Register Listed NARA Ref 86001167 5/14/1986
Property Key 7104	Elks Lodge No. 468	Euroamerican Constructed 1903–1904	National Register Listed NARA Ref 86001138 5/14/1986
Property Key 36829	Santa Fe Railroad Depot	No Data	National Register Listed NARA Ref 1001091 10/11/2001
Property Key 36948	Kingman Motel	Euroamerican No Additional Data	No Data
Property Key 36959 Site/ AZ F:12:22(ASM)	Northern Avenue Petroglyph	No Data	National Register Listed NARA Ref 96001054 10/3/1996
Property Key 36980	El Trovatore Motel	Euroamerican No Additional Data	No Data

[†] Site numbers are assigned by: ASM = Arizona State Museum; BLM = Bureau of Land Management; NA = Museum of Northern Arizona; NARA = National Archives (NRHP).

^{††} The portion of the Beale Wagon Road that runs through Kingman was originally recorded as Site AZ F:16:19(ASM) but was later consolidated into Site AZ I:14:5(ASM).

* Recorded by Logan Simpson Design, Inc. (Project 2012-345.ASM; I-40/US 93 West Kingman TI); not in AZSITE.

**Recorded by AECOM (Project 2017-534; Kingman Crossing Blvd: Southern Ave to Airfield Ave); not in AZSITE.

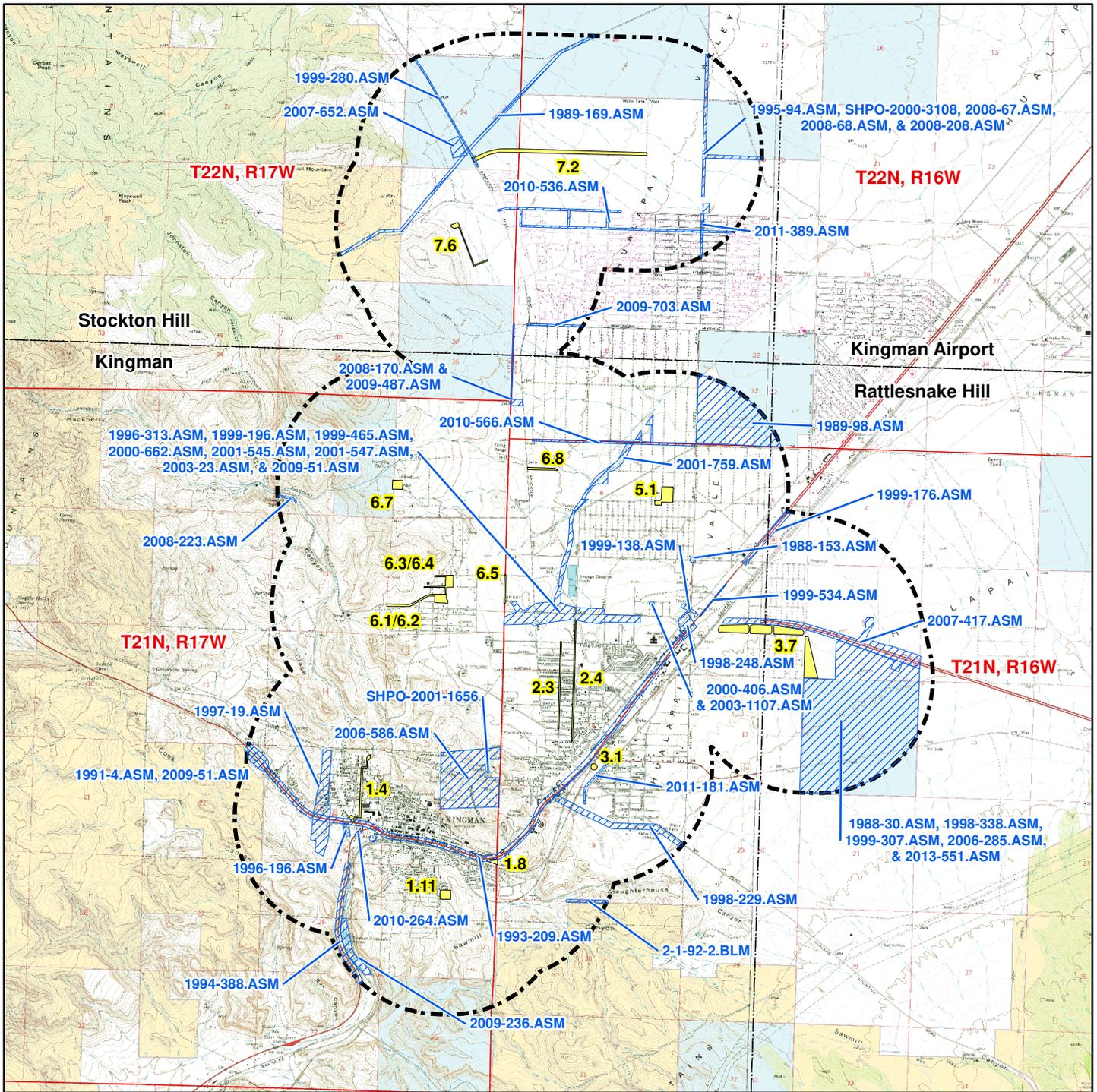
Table 3. Historic Structures Not Assigned Site Numbers within 1 Mile of the Kingman Area Drainage Master Plan

