

**Draft WASTEWATER COLLECTION SYSTEM, PHASES A THROUGH E
BIOLOGICAL RESOURCES ASSESSMENT**



CITY OF TWENTYNINE PALMS, SAN BERNARDINO COUNTY, CALIFORNIA

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1.0 INTRODUCTION

WSP USA Environment & Infrastructure, Inc. (WSP) was contracted by Terra Nova Planning and Research to conduct a biological resources assessment at the site of Phases A through E of a proposed wastewater collection system project (project) in Twentynine Palms, San Bernardino County, California. This biological resources assessment report (BRAR) provides methods, results, and discussion of the assessment.

1.1 Project Location and Topography

The project is entirely within the City of Twentynine Palms, San Bernardino County, California (see Figure 1). It is located primarily on the 7.5-minute Twentynine Palms, Calif. United States Geological Survey (USGS) quadrangle extending slightly south into the Queen Mountain, Calif. USGS quadrangle. It is in Township 1 North, Range 9 East, in portions of Sections 14-16, 21-22, 27-30, 32 and 33 (see Figure 2). The southernmost end of the permanent pumping line appears to extend slightly into Township 1 South, Range 9 East, Section 4. Project topography is roughly level overall. Elevations range from approximately 1,765 feet (538 meters) in the northeast to 2,185 feet (666 meters) in the west. The land within the study area generally slopes from the southwest to the northeast (NV5 2022).

1.2 Project Description

The project includes the following elements:

Gravity Sewer Pipelines:

- Phase 1A: 60,100 feet (11.4 miles)
- Phase 1B: 12,200 feet (2.3 miles)
- Phase 1C: 26,800 feet (5.1 miles)
- Phase 1D: 15,200 feet (2.9 miles)
- Phase 1E: 27,200 feet (5.1 miles)
- **Total: 141,500 feet (26.8 miles)**

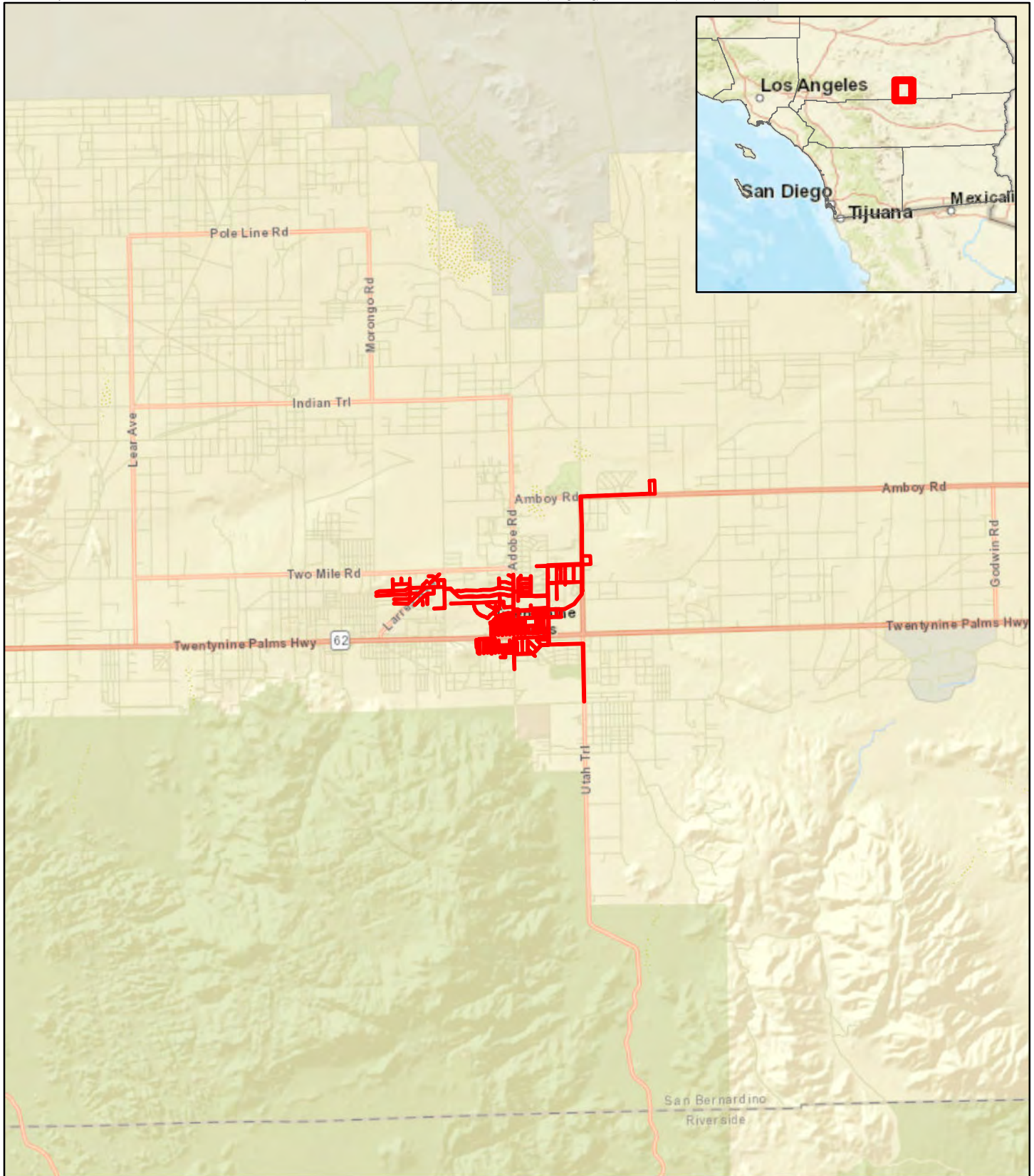
Sewer Laterals/Properties Served:

- Phase 1A: 651
- Phase 1B: 105
- Phase 1C: 264
- Phase 1D: 75
- Phase 1E: 333
- **Total: 1,428**

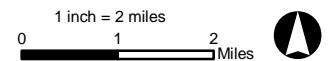
Lift Stations and Force Mains:

- Phase 1D lift station
- Phase 1D force main: 3,700 feet (0.7 miles)

A wastewater treatment plant (WWTP) and an influent lift station for it are also included. See Figure 3 for a project overview.



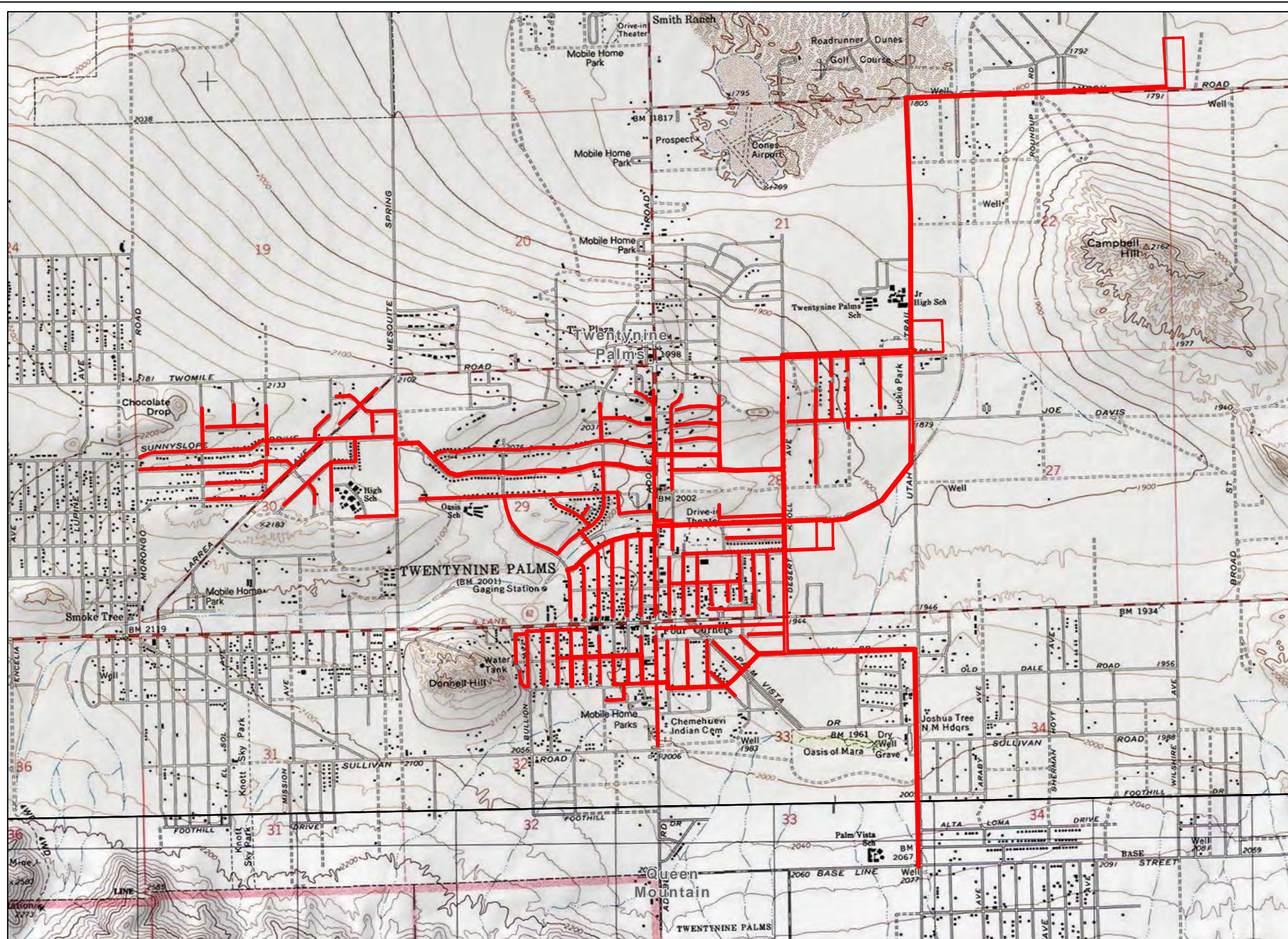
Path: \\sdg1-fs1\gis\3554_NaturalResources\TerraNova_29Palms_SewerLine_322520122\MXD\ReportFigures\BRAR_Dec2022\Fig1_Regional.mxd, aaron.johnson 1/23/2023



 Project Area

FIGURE 1
Regional Vicinity
Twentynine Palms Sanitation
Sewer Trunk Line Project
Twentynine Palms, CA

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 Project Area



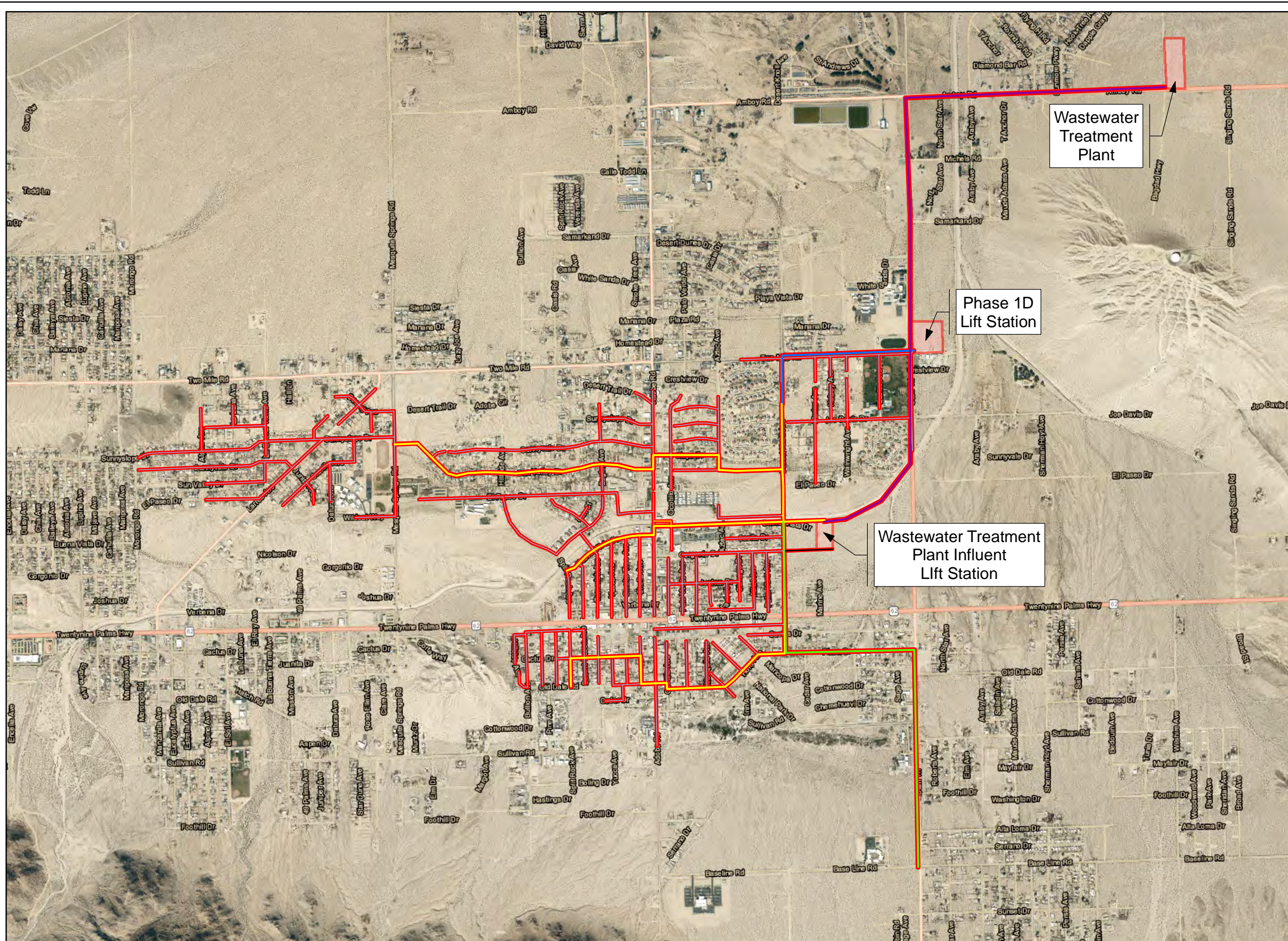
1 inch = 2,000 feet
 0 2,000 Feet

FIGURE 2
 USGS 7.5" Topo Quad:
 Twentynine Palms Sanitation
 Sewer Trunk Line Project
 Twentynine Palms, CA



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- Project Area
- Proposed Features**
- Access Road
- Alternate Alignment
- Collector
- Force Main
- Permanent Pumping
- Temp Effluent
- Trunk
- Proposed Facilities

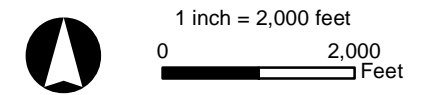


FIGURE 3
 Site Overview
 Twentynine Palms Sanitation
 Sewer Trunk Line Project
 Twentynine Palms, CA



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 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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2.0 REGULATORY FRAMEWORK

2.1 Federal

Endangered Species Act (ESA) – The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service are the designated federal agencies accountable for administering the ESA. The ESA defines species as “endangered” or “threatened” and provides regulatory protection at the federal level.