Property Key No.	Property Name	Date	Street Address (Kingman, AZ 86401)	NRHP Eligibility Recommendation
7055	Ed Thompson's Saloon	1899	329 W Andy Devine Ave.	Listed, District Contributor
7056	Hotel Beale	1899	319 W Andy Devine Ave.	Listed, Individual
7057	Lovin Building	1906	317 E Andy Devine Ave.	Listed, Individual
7058	Hotel Brunswick	1907–1909	313 W Andy Devine Ave.	Listed, Individual
7059	Arizona Stores Company Building	1912	311 W Andy Devine Ave.	Listed, District Contributor
7060	Old Trails Garage	1915	307 W Andy Devine Ave.	Listed, District Contributor
7061	John Mulligan Building	1922	301 W Andy Devine Ave.	Listed, Individual
7068	No Data	1897	519 Golconda Ave.	Listed, Individual
7069	House	1906	536 Park St.	Listed, Individual
7070	Walker, O. E., House	1916	906 Madison St.	Listed, Individual
7072	Lovin & Withers Investment House	1914	722 E Beale St.	Listed, Individual
7073	Sargent, Mrs. M. P., House	1897	426 Topeka St.	Listed, Individual
7075*	Armour and Jacobson Building	1921	426 W Beale St.	Listed, Individual NARA 86001112 5/14/1986
7076	Gruniger, W. A., Building [or Gruninger?]	1921	424 W Beale St.	Listed, Individual
7077	Livingston, Dr. David S., House	1889	222 Topeka St.	Listed, Individual
7078	Dennis, Foster S., House	1889	125 Park St.	Listed, Individual
7079	A. T. & S. F. Locomotive No. 3759	1927	310 W Beale St.	Listed, Individual
7084	U.S. Post Office	1935	310 N 4th St.	Listed, Individual
7085	Masonic Temple	1939	212 N 4th St.	Listed, Individual
7086*	Van Marter building	1921	423 W Beale St.	Listed, Individual NARA 86001150 5/14/1986
7087	I.O.O.F. Building	1912	208 N 5th St.	Listed, Individual
7088	Blakely, Ross H., House	1897	519 E Spring St.	Listed, Individual
7089	Zierner, Charles, House	1898	507 E Oak St.	Listed, Individual
7090	Williams, Ebenezer B., House	1887	513 E Oak St.	Listed, Individual
7091	Lefever House	1900	525 E Oak St.	Listed, Individual
7092	Brown, J. Duff, House	1911	541 E Oak St.	Listed, Individual
7094	Elliott, S. T., House	1917	537 E Spring St.	Listed, Individual
7095	White, Dr. Toler R., House	1916	509 E Spring St.	Listed, Individual
7096	Blakeley, William G., House	1887	503 E Spring St.	Listed, Individual

Property Key No.	Property Name	Date	Street Address (Kingman, AZ 86401)	NRHP Eligibility Recommendation
7098	Anderson, J. Max, House	1927	523 Pine St.	Listed, Individual
7099	Elliott, S. T., House	1917	527 Pine St.	Listed, Individual
7102	Apartment House	1917	218 E Spring St.	Listed, Individual
7105	Little Red School	1896	219 N 4th St.	Listed, Individual
7106	Sullivan, George H., Lodging House	1911	218 E Oak St.	Listed, Individual
7107	Wright, J. B., House	1912	317 E Spring St.	Listed, Individual
7108	No Data	1911	105 E Spring St.	Listed, Individual
7110	Tyrell House Complex	1897	133 E Beale St.	Listed, Individual
7112*	No Data	post-1923	809 Grandview Ave.	Listed, Individual No Additional data
7113	Lovin Investment House	1911–1916	631 E Beale St.	Listed, Individual
7114	Anderson, R. L., House	1915	703 E Beale St.	Listed, Individual
7115	Gates, J. M., House	1915	714 E Oak St.	Listed, Individual
7116	Carr, Raymond, House	1916	620 E Oak St.	Listed, Individual
7117	Kayser, George R., House	1911	604 E Oak St.	Listed, Individual
7118*	Mylius, Frank A., House	post-1923	909 Grandview Ave.	Listed, District Contributor No Additional Data
7119*	Dutton, C. A., House	1923	408 Lead St.	Listed, District Contributor No Additional Data
7120	Casteel, Sarah R., House	1902	132 E Oak St.	Listed, District Contributor
7121	Haskins, D. M., House	1910	104 E Oak St.	Listed, District Contributor
7122	Metcalfe, Charles, Cottage	1900	120 E Spring St.	Listed, District Contributor
7123	Hogan, D. L., House	1913	125 Pine St.	Listed, District Contributor
7124	No Data	1909, 1916	214 E Oak St.	Listed, District Contributor
7126	No Data	1930	515 E Beale St.	Listed, District Contributor
7127*	Sprouse-Reitz Store	1935	409 W Beale St.	Listed, District Contributor No Additional Data
7128	No Data	1890	226 Topeka St.	Listed, District Contributor
7129	No Data	1918	511 Park St.	Listed, District Contributor
7130	Sweeney's Rooming House	1901, 1910	405 Park St.	Listed, District Contributor
7131	Sweeney's Boarding House	1910	118 S 4th St.	Listed, District Contributor
7132	Sweeney's Rooming House	1901, 1910	409 Park St.	Listed, District Contributor
7133	No Data	pre-1901	116 S 4th St.	Listed, District Contributor
7134	No Data	1910	616 E Beale St.	Listed, District Contributor
7135	910 Madison	pre-1916	910 Madison St.	Listed, District Contributor
7136	No Data	1916	921 Center St.	Listed, District Contributor