- Section 9 of the ESA prohibits the “take” of listed (i.e., endangered or threatened) species. The ESA definition of take is “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct.” Recognizing that take cannot always be avoided, Section 10(a) includes provisions for take that is incidental to, but not the purpose of, otherwise lawful activities. Specifically, Section 10(a) (1) (A) permits (authorized take permits) are issued for scientific purposes. Section 10(a) (1) (B) permits (incidental take permits) are issued for the incidental take of listed species that does not jeopardize the species.
- Section 7 (a) (2) requires federal agencies to evaluate the proposed project with respect to listed or proposed listed, species and their respective critical habitats (if applicable). Federal agencies must employ programs for the conservation of listed species and are prohibited from authorizing, funding, or carrying out any action that would jeopardize a listed species or destroy or modify its “critical habitat.”

As defined by the ESA, “individuals, organizations, states, local governments, and other non-federal entities are affected by the designation of critical habitat only if their actions occur on federal lands, require a federal permit, license, or other authorization, or involve federal funding.

Migratory Bird Treaty Act (MBTA) – Treaties signed by the U.S., Great Britain, Mexico, Japan, and the republics of the former Soviet Union make it unlawful to pursue, capture, kill, and/or possess, or attempt to engage in any such conduct to any migratory bird, nest, egg or parts thereof listed in this document. As with the ESA, the MBTA also allows the Secretary of the Interior to grant permits for the incidental take of these protected migratory bird species. Impacts include direct disturbance to/destruction of nests, eggs, and birds as well as indirect effects such as loud construction noises (e.g., drilling, operation of heavy equipment, etc. in excess of 60 dB at the nest site) and increased site activities (e.g., moving vehicles, use of guard dogs, presence of personnel) in close proximity to active nests.

National Environmental Policy Act (NEPA) – Portions of the proposed project could fall under the jurisdiction of a federal agency (i.e., U.S. Army Corps of Engineers). The NEPA establishes certain criteria that must be adhered to for any project that is “financed, assisted, conducted or approved by a federal agency. The federal lead agency is required to “determine whether the proposed action will significantly affect the quality of the human environment.”

Section 404 of the Clean Water Act (CWA) – This section of the CWA, administered by the U.S. Army Corps of Engineers (USACE), regulates the discharge of dredged and fill material into “waters of the United States.” The USACE has created a series of nationwide permits that authorize certain activities within waters of the U.S. provided that the proposed activity does not exceed the impact threshold for each of the permits, takes steps to avoid impacts to wetlands where practicable, minimize potential impacts to wetlands, and provide compensation for any remaining, unavoidable impacts through activities to restore or create wetlands. For projects that exceed the threshold for nationwide permits, individual permits under Section 404 can be issued.

2.2 State of California

Regional Water Quality Control Board – The Regional Water Quality Control Board (RWQCB) regulates activities pursuant to Section 401(a)(1) of the CWA. Section 401 of the CWA specifies that certification from the State is required for any applicant requesting a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities that may result in any discharge into navigable waters. Through the Porter Cologne Water Quality Control Act, the RWQCB asserts jurisdiction over Waters of the State of California (WSC) which is generally the same as WUS, but may also include isolated waterbodies. The Porter Cologne Act defines WSC as “surface water or ground water, including saline waters, within the boundaries of the state”.

Sections 1600-1603 of the State Fish and Game Code – The California Fish and Game Code, pursuant to Sections 1600 through 1603, regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife resources. Under state code, a stream is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel with hydro geomorphology distinct top-of-embankment to top-of-embankment limits, that may or may not support fish or other aquatic biota. Included in this definition are watercourses with surface or subsurface flows that support, or have supported in the past, riparian vegetation. Specifically, Section 1601 governs public projects, while Section 1603 governs private discretionary actions. The California Department of Fish and Wildlife (CDFW) requires that public and private interests apply for a “Streambed Alteration Agreement” for any project that may impact a streambed or wetland. The CDFW has maintained a “no net loss” policy regarding impacts to streams and waterways and requires replacement of lost habitats of at least a 1:1 ratio.

California Endangered Species Act (CESA) – This legislation is similar to the federal ESA, however it is administered by the CDFW. The CDFW is authorized to enter into “memoranda of understanding” with individuals, public agencies, and other institutions to import, export, take, or possess state-listed species for scientific, educational, or management purposes. The CESA prohibits the take of state-listed species except as otherwise provided in state law. Unlike the federal ESA, the CESA applies the take prohibitions to species currently petitioned for state-listing

status (candidate species). State lead agencies are required to consult with the CDFW to ensure that actions are not likely to jeopardize the continued existence of any state-listed species or result in the destruction or degradation of occupied habitat.

Section 2081 of the State Fish and Game Code – Under Section 2081 of the California Fish and Game Code, the CDFW authorizes individuals or public agencies to import, export, take, or possess state endangered, threatened, or candidate species in California through permits or memoranda of understanding. These acts, which are otherwise prohibited, may be authorized through permits or “memoranda of understanding” if (1) the take is incidental to otherwise lawful activities, (2) impacts of the take are minimized and fully mitigated, (3) the permit is consistent with regulations adopted in accordance with any recovery plan for the species in question, and (4) the applicant ensures suitable funding to implement the measures required by the CDFW. The CDFW shall make this determination based on the best scientific information available and shall include consideration of the species’ capability to survive and reproduce.

California Environmental Quality Act (CEQA) – The basic goal of the CEQA is to retain a high-quality environment now and in the future. The specific goals are for California's public agencies to:

- Identify the significant environmental effects of their actions; and, either
- Avoid those significant environmental effects, where feasible; or
- Mitigate those significant environmental effects, where feasible.

The CEQA applies to "projects" proposed to be undertaken or requiring approval by State and/or local governmental agencies. projects are activities which have the potential to have a physical impact on the environment and may include the enactment of zoning ordinances, the issuance of conditional use permits and the approval of tentative subdivision maps. Where a project requires approvals from more than one public agency, the CEQA requires one of these public agencies to serve as the "lead agency."

A "lead agency" must complete the environmental review process required by the CEQA. The most basic steps of the environmental review process are:

- Determine if the activity is a "project" subject to the CEQA;
- Determine if the "project" is exempt from the CEQA;
- Perform an Initial Study to identify the environmental impacts of the project and determine whether the identified impacts are "significant". Based on its findings of "significance", the lead agency prepares one of the following environmental review documents:
 - Negative Declaration if it finds no "significant" impacts;

- Mitigated Negative Declaration if it finds "significant" impacts but revises the project to avoid or mitigate those significant impacts;
- Environmental Impact Report (EIR) if it finds "significant" impacts.

While there is no ironclad definition of "significance", Article 5 of the CEQA Guidelines provides criteria to lead agencies in determining whether a project may have significant effects.

The purpose of an EIR is to provide state and local agencies and the public with detailed information on the potentially significant environmental effects which a proposed project is likely to have and to provide ways in which those effects may be minimized and indicate alternatives to the project.

Sections of the State Fish and Game Code pertaining to the protection of birds – Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3505.5 makes it unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds-of-prey, i.e.: owls, hawks, eagles, etc.) or to take, possess, or destroy the nest or eggs of any bird-of-prey. Section 3513 makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA.

The Native Plant Protection Act (NPPA) – The NPPA includes measures to preserve, protect, and enhance rare and endangered native plant species. Definitions for "rare and endangered" are different from those contained in the CESA. However, the list of species afforded protection in accordance with the NPPA includes those listed as rare and endangered under the CESA. The NPPA provides limitations on take as follows: "no person will import into this state, or take, possess, or sell within this state" any rare or endangered native plants, except in accordance with the provisions outlined in the act. If a landowner is notified by the CDFW, pursuant to section 1903.5 that a rare or endangered plant species is growing on their property, the landowner shall notify the CDFW at least 10 days prior to the changing of land uses to allow the CDFW to salvage the plants.

3.0 METHODS

3.1 Literature Review and Records Search

A literature review and record search were conducted to identify occurrences of special status biological resources in the project vicinity. The review included:

- A report from the CDFW's California Natural Diversity Data Base (CNDDDB) for a five-mile radius of the project site (CDFW 2022),
- The California Native Plant Society (CNPS) including records from the following California USGS 7.5-minute topographic quadrangles within five miles of the project: 29 Palms, Queen Mountain, Sunfair, Indian Cove, 29 Palms Mountain, and Valley Mountain (CNPS 2022),
- The USFWS (2022a) Environmental Conservation Online System (ECOS) including critical habitat mapping and an Information for Planning and Consultation (IPaC) report.
- Aerial photographs, and
- Pertinent documents from the WSP library and project files (e.g., other biological surveys from the general vicinity).

3.2 Biological Resources Assessment

Multiple biological surveys were already conducted for a previous iteration of this project (Wood 2023, 2022a – 2022d), therefore little reconnaissance was needed. Necessary surveys of new areas were thus conducted as soon as possible. Focused desert tortoise (*Gopherus agassizii*) surveys and burrowing owl (*Athene cunicularia*) burrow surveys were conducted in appropriate habitat of all new areas from 12-15 December 2022 by WSP biologists John F. Green, Tim Chumley, Nathan Moorhatch, Michael Wilcox, Melanie Bukovac, and/or Phil Clevinger. Vegetation mapping of new areas was performed by Green on 21 December 2022. Green drove the alignments, stopping and walking as necessary, to identify habitats, dominant plant species, and wildlife. Plant and animal species, especially any not previously recorded, were recorded in field notes during all surveys. All observations were recorded in field notes. Representative photos were taken and are included in Appendix C.

4.0 RESULTS

4.1 Literature Review

The results of the literature review are presented in Tables 1 and 2, along with the results of focused surveys conducted to date. Species which are not known to occur at project elevations are not included.

Table 1. Special Status Plants & Vegetation Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status ¹			Habitat (for plants includes elevational range in meters & blooming period)	Occurrence Probability ²
		Federal	State	CRPR		
Plants						
<i>Ayenia compacta</i>	California ayenia	None	S3	2B.3	Mojavean & Sonoran desert scrub, rocky. 150 - 1095 meters (m). Blooms (B): March - April.	Low-Absent Not found by 2022 focused surveys in prior project areas. Will be surveyed for in new areas in April 2023.
<i>Calochortus striatus</i>	alkali mariposa-lily	None	S2S3	1B.2	Chaparral, chenopod scrub, meadows and seeps, Mojavean desert scrub, alkaline, mesic. 70 – 1595 m. B: April – June.	Low-Absent Not found by 2022 focused surveys in prior project areas. Will be surveyed for in new areas in April 2023. CNDDDB records on project site.
<i>Coryphantha alversonii</i>	Alverson's foxtail cactus	None	S3	4.3	Mojavean and Sonoran desert scrub, usually in granitic areas, sometimes rocky or sandy. 75 – 1525 m. B: April – June (September - October).	Low Not seen during December 2022 surveys, but many found just southwest of current project area during spring 2022 focused surveys. Will be surveyed for in new areas in April 2023.
<i>Eschscholzia androuxii</i>	Joshua tree poppy	None	S3	4.3	Joshua tree "woodland", Mojavean desert scrub on flats, gravelly, rocky, sandy, slopes, washes. 585 – 1685 m. B: February -May (June).	Low-Absent Not found by 2022 focused surveys in prior project areas. Will be surveyed for in new areas in April 2023.
<i>Funastrum utahense</i>	Utah vine milkweed	None	S4	4.2	Mojavean and Sonoran desert scrub, sometimes in gravelly or sandy. 100 - 1435 m. B: (March) April - June (September - October).	Occurs Found during 2022 focused surveys. Will be surveyed for in new areas in April 2023.

Table 1. Special Status Plants & Vegetation Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status¹			Habitat (for plants includes elevational range in meters & blooming period)	Occurrence Probability²
		Federal	State	CRPR		
<i>Galium angustifolium</i> ssp. <i>gracillimum</i>	slender bedstraw	None	S4	4.2	Joshua tree "woodland" and Sonoran desert scrub in granitic or rocky places. 130 - 1550 m. B: April -June (July).	Low-Absent Not found by 2022 focused surveys in prior project areas. Will be surveyed for in new areas in April 2023.
<i>Grusonia parishii</i>	Parish's club-cholla	None	S2	2B2	Mojavean and Sonoran desert scrub, Joshua tree "woodland" in sandy or rocky locations. 300-1,524m. B: May-July.	Low-Absent Not found by 2022 focused surveys in prior project areas. Will be surveyed for in new areas in June 2023.
<i>Jaffuelobryum raii</i>	Rau's jaffuelobryum moss	None	S2	2B.3	Alpine dwarf scrub, chaparral, & Mojavean and Sonoran desert scrub. Known from dry places, carbonate, openings, and rock crevices. 490 - 2100 m.	Low-Absent Not found by 2022 focused surveys in prior project areas. Will be surveyed for in new areas in April 2023.
<i>Jaffuelobryum wrightii</i>	Wright's jaffuelobryum moss	None	S2S3	2B.3	Chaparral, Mojavean & Sonoran desert scrub, Alpine dwarf scrub. Openings: dry places, rock crevices, carbonate. 160-2500 m.	Low-Absent Not found by 2022 focused surveys in prior project areas. Will be surveyed for in new areas in April 2023.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	None	S2	1B.1	Marshes and swamps, playas, vernal pools. 1 - 1220 m. B: February - June.	Low-Absent Not found by 2022 focused surveys in prior project areas. Will be surveyed for in new areas in April 2023. CNDDDB records on project site.
<i>Linanthus maculatus</i> ssp. <i>maculatus</i>	Little San Bernardino Mountains linanthus	None	S2	1B.2	Desert dunes, Sonoran and Mojavean desert scrub, Joshua tree "woodland." Sandy places. Usually in light-colored quartz sand; often in wash or bajada. 140 - 1220 m. B: March-May	Low-Absent Not found by 2022 focused surveys in prior project areas. Will be surveyed for in new areas in April 2023.
<i>Matelea parvifolia</i>	spear-leaf matelea	None	S3	2B.3	Rocky places in Mojavean and Sonoran desert scrub. 440 - 1095 m. B: March -May (July).	Low-Absent Not found by 2022 focused surveys in prior project areas. Will be surveyed for in new areas in April 2023.

Table 1. Special Status Plants & Vegetation Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status¹			Habitat (for plants includes elevational range in meters & blooming period)	Occurrence Probability²
		Federal	State	CRPR		
<i>Monardella robisonii</i>	Robison's monardella	None	S3	1B.3	Pinyon-juniper woodland. 610 -1,500 m., B: (February) April – September (October).	Absent. No suitable habitat.
<i>Muhlenbergia appressa</i>	appressed muhly	None	S3	2B.2	Coastal scrub, Mojavean desert scrub, valley and foothill grassland in rocky places. 20 - 1600 m. B: April - May.	Low-Absent Not found by 2022 focused surveys in prior project areas. Will be surveyed for in new areas in April 2023.
<i>Penstemon thurberi</i>	Thurber's beardtongue	None	S3	4.2	Chaparral, Joshua tree "woodland", Sonoran desert scrub, Pinyon-juniper woodland. 500 - 1220 m. B: May-July.	Low-Absent Not found by 2022 focused surveys in prior project areas. Will be surveyed for in new areas in June 2023.
<i>Saltugilia latimeri</i>	Latimer's woodland-gilia	None	S3	1B.2	Chaparral, Mojavean desert scrub, pinyon-juniper woodland. 400-1,900m. B: March-June	Low-Absent Not found by 2022 focused surveys in prior project areas. Will be surveyed for in new areas in April 2023.
<i>Sidalcea neomexicana</i>	salt spring checkerbloom	None	S2	2B.2	Chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, playas. 15 - 1530 m. B: March - June.	Low-Absent Not found by 2022 focused surveys in prior project areas. Will be surveyed for in new areas in April 2023. CNDDDB records on project site.
<i>Tetracoccus hallii</i>	Hall's tetracoccus	None	S4	4.3	Mojavean and Sonoran desert scrub. 30 - 1200 m. B: January - May.	Low-Absent Not found by 2022 focused surveys in prior project areas. Will be surveyed for in new areas in April 2023.
<i>Wislizenia refracta</i> ssp. <i>refracta</i>	jackass-clover	None	S1	2B.2	Desert dunes, playas, Mojavean and Sonoran desert scrub. 600 - 800 m. B: April - November.	Low-Absent Not found by 2022 focused surveys in prior project areas. Will be surveyed for in new areas in April 2023.
<i>Yucca brevifolia</i>	western Joshua tree	None	SCT	None	Mojavean desert scrub, Joshua tree "woodland."	Absent Not found during any survey.
Vegetation Communities						
Desert Fan Palm Oasis Woodland	Not applicable (N/A)	N/A	S3.2	N/A	N/A	Absent Landscaping palms & their seedlings seen, but no palm oasis within the project area.

Table 2. Special Status Wildlife Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status ¹			Habitat	Occurrence Probability ²
		Federal	State	Other		
Invertebrates						
<i>Danaus plexippus</i>	Monarch	FC	S2S3	N/A	Western winter roost sites primarily occur along the coast from northern Mendocino to Baja California, Mexico, located in wind-protected tree groves (<i>Eucalyptus</i> species, Monterey pine (<i>Pinus radiata</i>), cypress), with nectar and water sources nearby. During breeding season, adults widespread but scarce in the desert. Larvae require milkweed.	Low Seldom seen in the desert, but milkweed is present onsite.
<i>Rhopalolemma robertsi</i>	Roberts' rhopalolemma bee	None	S1	N/A	Roberts' rhopalolemma bee is the only <i>Rhopalolemma</i> species known from California. Only two species are known; the second, <i>R. rotundiceps</i> , was described from Arizona in 1997. The known range of Roberts' rhopalolemma bee is the type locality five miles south of the project area. Despite at least 70 years of collecting in the area by many active solitary bee specialists, the species is only known from a single specimen from that location. Specific habitat information was not recorded for this species when collected. In Arizona, <i>R. rotundiceps</i> was collected and studied in a shallow wash in a creosote-bush scrub, and collected in three other desert localities.	Unknown The genus is known from creosote bush scrub and for feeding on Phacelia, both of which occur onsite, but no specific natural history information is known for this species. Given the long period in which nobody has successfully detected it (since 1973), the possibility of occurrence onsite is expected to be very low.

Table 2. Special Status Wildlife Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status ¹			Habitat	Occurrence Probability ²
		Federal	State	Other		
					<p>Bees in this group (cleptoparasitic Nomadinae) do not excavate their own nests or collect pollen for their larvae. Instead, the females enter the nests of pollen-collecting species and lay their eggs in the open, unfinished cells while the host females are absent. While the host species of Roberts' rhopalolemma bee is unknown, all known host associations for bees in the tribe Biastini, to which <i>Rhopalolemma</i> belongs, involve halictid bees in the subfamily Rhophitinae, so the host of Roberts' rhopalolemma bee is likely a member of that subfamily as well.</p> <p>Adult cleptoparasitic bees take nectar from flowers, but no floral association is known for Roberts' rhopalolemma bee. <i>R. rotundiceps</i> has been taken on <i>Phacelia</i>. (CDFG 2022).</p>	
Reptiles						
<i>Crotalus ruber</i>	red-diamond rattlesnake	None	SC, S3	N/A	<p>Chaparral, woodland, grassland, & desert areas. Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks or surface cover objects.</p>	<p>Low Few natural rocky areas onsite.</p>

Table 2. Special Status Wildlife Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status¹			Habitat	Occurrence Probability²
		Federal	State	Other		
<i>Gopherus agassizii</i>	desert tortoise	FT	ST, S2S3	N/A	Prefers Joshua tree, desert wash & scrub (especially creosote bush) habitats; but in most desert habitats. Large wildflower blooms preferred. Burrows & nests require friable soil.	Absent (in project footprint) Not found by focused surveys but could occur in surrounding area (1990-1991 records to immediate west of project).
Birds						
<i>Accipiter cooperii</i>	Cooper's hawk	MBTA	WL, S4, FGC	N/A	Woodland, chiefly of open, interrupted, or marginal type, including residential areas. Nests in trees.	Occurs Incidentally detected during 2022 surveys. May breed in areas with large trees.
<i>Athene cunicularia</i>	burrowing owl	MBTA, BCC	SC, S3, FGC	N/A	Open, dry grasslands, deserts & scrublands with low-growing vegetation. Depends on burrowing mammals.	Low Not detected during 2022 breeding season survey or December 2022 burrow surveys. New areas will be surveyed in the 2023 breeding season.
<i>Calypte costae</i>	Costa's hummingbird	MBTA, BCC	S4, FGC	N/A	Primary habitats desert wash; edges of desert & valley foothill riparian; coastal, desert, & desert succulent scrub; palm oasis; & low elevation chaparral.	Occurs Incidentally detected during 2022 surveys. Nesting habitat present.
<i>Falco mexicanus</i>	prairie falcon	MBTA, BCC	SC, S3, FGC	N/A	Breeding sites located on cliffs, but forages far afield.	Low No nesting habitat, may forage.
<i>Lanius ludovicianus</i>	loggerhead shrike	MBTA, BCC	SSC, S4, FGC	N/A	Found in open habitats with widely spaced vegetation.	Moderate Nesting and foraging habitat onsite.
<i>Polioptila melanura</i>	black-tailed gnatcatcher	MBTA	WL, S3S4, FGC	N/A	Primarily inhabits wooded desert wash habitats; also occurs in desert scrub habitat, especially in winter.	Occurs Incidentally detected during 2022 surveys. Nesting habitat present.

Table 2. Special Status Wildlife Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status¹			Habitat	Occurrence Probability²
		Federal	State	Other		
<i>Pyrocephalus rubinus</i>	vermillion flycatcher	MBTA	SC, S2S3, FGC	N/A	During nesting, inhabits desert riparian adjacent to irrigated fields, irrigation ditches, pastures, & other open, mesic areas. Nests in cottonwood, willow, mesquite, or other large desert riparian trees.	Occurs Incidentally detected during 2022 surveys. Potential nesting in limited suitable areas such as Luckie Park.
<i>Selasphorus rufus</i>	rufous hummingbird	MBTA, BCC	S1S2, FGC	N/A	Breeds in coniferous forests. Uses riparian areas, open woodlands, chaparral, mountain meadows, and other habitats rich in nectar-producing flowers, including gardens and orchards.	Occurs Incidentally detected during 2022 surveys. Migration only. Does not nest in project area.
<i>Spizella breweri</i>	Brewer's sparrow	MBTA, BCC	S4, FGC	N/A	Many habitats in winter and migration. Breeds east of the crest of the Cascades and Sierra Nevada Mountains, in high valleys of the Mojave Desert, and in mountains at the southern end of the San Joaquin Valley. For nesting they prefer high sagebrush plains, slopes, and valleys with Great Basin sagebrush and antelope brush.	Occurs Incidentally detected during 2022 surveys. Migration/winter only. Does not nest in project area.
LeConte's thrasher	<i>Toxostoma lecontei</i>	MBTA, BCC	S3, FGC	N/A	Primarily utilizes open desert washes, desert scrub, alkali desert scrub, & desert succulent scrub habitats; commonly nests in a dense, spiny shrub or densely branched cactus.	Occurs Incidentally detected during 2022 surveys. Breeding habitat present.
Mammals						
<i>Antrozous pallidus</i>	pallid bat	None	SC, S3	WBWG: H	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting.	Moderate May forage onsite but is unlikely to roost due to few or no possible sites.

Table 2. Special Status Wildlife Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status ¹			Habitat	Occurrence Probability ²
		Federal	State	Other		
<i>Chaetodipus fallax pallidus</i>	pallid San Diego pocket mouse	None	SC, S3S4	N/A	In desert wash, desert scrub, desert succulent scrub, pinyon-juniper, etc. Sandy, herbaceous areas, usually in association with rocks or coarse gravel.	Moderate CNDDDB records on project site.
<i>Euderma maculatum</i>	spotted bat	None	SC, S3	WBWG: H	Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests. Feeds over water & along washes, almost entirely on moths. Needs rock crevices in cliffs or caves for roosting.	Moderate May forage onsite but is unlikely to roost due to few or no possible sites. CNDDDB records on project site.
<i>Lasiurus xanthinus</i>	western yellow bat	None	SC, S3	WBWG: H	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, usually palms. Forages over water and among trees.	Moderate Mature palms and other trees present in project area. CNDDDB records on project site.
<i>Ovis canadensis nelsoni</i>	desert bighorn sheep	None	FP, S3	N/A	Open, rocky, steep areas with water & herbaceous forage.	Absent No suitable habitat.
<i>Taxidea taxus</i>	American badger	None	SC, S3	N/A	Prefers drier, open stages of herbaceous, shrub, & forest habitats. Burrows in friable soils & open, uncultivated ground.	Low Habitat suitable, but few if any potential burrows detected during focused surveys.

¹Status Codes:		
<u>Federal</u>		
FE = Federal Endangered	are unknown).	intensive searches of historical sites and other appropriate
FT = Federal Threatened	• Long-term and short-term trends.	habitat, and virtually no likelihood that it will be rediscovered.
FC = Federal Candidate	<i>S1</i> = Critically Imperiled – At very high risk of extirpation in the state due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.	<i>SH</i> = Possibly Extirpated – Known from only historical records but still some hope of rediscovery. There is evidence that the species may no longer be present in the state, but not enough to state this with certainty.
BCC = Bird of Conservation Concern		<i>SNR</i> = Unranked – State rank not yet assessed.
MBTA = Migratory Bird Treaty Act		<u>California Rare Plant Rank (CRPR)</u>
<u>State</u>		1A = Presumed extirpated in California and either rare or extinct elsewhere
SE = State Endangered	<i>S2</i> = Imperiled – At high risk of extirpation in the state due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.	1B = Rare or Endangered in California and elsewhere
ST = State Threatened	<i>S3</i> = Vulnerable – At moderate risk of extirpation in the state due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.	2A = Presumed extirpated in California, but more common elsewhere
SCT=State Candidate	<i>S4</i> = Apparently Secure – At a fairly low risk of extirpation in the state due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.	2B = Rare or Endangered in California, but more common elsewhere
FP = Fully Protected	<i>S5</i> = Secure – At very low or no risk of extirpation in the state due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.	3 = Plants for which we need more information – Review list
SC = State Species of Concern	<i>SX</i> = Presumed Extirpated – Species is believed to be extirpated from the state.	4 = Plants of limited distribution – Watch list
WL = Watch List		<u>Western Bat Working Group (WBWG)</u>
FGC = Fish & Game Code		The WBWG is composed of agencies, organizations, and individuals interested in bat research, management, and conservation from 13 western states and provinces. The goals of the group are to (1) facilitate communication among interested parties and reduce risks of species decline or extinction; (2) provide a mechanism by which current information on bat ecology, distribution, and research techniques can be readily accessed; and (3) develop a forum to discuss conservation strategies, provide technical assistance, and encourage education programs. Species are ranked as High , Medium , or Low Priority in each of 10 regions in western North America.
The California Natural Diversity Database program is a member of the NatureServe Network of natural heritage programs, and uses the same conservation status methodology as other network programs.		²Occurrence Probability
Elements are ranked using standard criteria and definitions. This standardization makes the ranks comparable between organisms and across political boundaries.		<i>Occurs</i> = Observed on the site by WSP personnel or recorded there by other qualified biologists.
The three main categories that are taken into consideration when assigning an element rank are rarity, threats, and trends. Within these three categories, various factors are considered, including:		<i>High</i> = Observed in similar habitat in region by qualified biologists, or habitat on the site is a type often utilized by the species and the site is within the known range of the species.
• Range extent, area of occupancy, population size, total number of occurrences, and number of good occurrences (ranked A or B). Environmental specificity can also be used if other information is lacking.		<i>Moderate</i> = Reported sightings in surrounding region, or site is within the known range of the species and habitat on the site is a type occasionally used by the species.
• Overall threat impact as well as intrinsic vulnerability (if threats		<i>Low</i> = Site is within the known range of the species but habitat on the site is rarely used by the species.
		<i>Absent</i> = A focused study failed to detect the species, or no suitable habitat is present.
		<i>Unknown</i> = Distribution and habitat use has not been clearly determined.