Property Key No.	Property Name	Date	Street Address (Kingman, AZ 86401)	NRHP Eligibility Recommendation
22449	Black, Arthur F., House	1919/1933	707 Cerbat Ave.	Listed, District Contributor
36974	Mobil Gas Station	1936	201 E Andy Devine Ave.	No Data

***Bold** Property Key Numbers are Historic structures located along the Stockton Hill Avenue/High School Stormdrain (1.4).



**Kingman Area Drainage Master Plan
Cultural Resources Archival Review**

EnviroSystems Project No. 2049-20

Figure 1. Survey areas and previous projects within 1 mile.



1:80,000

Legend

- JE Fuller survey area
- Previous projects
- State
- BLM
- Private

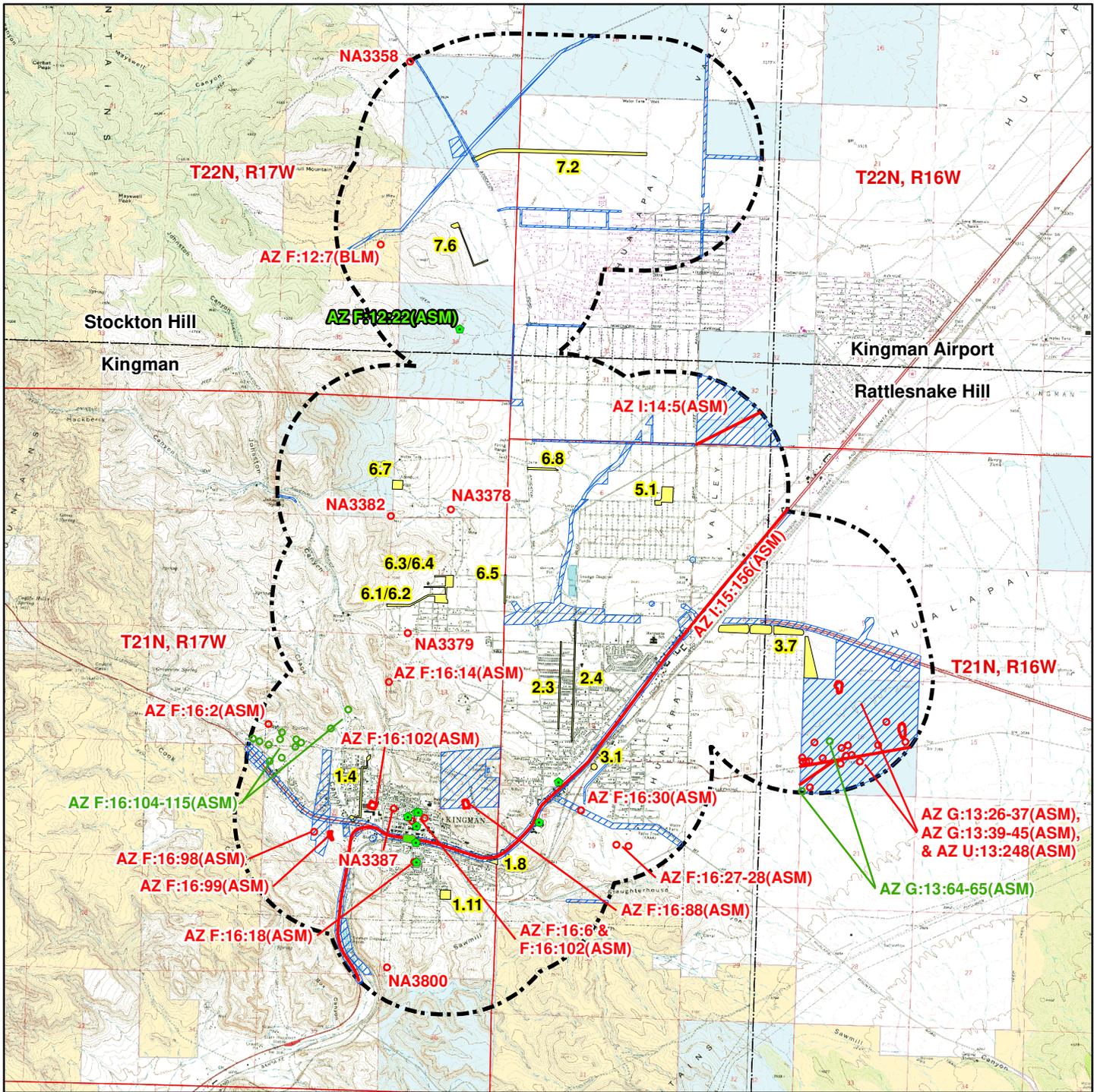


0 1 2 Miles

0 1 2 Kilometers

Base maps are AZ (all 1968),
USGS 7.5' quadrangles.





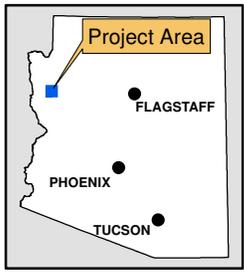
**Kingman Area Drainage Master Plan
Cultural Resources Archival Review**

EnviroSystems Project No. 2049-20

Figure 2. Survey areas and previous sites within 1 mile.

Legend

JE Fuller survey area	Advanced site
Previous projects	SHPO County site
Kingman Commercial Historic District	State
Site	BLM
	Private



Base maps are AZ (all 1968),
USGS 7.5' quadrangles.





**Kingman Area Drainage Master Plan
Cultural Resources Archival Review**

EnviroSystems Project No. 2049-20

Figure 3. Historic district and historic structures near JE Fuller survey area 1.4.



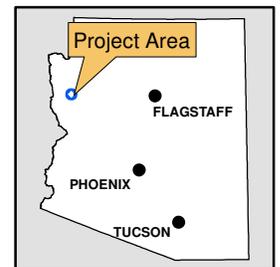
1:24,000

0 0.25 0.5 Miles

0 0.25 0.5 Kilometers

Legend

- JE Fuller survey area
- Historic district
- Selected historic structure
- BLM
- Private



Base map is Kingman, AZ (1968),
USGS 7.5' quadrangle.