4.2 Field Visits

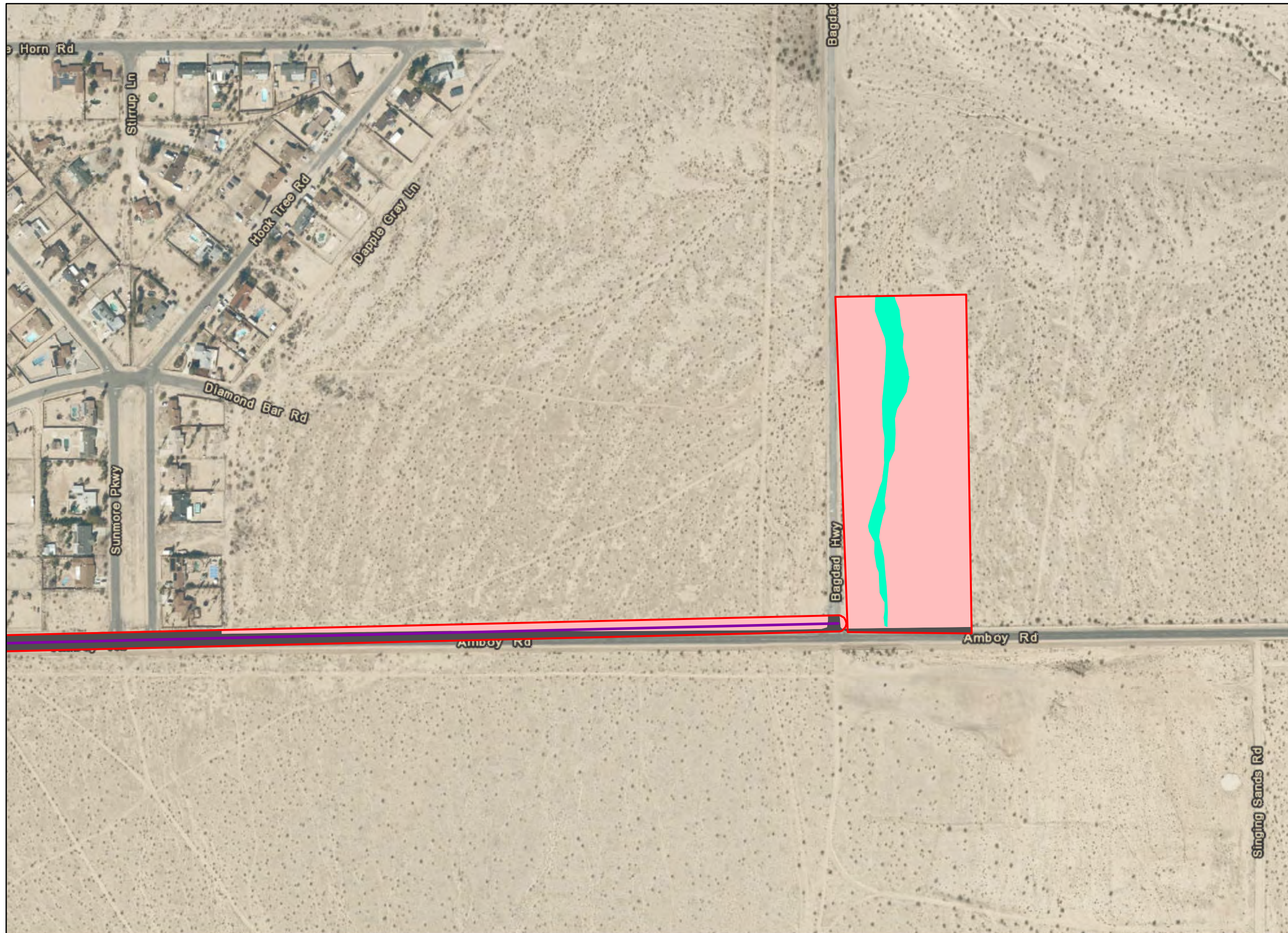
Weather conditions during December surveys of new project areas were favorable for the detection of target biological elements. Temperatures ranged from 36 – 65 degrees Fahrenheit with light winds and variable cloud cover.

As would be expected for a sewer project, much of the project alignment is surrounded by the homes, businesses, and public facilities that will be served by the proposed system. The remaining habitat is a patchwork of varying sizes of undeveloped vacant lots and lands. Most undeveloped lands are not pristine, but instead show signs of anthropogenic disturbance, such as mechanical disturbance of soil, vegetation removal, off road vehicle tracks, and trash dumping. Nevertheless, the undeveloped lands provide potential wildlife corridors between developed/disturbed areas.

No specific soil mapping was available for most of the project site (United States Department of Agriculture, Natural Resources Conservation Service 2019.). The only mapped soil is near the southeast site corner: "Pintobasin gravelly sand, 1 to 3 percent slopes." In general, most observed soils appeared consistent with gravelly sands.

Where not developed, the primary vegetation community present throughout the project area is Creosote Bush Scrub dominated by creosote bush (*Larrea tridentata*) with various co-dominants including white bur-sage (*Ambrosia dumosa*), white rhatany (*Krameria bicolor*), allscale saltbush (*Atriplex polycarpa*) and cheesebush (*Ambrosia salsola*). In the eastern project area there are stands of Saltbush Scrub dominated by allscale saltbush (*Atriplex polycarpa*) and/or four-wing saltbush (*Atriplex canescens*), often intergrading with Creosote Bush Scrub. A major flood control channel which originates from Fortynine Palms Canyon to the southwest is present onsite, as well as other unnamed drainages. These are mapped as Desert Wash Systems and where plants have not been removed by flood control agencies, they are vegetated with species such as smoke tree (*Psoralea argemone*) and catclaw (*Senegalia greggii*). Vegetation communities in the project footprint are mapped on Figure 4) and are based on those in USGS (2004).

All plant species and vertebrate wildlife detected during all 2022 surveys are included in Appendix D. It should be noted that relatively short-term inventories of this nature are limited in their scope by the seasonality, timing and duration of surveys, and the nocturnal and fossorial habits of many desert-dwelling animals. Therefore, the species observed to date do not reflect the total number of species that potentially occupy the project area.



- Survey Area
- Proposed Features**
- Temporary Effluent
- Vegetation Communities**
- Creosote Bush Scrub
- Desert Wash System
- Developed/Disturbed

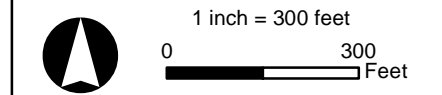
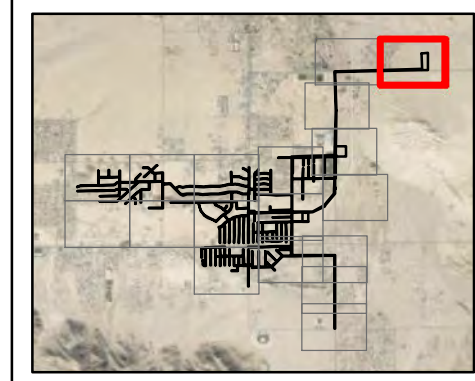
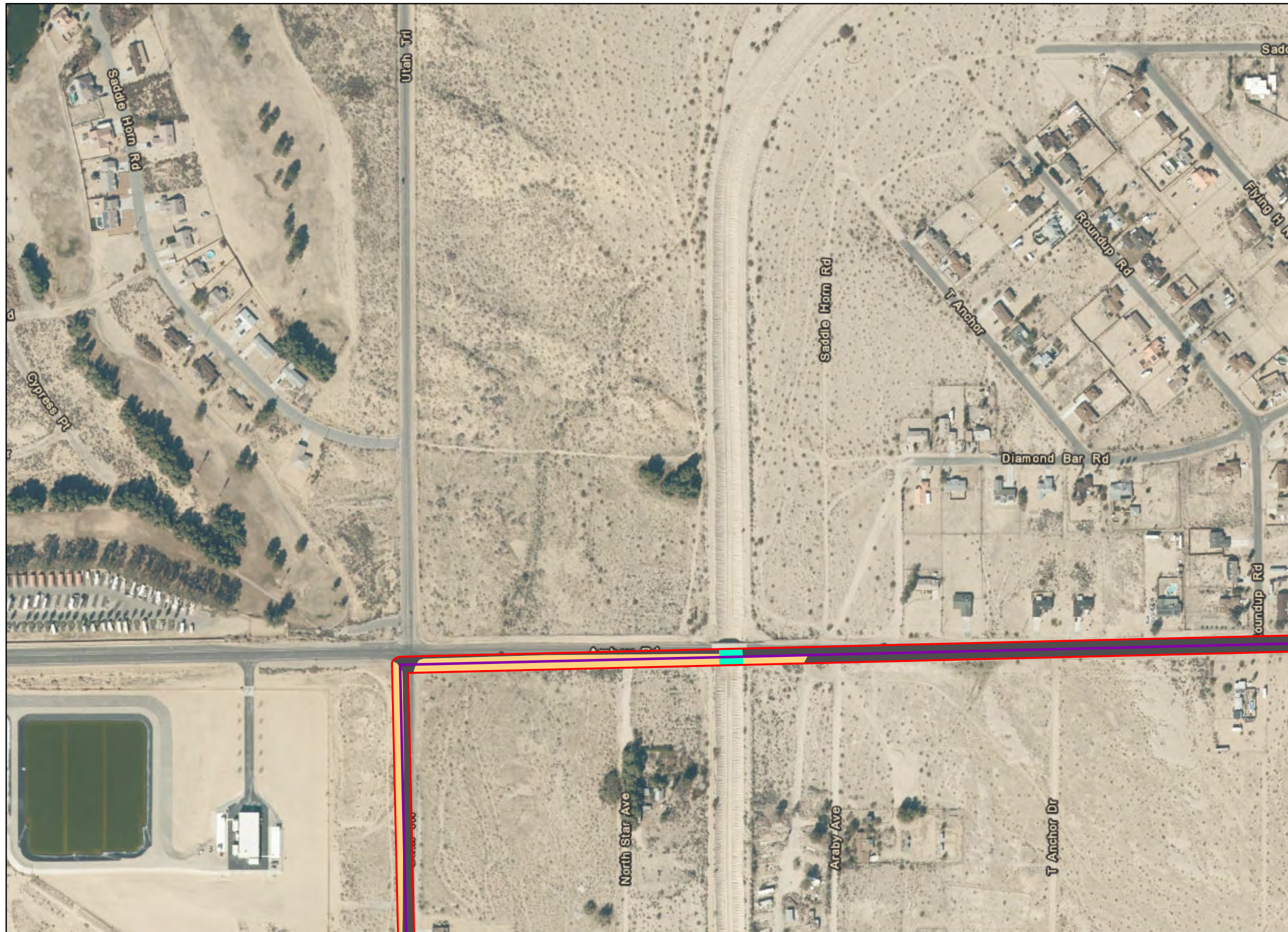


FIGURE 4-1
 Vegetation Communities and
 Known Rare Plant/Milkweed Locations
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



- Survey Area
- Proposed Features**
- Temporary Effluent
- Vegetation Communities**
- Saltbush Scrub
- Desert Wash System
- Developed/Disturbed

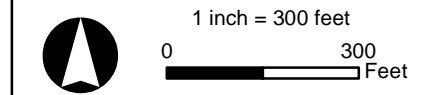
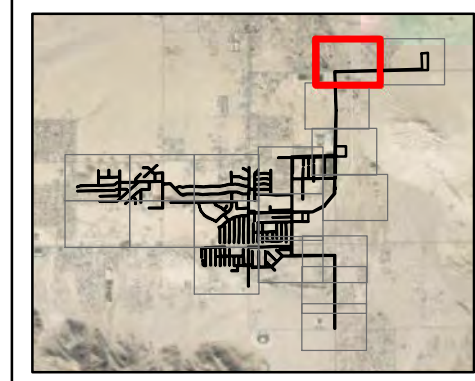


FIGURE 4-2
 Vegetation Communities and
 Known Rare Plant/Milkweed Locations
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



- Survey Area
- Proposed Features**
- Temporary Effluent
- Vegetation Communities**
- Creosote Bush Scrub
- Saltbush Scrub
- Developed/Disturbed

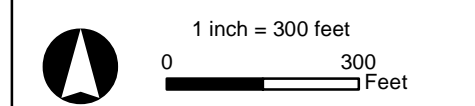
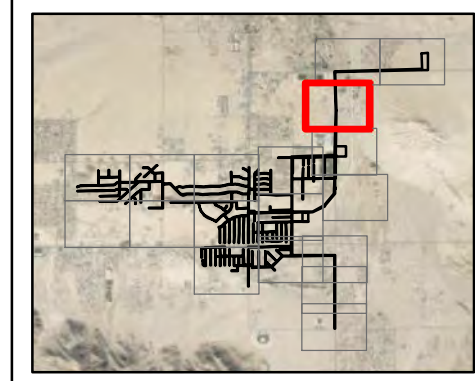
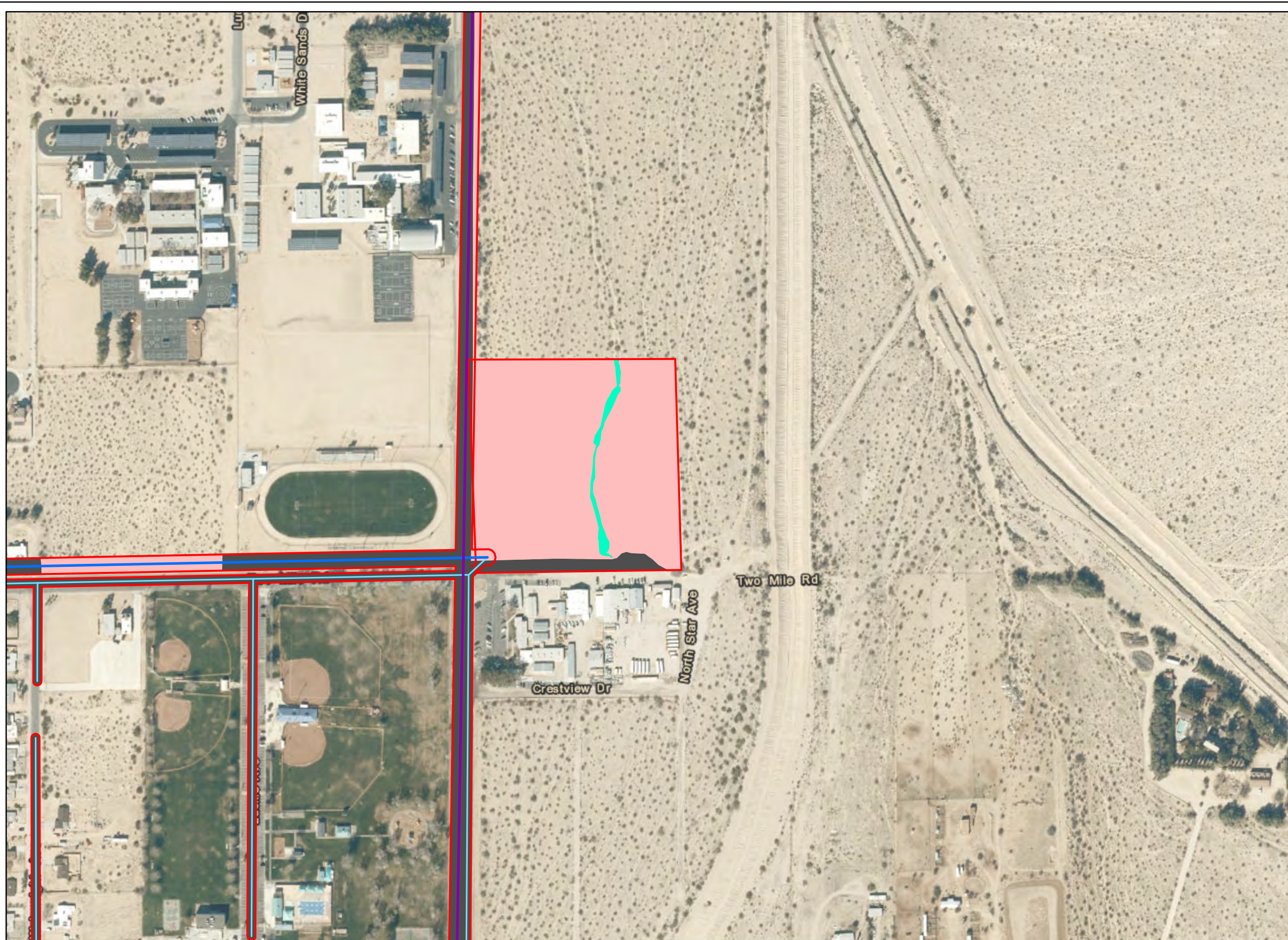