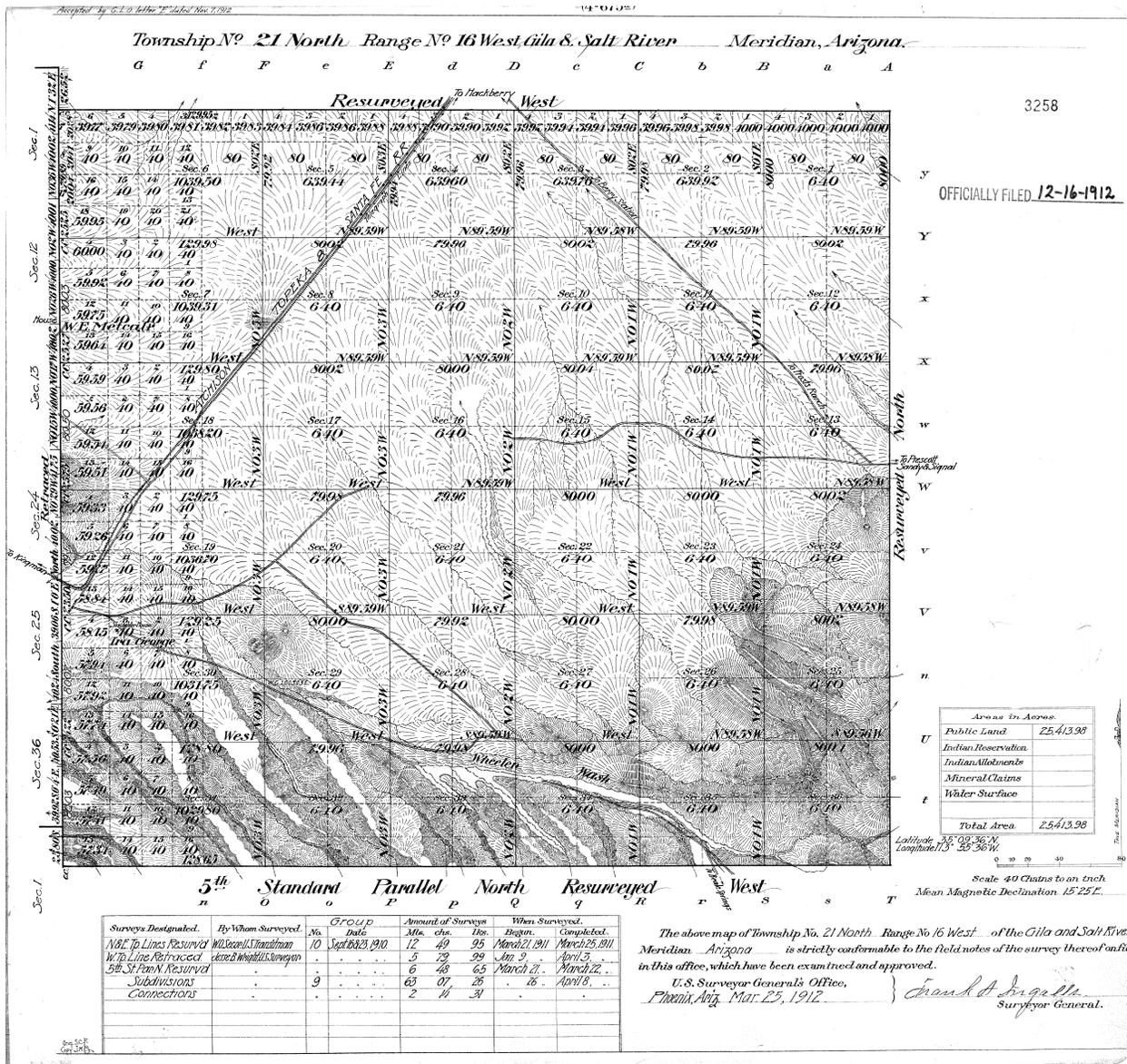
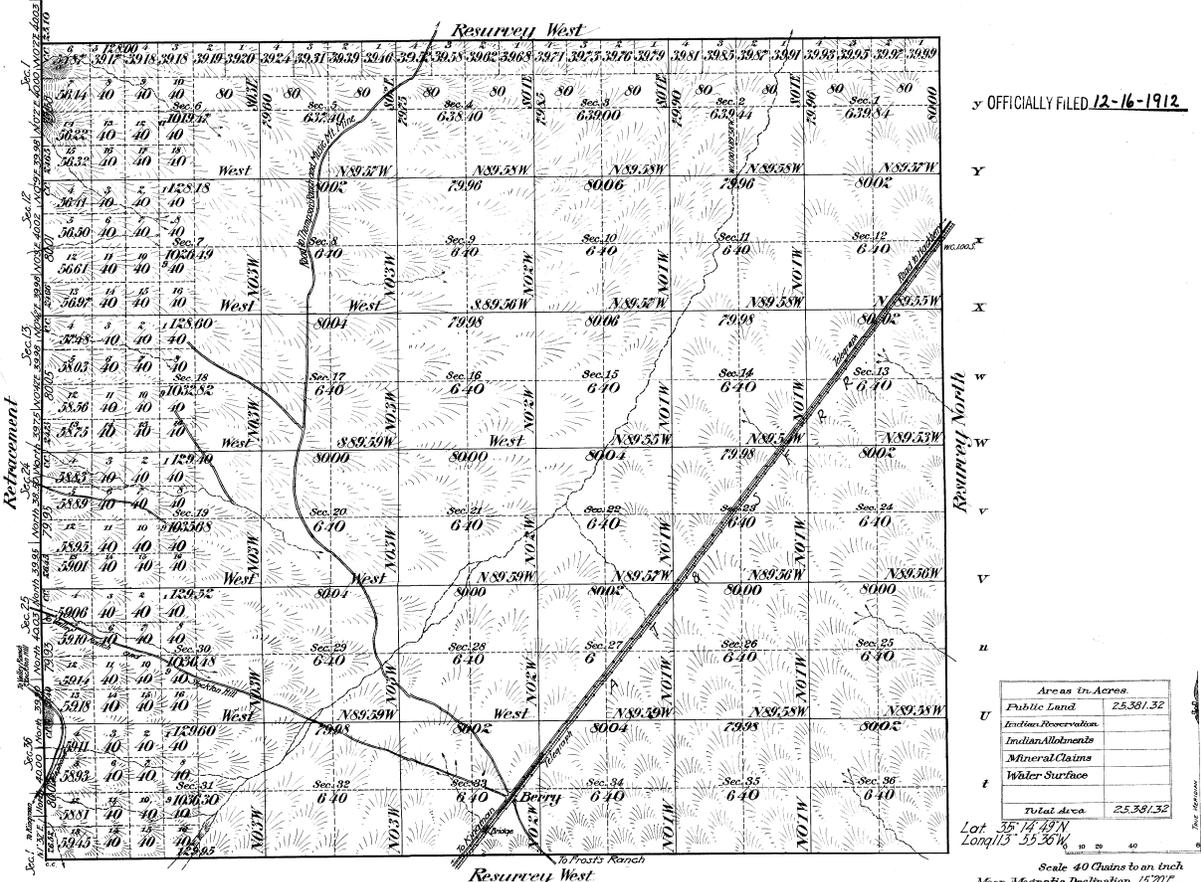


Figure 4. GLO map for Township 21 North, Range 16 West, filed December 16, 1912.