FIGURE 4-3
 Vegetation Communities and
 Known Rare Plant/Milkweed Locations
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





- Survey Area
- Proposed Features**
- Collector
- Force Main
- Temporary Effluent
- Vegetation Communities**
- Creosote Bush Scrub
- Desert Wash System
- Developed/Disturbed

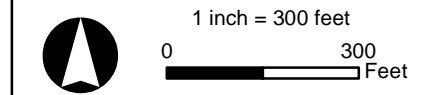
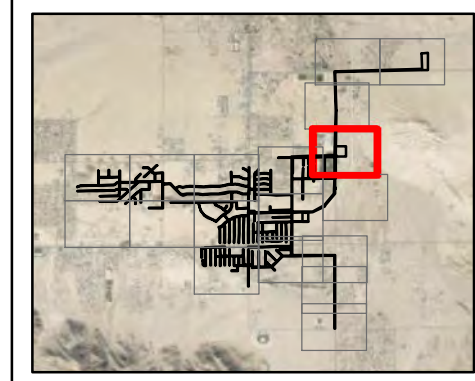
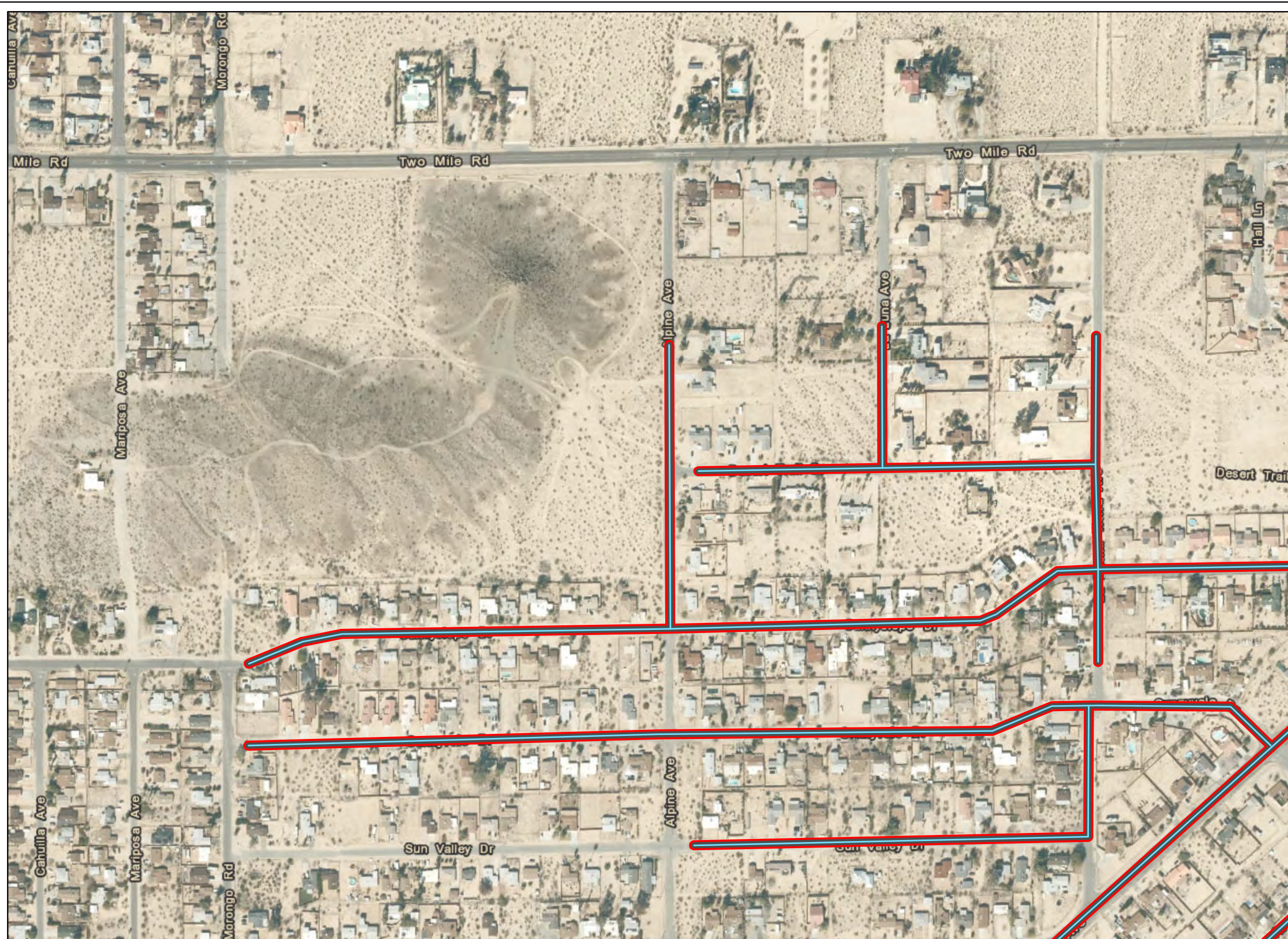


FIGURE 4-4
 Vegetation Communities and
 Known Rare Plant/Milkweed Locations
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





- Survey Area
- Proposed Features**
- Collector
- Vegetation Communities**
- Developed/Disturbed

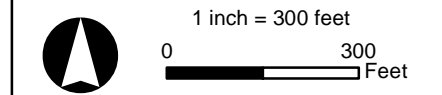
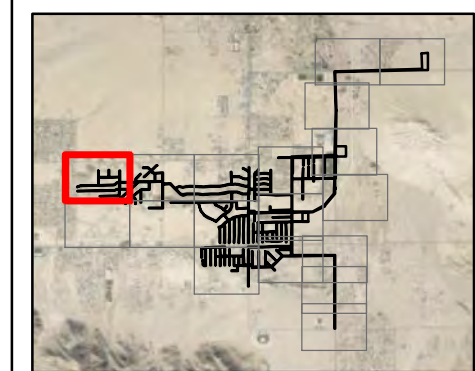
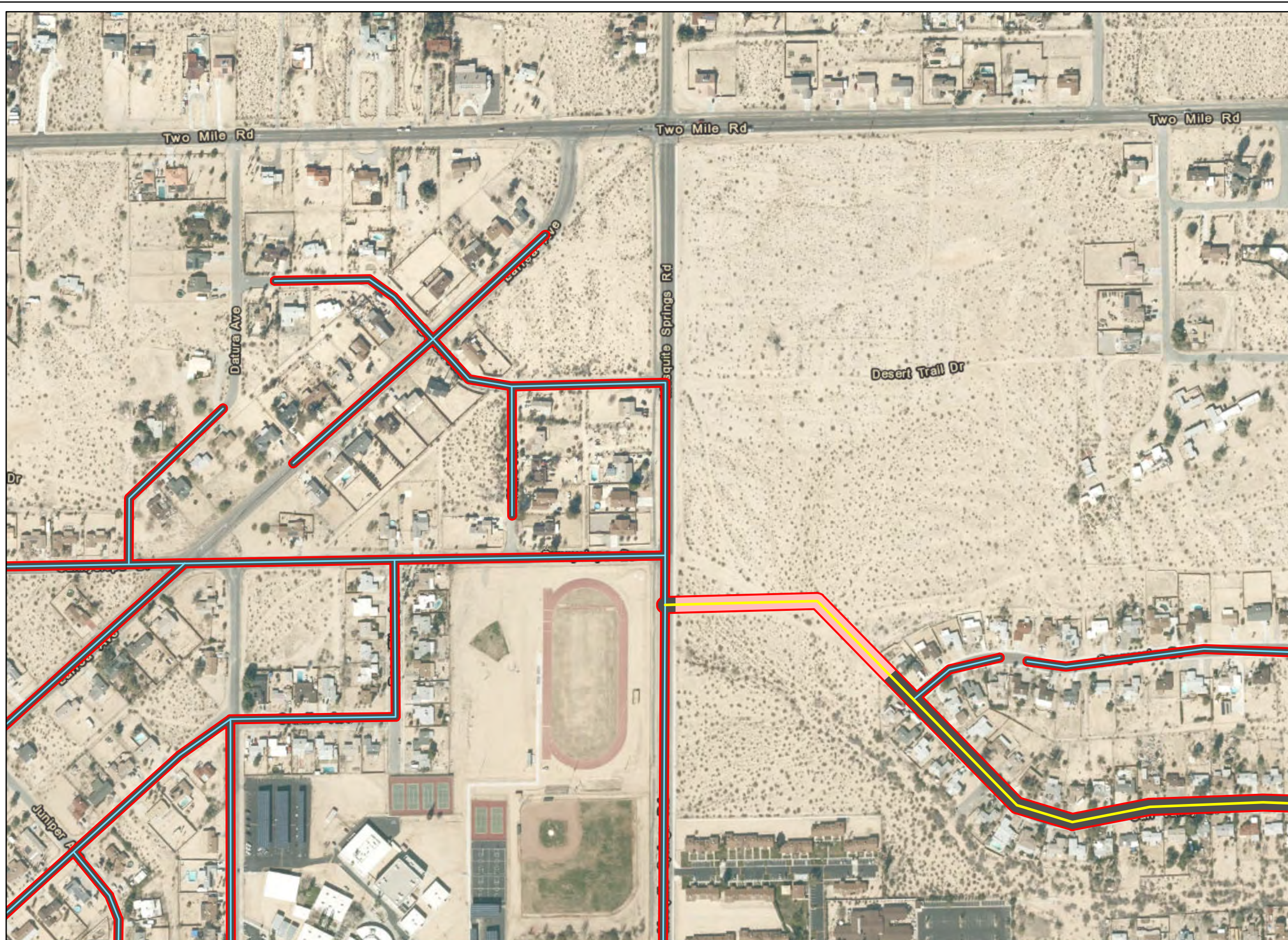


FIGURE 4-5
 Vegetation Communities and
 Known Rare Plant/Milkweed Locations
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





- Survey Area
- Proposed Features**
- Collector
- Trunk
- Vegetation Communities**
- Creosote Bush Scrub
- Developed/Disturbed

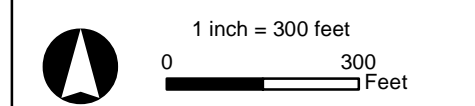
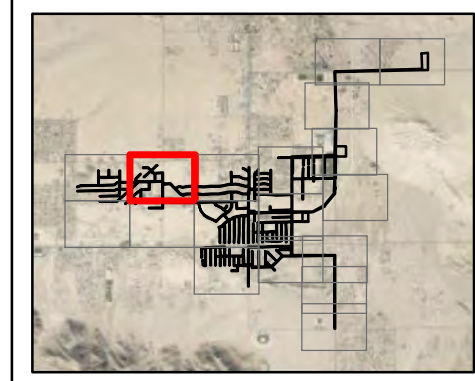
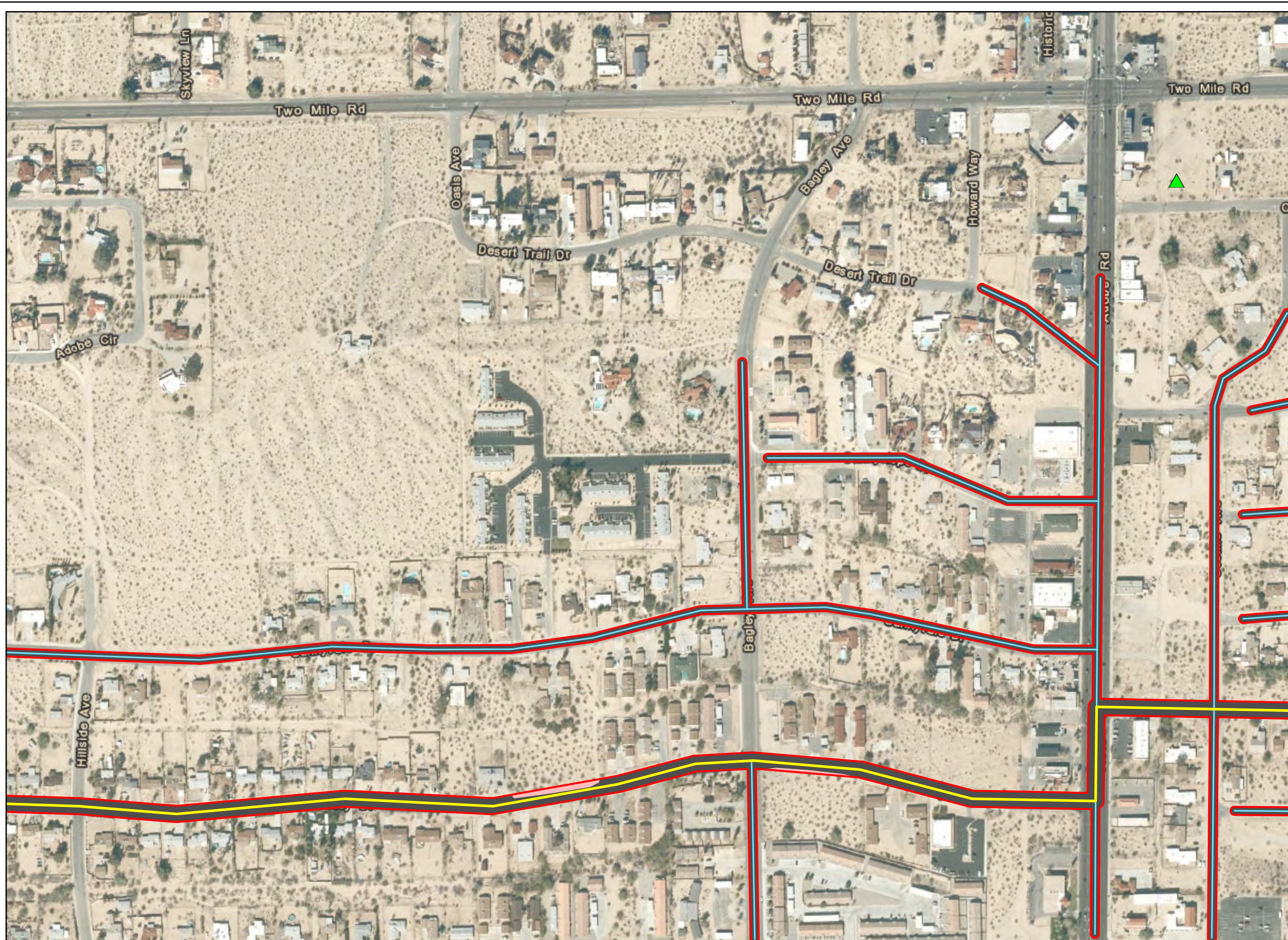


FIGURE 4-6
 Vegetation Communities and
 Known Rare Plant/Milkweed Locations
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





- Survey Area
- Sensitive Plant Observations**
- ▲ Utah vine milkweed
- Proposed Features**
- Collector
- Trunk
- Vegetation Communities**
- Creosote Bush Scrub
- Developed/Disturbed

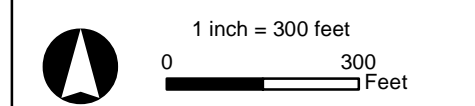
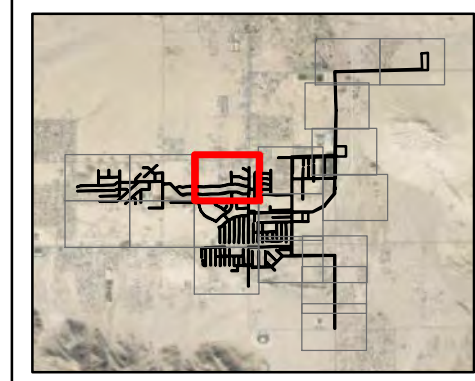
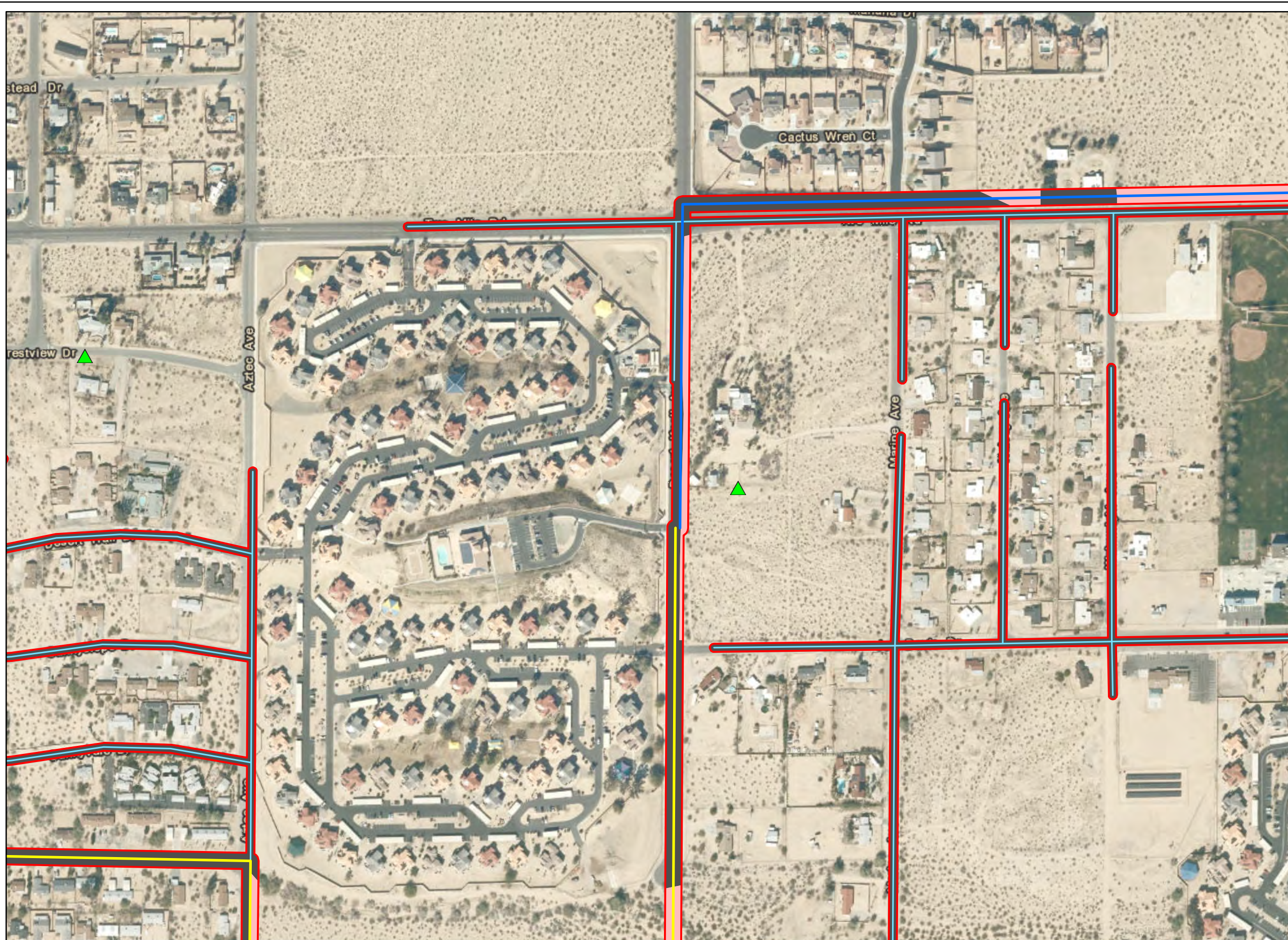


FIGURE 4-7
 Vegetation Communities and
 Known Rare Plant/Milkweed Locations
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





- Survey Area
- Sensitive Plant Observations**
- ▲ Utah vine milkweed
- Proposed Features**
- Collector
- Force Main
- Trunk
- Vegetation Communities**
- Creosote Bush Scrub
- Developed/Disturbed

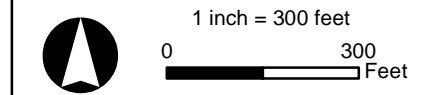
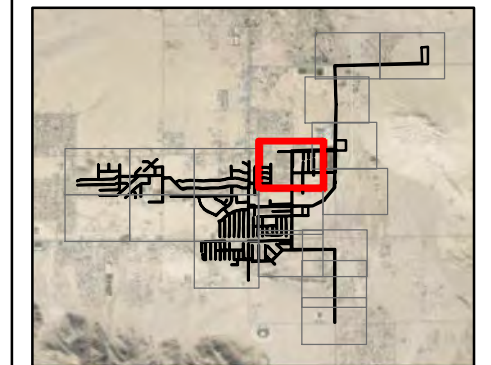


FIGURE 4-8
 Vegetation Communities and
 Known Rare Plant/Milkweed Locations
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





- Survey Area
- Proposed Features**
- Collector
- Vegetation Communities**
- Developed/Disturbed

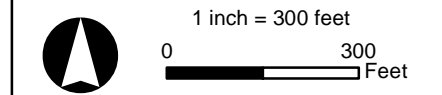
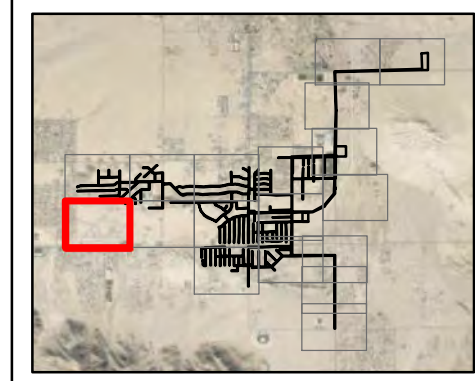


FIGURE 4-9
 Vegetation Communities and
 Known Rare Plant/Milkweed Locations
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



- Survey Area
- Proposed Features**
- Collector
- Vegetation Communities**
- Developed/Disturbed

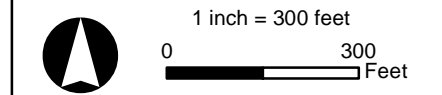
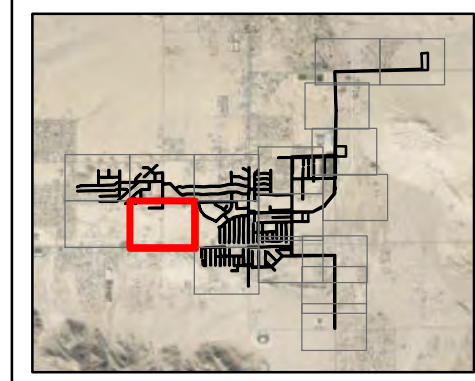
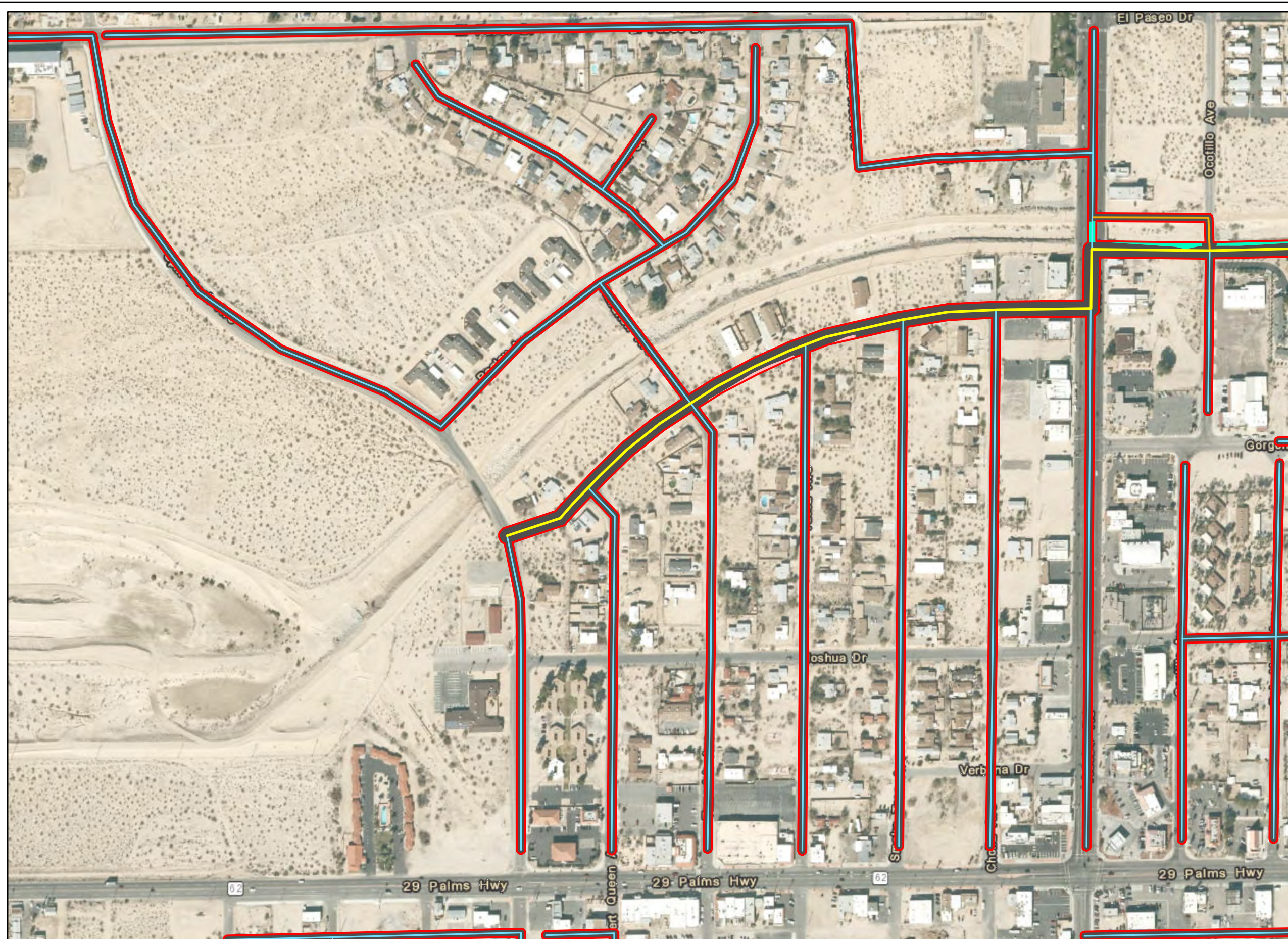


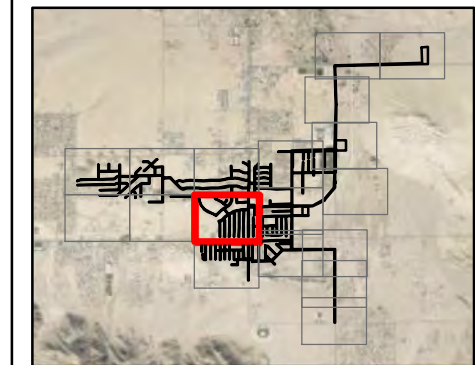
FIGURE 4-10
 Vegetation Communities and
 Known Rare Plant/Milkweed Locations
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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- Survey Area
- Proposed Features**
- Alternate Alignment
- Collector
- Trunk
- Vegetation Communities**
- Creosote Bush Scrub
- Desert Wash System
- Developed/Disturbed