Township No 22 North Range No 16 West Gila & Salt River Meridian, Arizona

3284



OFFICIALLY FILED 12-16-1912

Areas in Acres.	
Public Land	25,381.32
Indian Reservation	
Indian Allotments	
Mineral Claims	
Water Surface	
Total Area	25,381.32

Lat. 35° 14' 49" N Long. 113° 35' 36" W

Scale 40 Chains to an inch Mean Magnetic Declination 15° 20'

Surveys Designated.	By Whom Surveyed.	Group No.	Amount of Surveys			When Surveyed.	
			Mis.	Chs.	Dis.	Begin.	Completed.
N. S. & C. Adm. Res.	Jesse B. Whipple	10	19	17	25	Mar. 24	Apr. 4, 1911
Water Ref.		9	5	79	54	Apr. 4, 1911	
Subdivisions			63	04	60		9-15
Connections			2	18	33		

The above map of Township No. 22 North, Range No. 16 West of the Gila & Salt River Meridian, Arizona is strictly conformable to the field notes of the survey thereof and in this office, which have been examined and approved.

U. S. Surveyor General's Office,
 PHOENIX, ARIZONA, Mar. 25, 1912

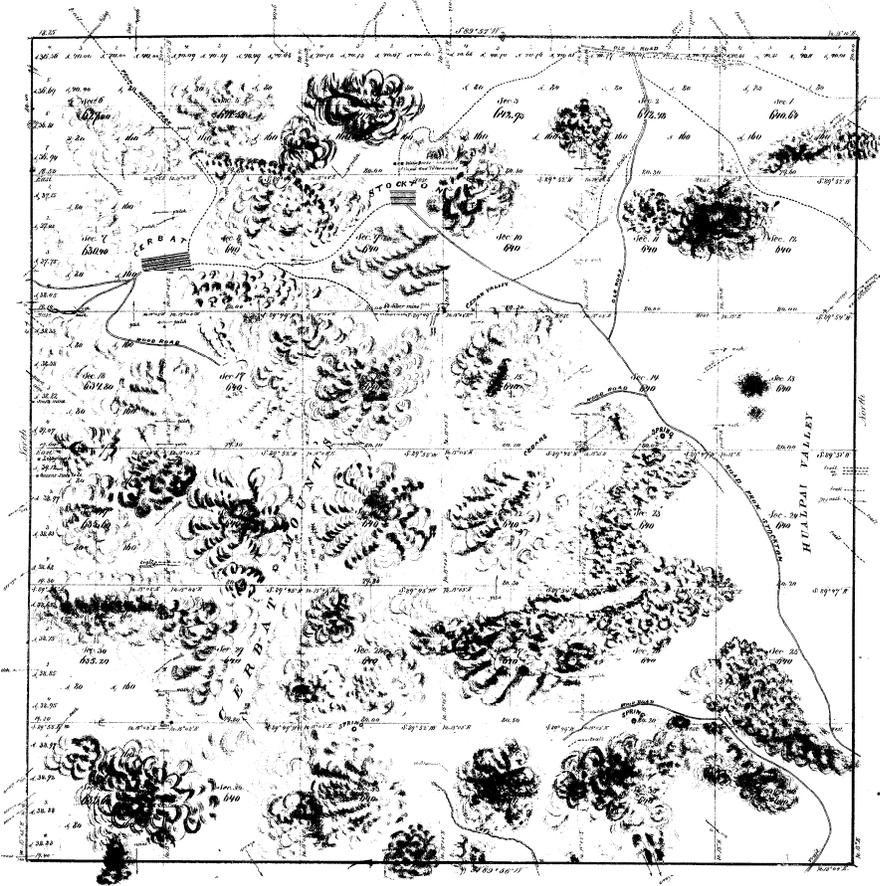
Charles J. Sigalla
 Surveyor General.

Figure 5. GLO map for Township 22 North, Range 16 West, filed December 16, 1912.

TOWNSHIP N^o 22 NORTH RANGE N^o 17 WEST GILA AND SALT RIVER MERIDIAN

3288

OFFICIALLY FILED 8-6-1874



Aggregate Area of Public Lands Surveyed 230000.00 Acres

Survey	By whom Surveyed	Date of Survey	Amount of Survey	When Surveyed
Township Lines	D. F. Case	July 29 th 1872	4 16 00	Aug ^r 11 th 1872
Subdivisions	C. Paulsen Foster	August 5 th 1873	50 78 00	July 16 th 24 th 1874

The above Map of Township 22 North of Range 17 West of the Gila and Salt River Meridians and Division is correct, comprehensive in the field work of the United States Survey as the agent which have been transmitted to approval.