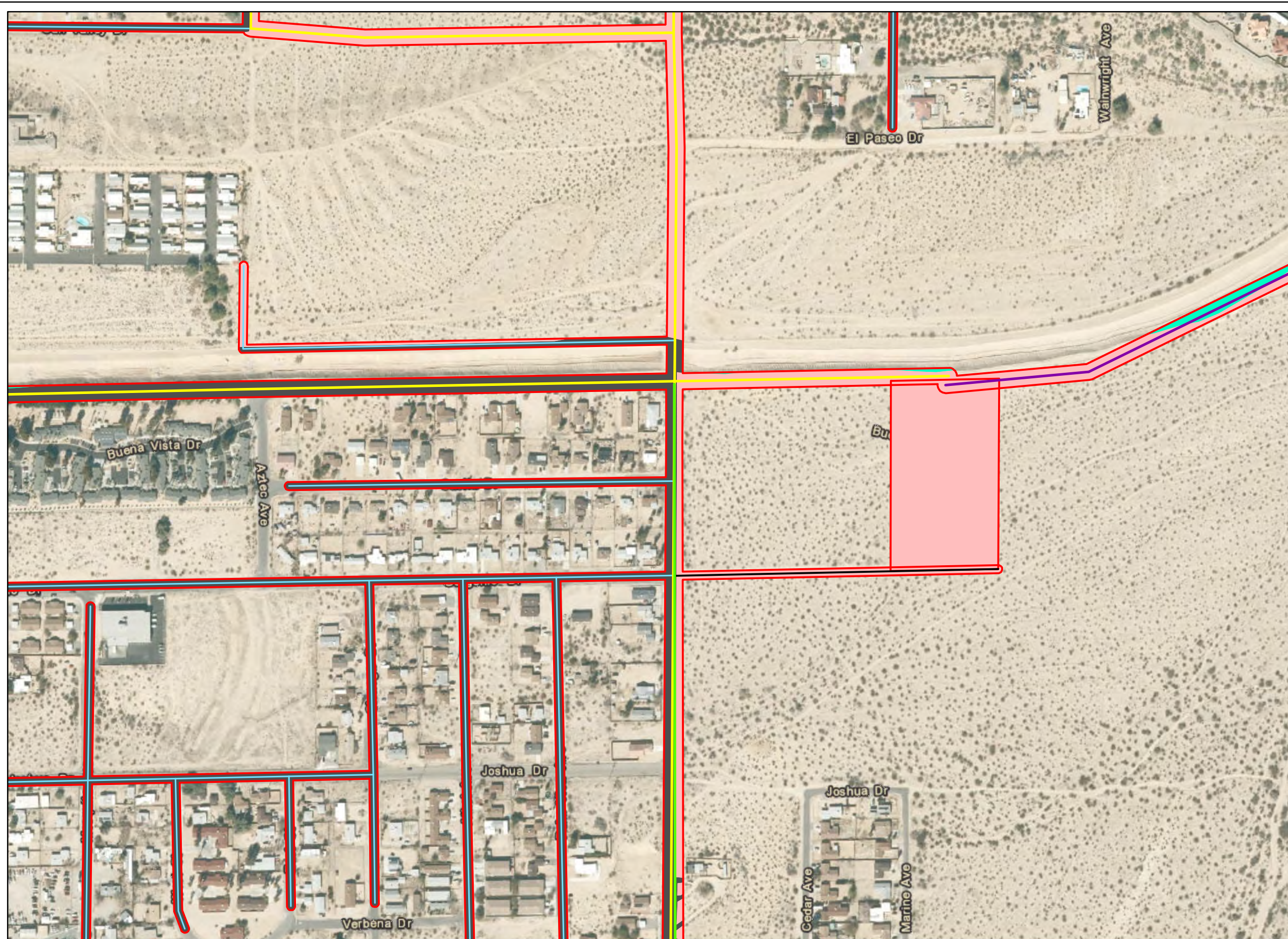


1 inch = 300 feet
 0 300 Feet

FIGURE 4-11
 Vegetation Communities and
 Known Rare Plant/Milkweed Locations
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



- Survey Area
- Proposed Features**
- Access Road
- Collector
- Permanent Pumping
- Temporary Effluent
- Trunk
- Vegetation Communities**
- Creosote Bush Scrub
- Desert Wash System
- Developed/Disturbed

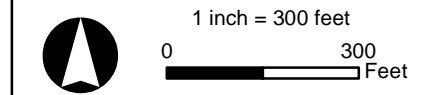
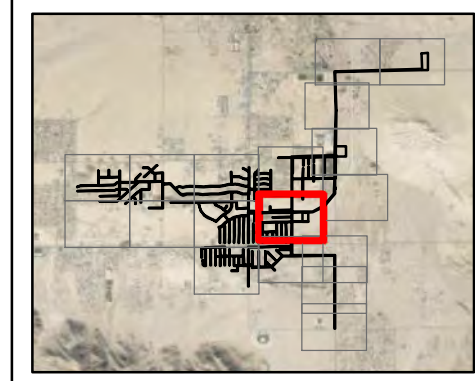
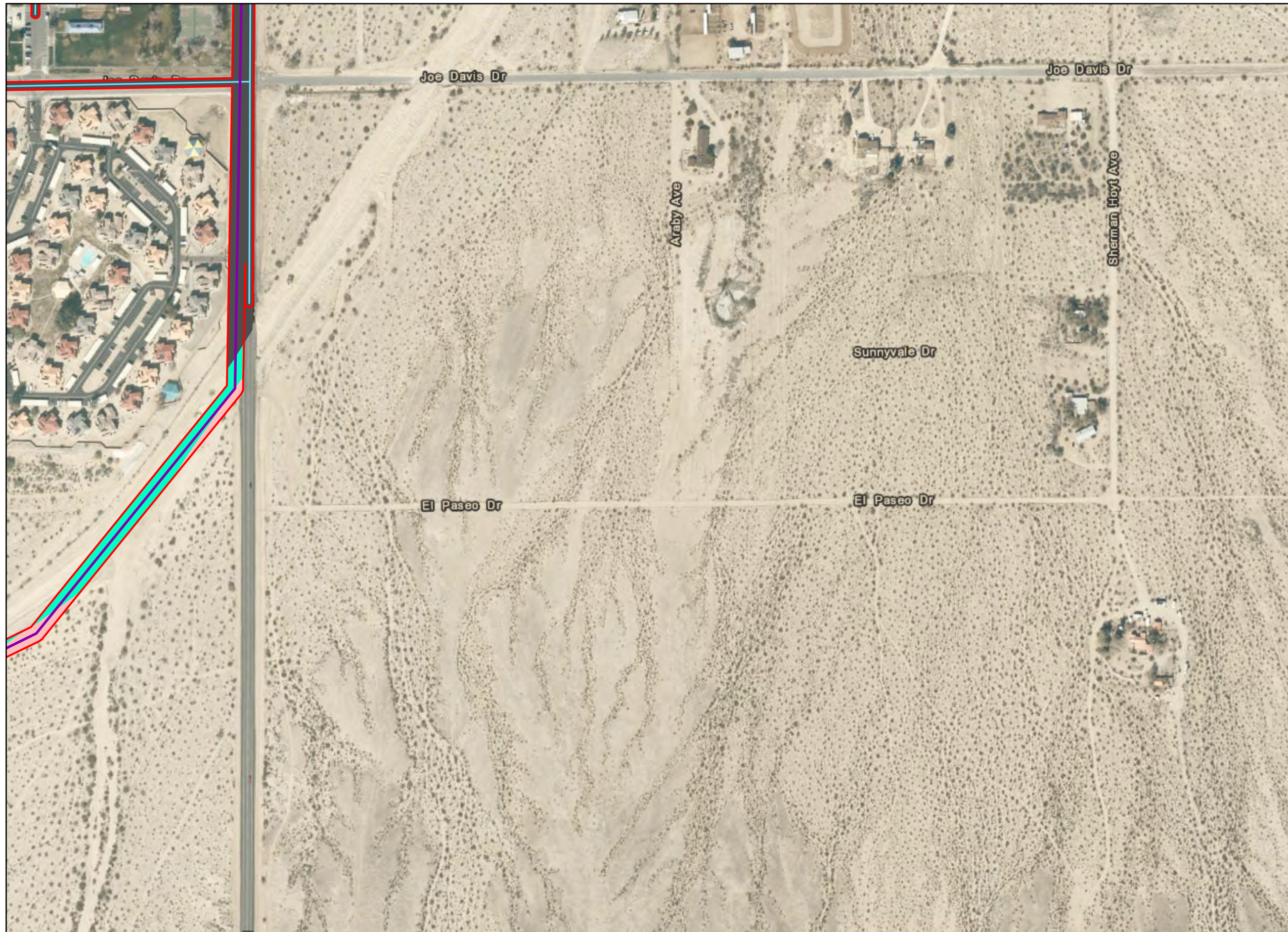


FIGURE 4-12
 Vegetation Communities and
 Known Rare Plant/Milkweed Locations
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



- Survey Area
- Proposed Features**
- Collector
- Temporary Effluent
- Vegetation Communities**
- Creosote Bush Scrub
- Desert Wash System
- Developed/Disturbed

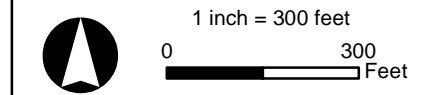
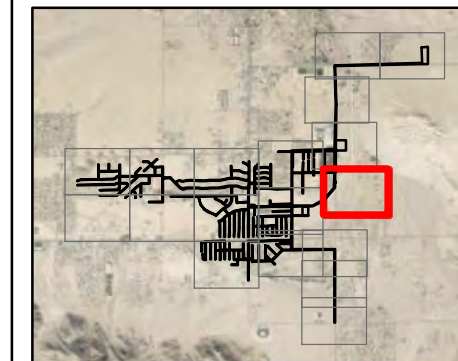
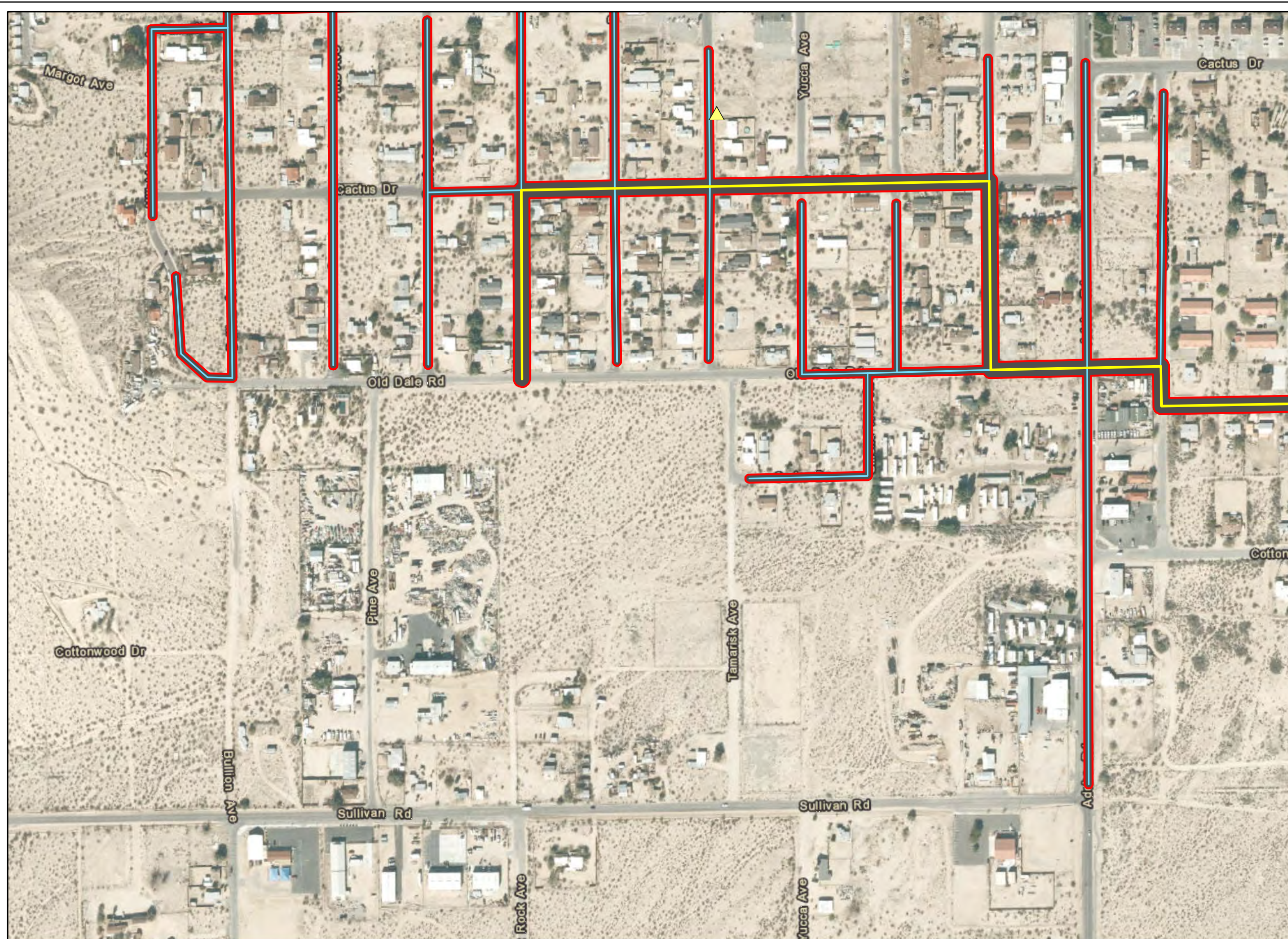


FIGURE 4-13
 Vegetation Communities and
 Known Rare Plant/Milkweed Locations
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





- Survey Area
- Sensitive Plant Observations**
- ▲ Desert milkweed
- Proposed Features**
- Collector
- Trunk
- Vegetation Communities**
- Developed/Disturbed