Surveyor General's Office
Tucson, Arizona
11/17 20th 1874
Chas. G. Hunt

Figure 6. GLO map for Township 22 North, Range 17 West, filed August 6, 1874.

TOWNSHIP 22 NORTH, RANGE 17 WEST, GILA AND SALT RIVER MERIDIAN, ARIZONA.

DEPENDENT RESURVEY

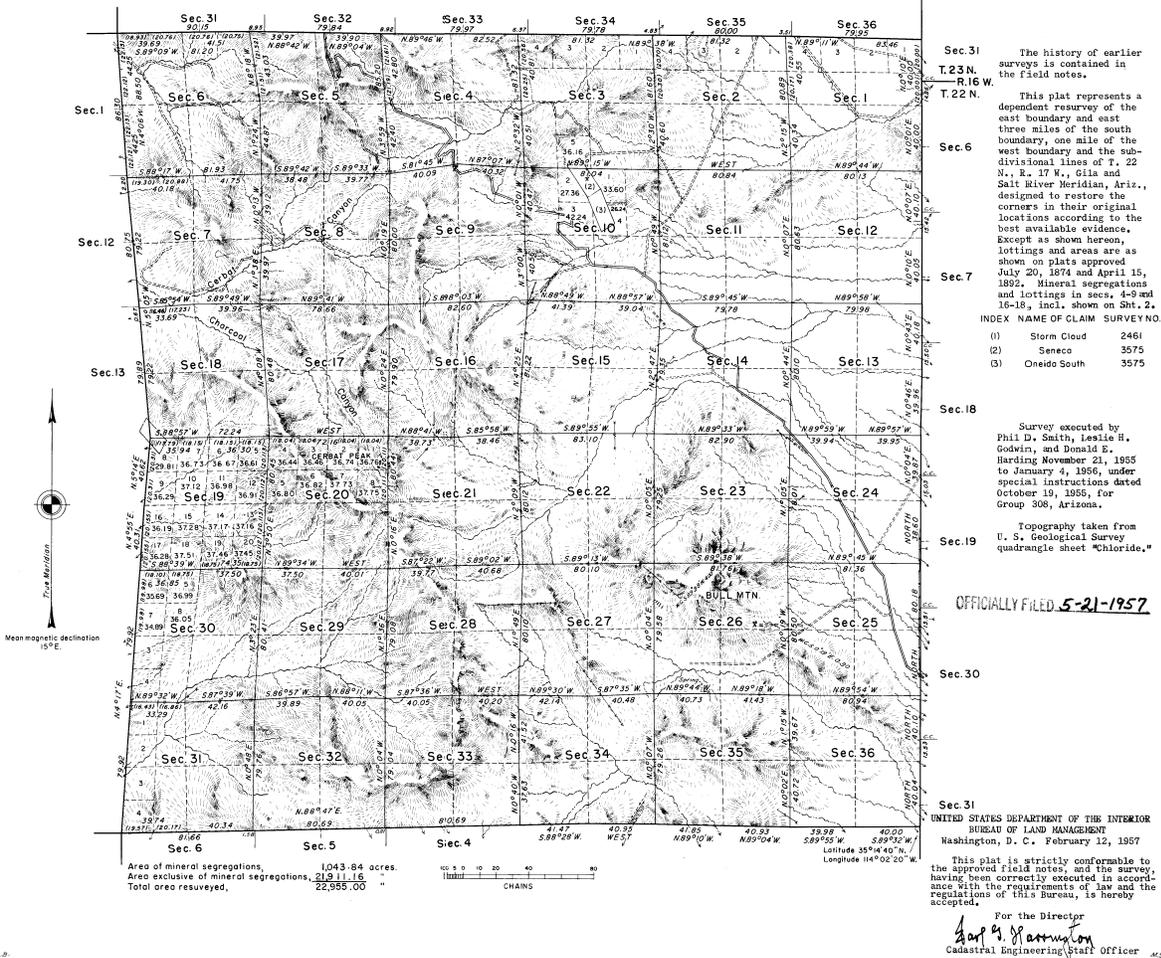


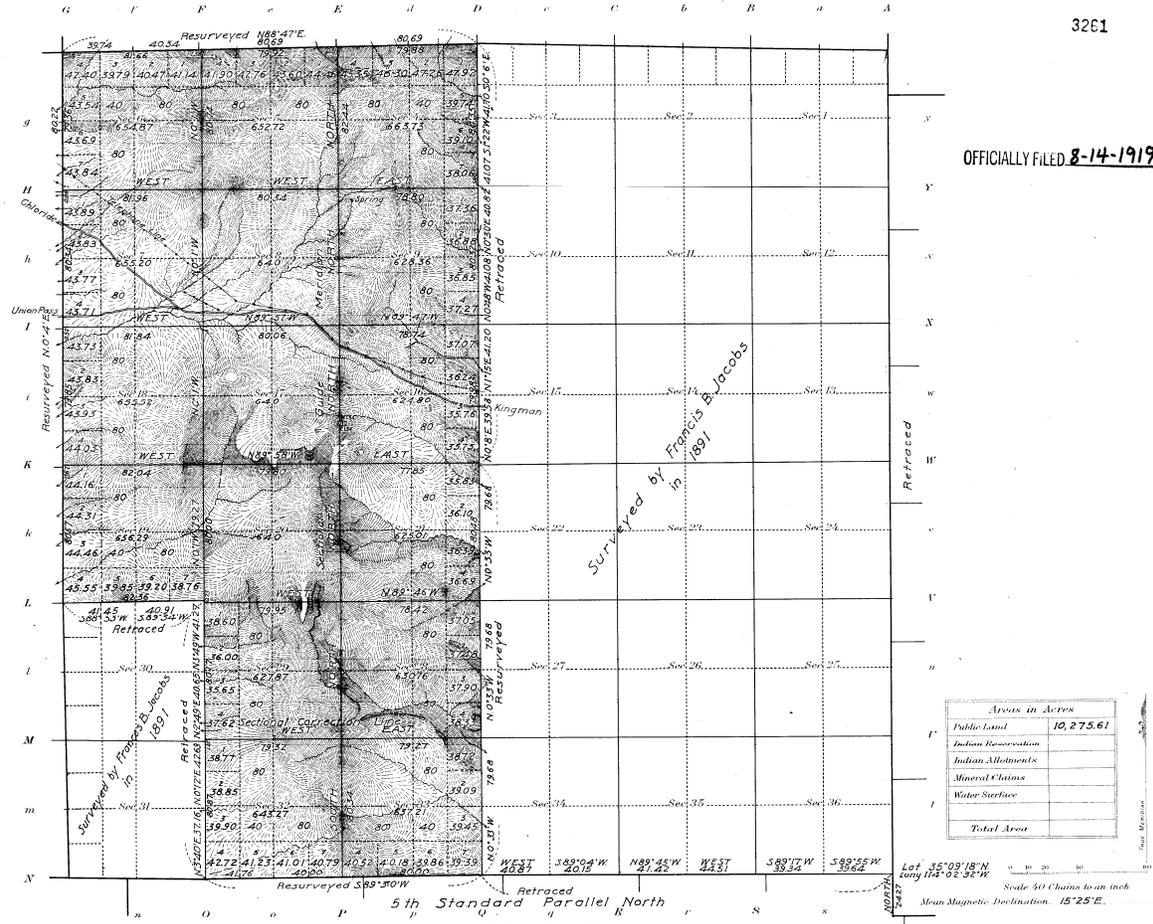
Figure 7. GLO map for Township 22 North, Range 17 West, filed May 21, 1957.

Supplemental Plot of
 Township No. 21 North Range No. 17 West, Gila and Salt River Meridian, Arizona.

Survey accepted April 15, 1919 - G.L.O.

3261

OFFICIALLY FILED 8-14-1919



Areas in Acres	
Public Land	10,275.61
Indian Reservations	
Indian Allotments	
Mineral Claims	
Water Surface	
Total Area	

Surveys Designated	By Whom Surveyed	Group	Amount of Surveys			When Surveyed	
			Sec.	Acres	Sta.	Began	Completed
5th Std. Par. N. Resur.		44	Jan 6, 1915	5 of secs 32 and 33		Feb 8, 1915	
N. bdy Resur.	Thos O. Johnston U.S.	"	"	N. " 4, 5 and 6		Feb 13, 15,	"
Subdivisions Ret.	Edward Glyman U.S.	"	"	W of secs 15, 16, 30, 31 & 32		" 5-13,	"
" Resur.		"	"	W of secs 22, 27 & 34		" 5-6,	"
"		"	"	16 secs as shown		" 8-15,	"
E. bdy Retraced	Jesse B. Wright U.S.	10	Sept 16, 1910	Complete		Jan 9,	April 3, 1911.
W "	Frank W. Rusk U.S.	10	Mar. 10, 1909	"		" 28	" 29, 1910
5th Std. Par. N. Ret.	Howard G. Mason U.S. and Mary H. Coffin Jr. U.S.	34-35-36		under current Group No. 46			
E. & W. bdy Resur.	5th Std. Par. N. Resur. S of Sec. 31, Subdivisions (22 secs) surveyed by Francis B. Jacobs, U.S.S. under Com'l Order May 25, 1891.						

Supplemental
 The above map of Township No. 21 North Range No. 17 West of the Gila and Salt River Meridian Arizona is strictly conformable to the field notes of the survey thereof on file in this office, which have been examined and approved
 U.S. Surveyor General's Office.
 Phoenix, Arizona December 24, 1917.

Frank C. Smith
 Surveyor General.

Figure 8. GLO map for Township 21 North, Range 17 West, filed August 14, 1919.