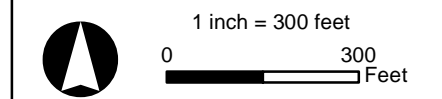
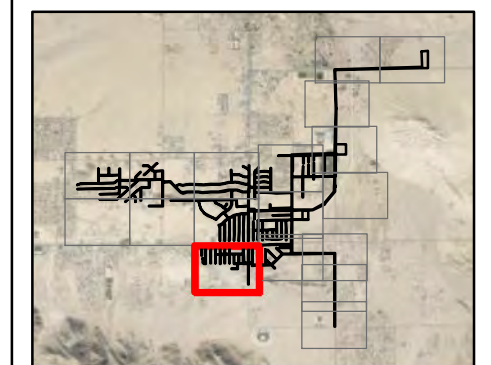
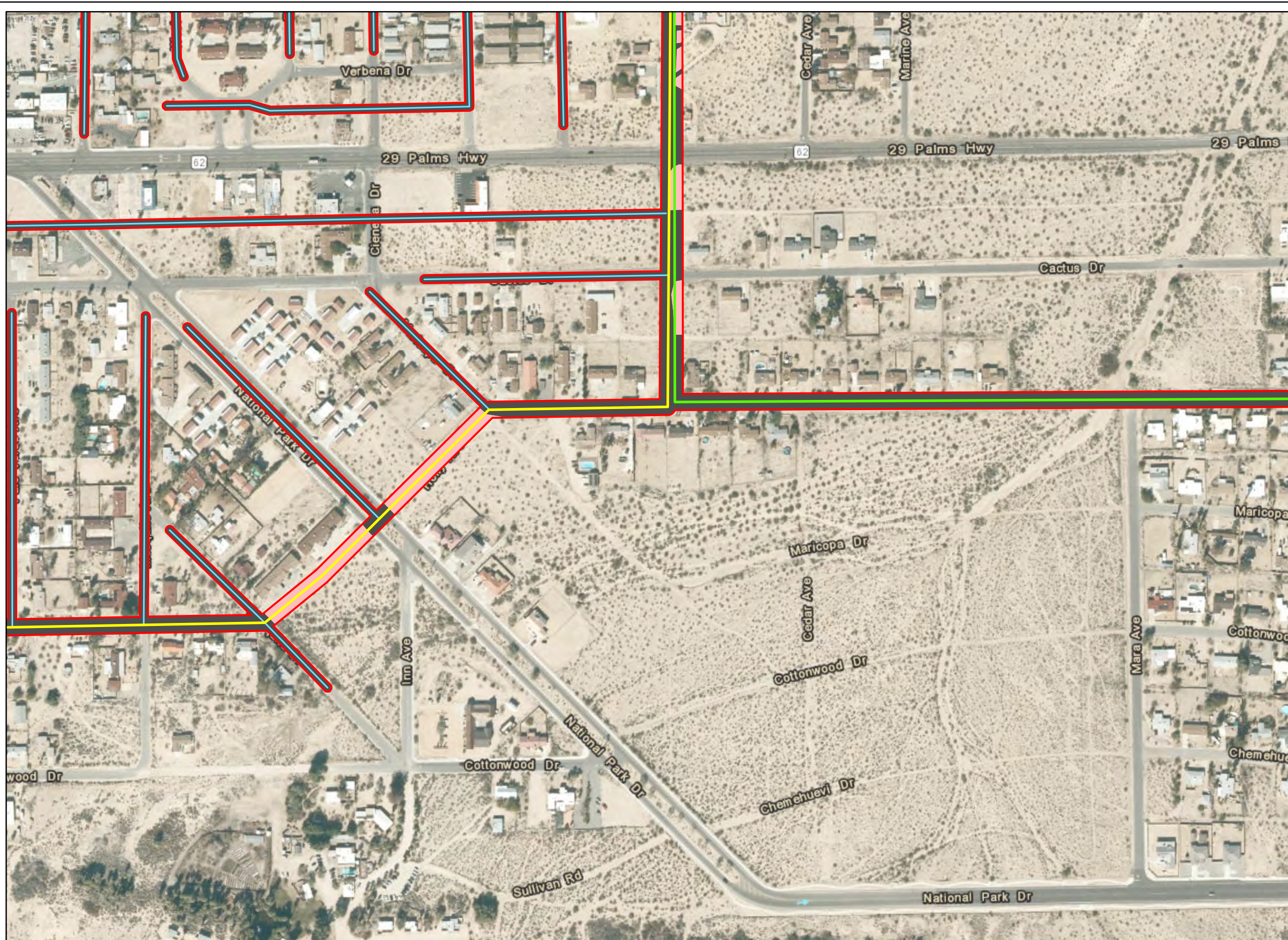


FIGURE 4-14
 Vegetation Communities and
 Known Rare Plant/Milkweed Locations
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





- Survey Area
- Proposed Features**
- Collector
- Permanent Pumping
- Trunk
- Vegetation Communities**
- Creosote Bush Scrub
- Developed/Disturbed

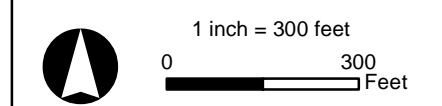
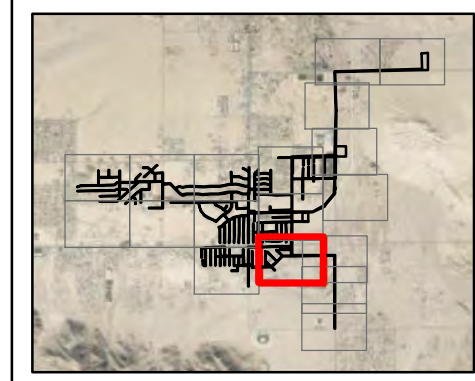
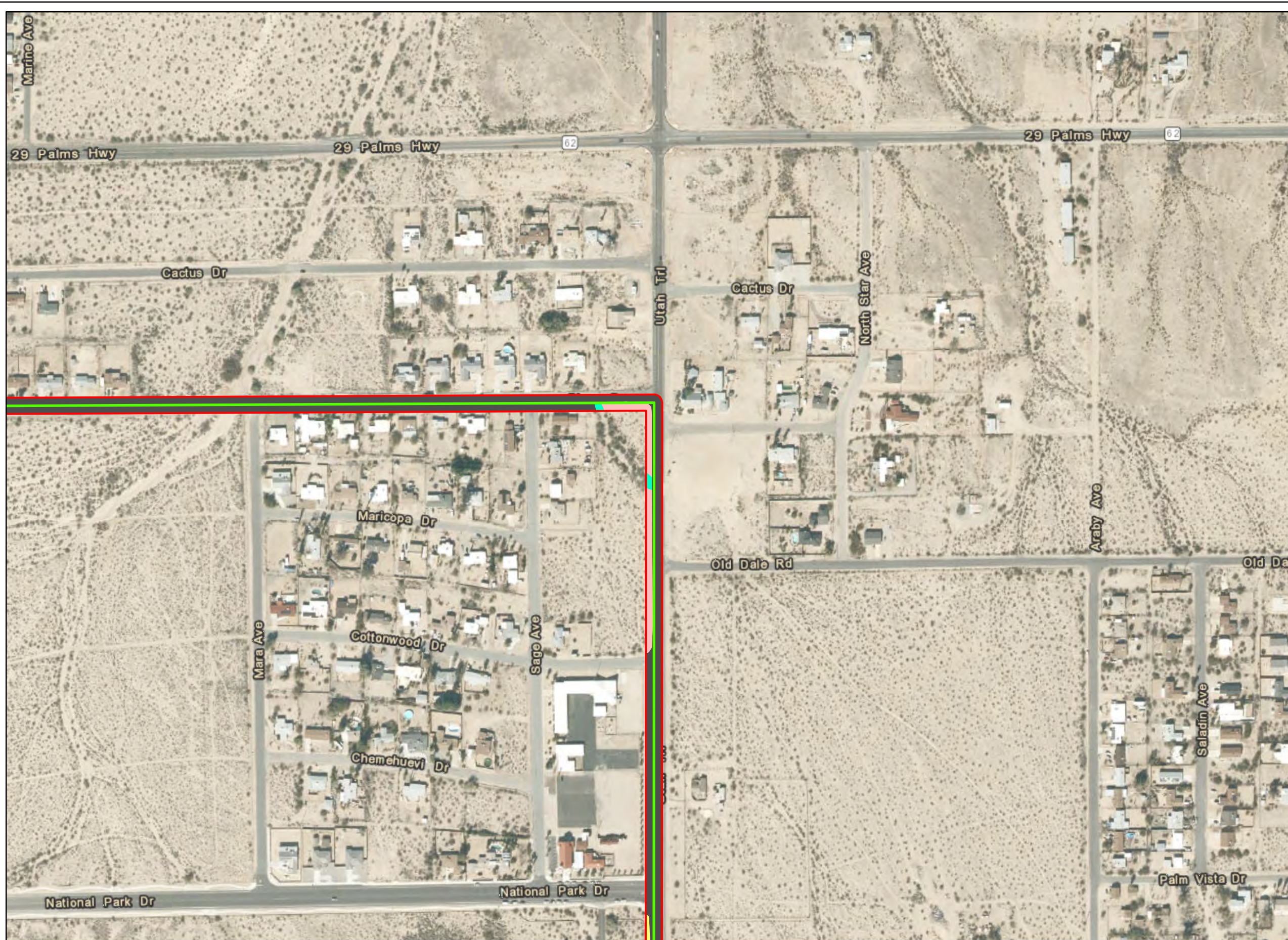


FIGURE 4-15
 Vegetation Communities and
 Known Rare Plant/Milkweed Locations
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





- Survey Area
- Proposed Features**
- Permanent Pumping
- Vegetation Communities**
- Creosote Bush Scrub
- Creosote Bush Scrub/
Saltbush Scrub
- Desert Wash System
- Developed/Disturbed

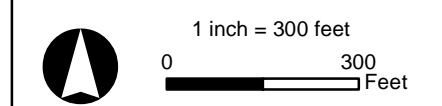
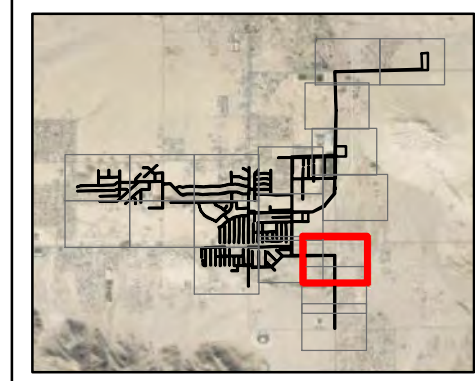
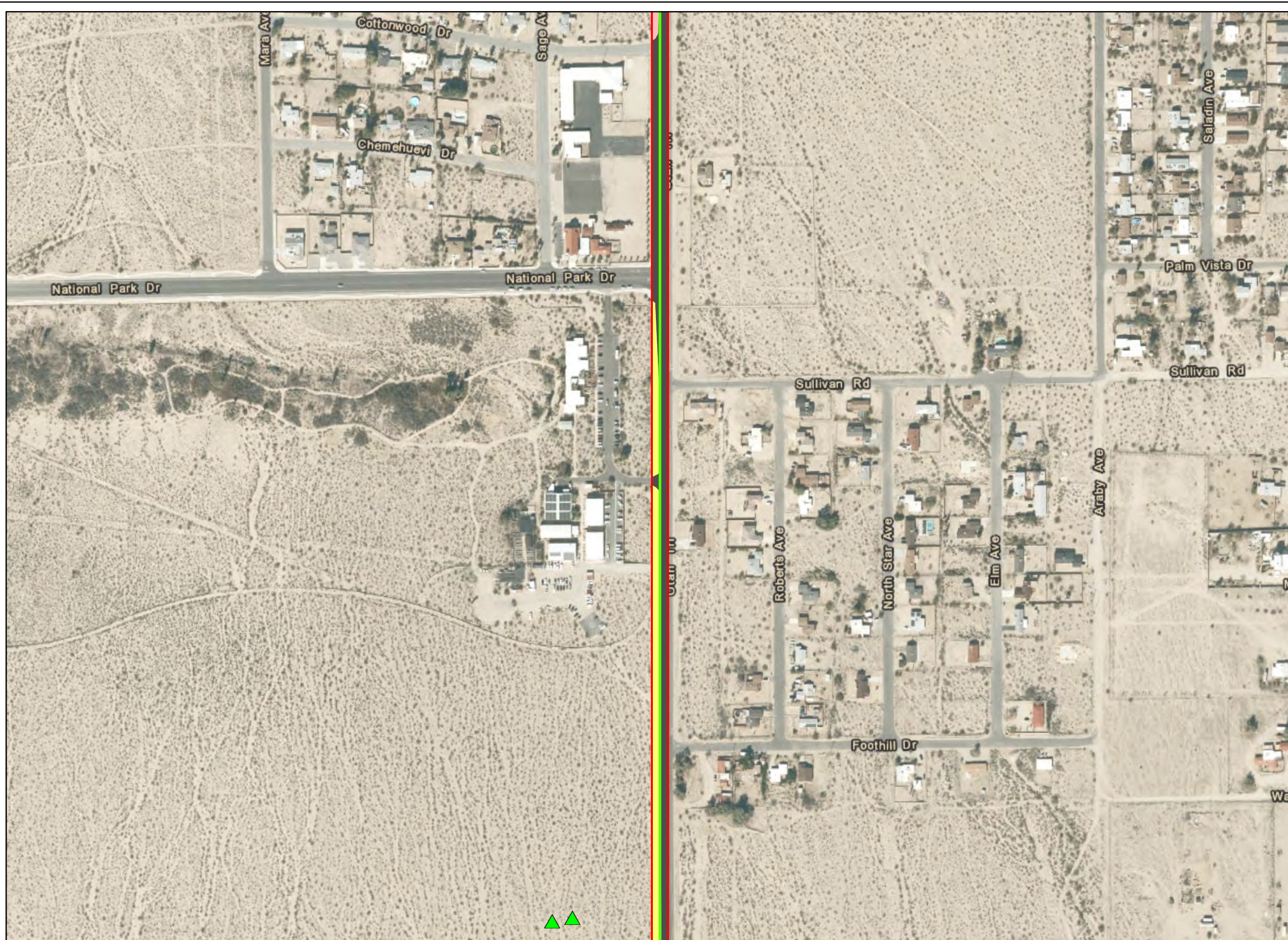


FIGURE 4-16
 Vegetation Communities and
 Known Rare Plant/Milkweed Locations
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





- Survey Area
- Sensitive Plant Observations**
- ▲ Utah vine milkweed
- Proposed Features**
- Permanent Pumping
- Vegetation Communities**
- Creosote Bush Scrub
- Creosote Bush Scrub/
Saltbush Scrub
- Developed/Disturbed

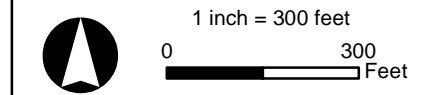
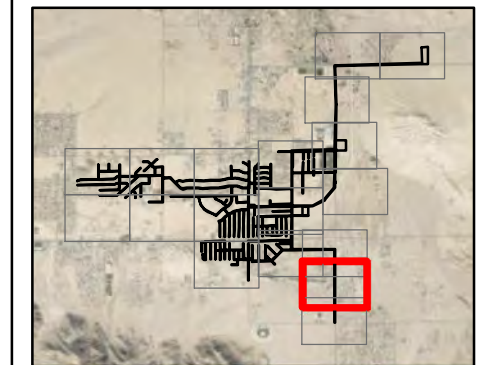
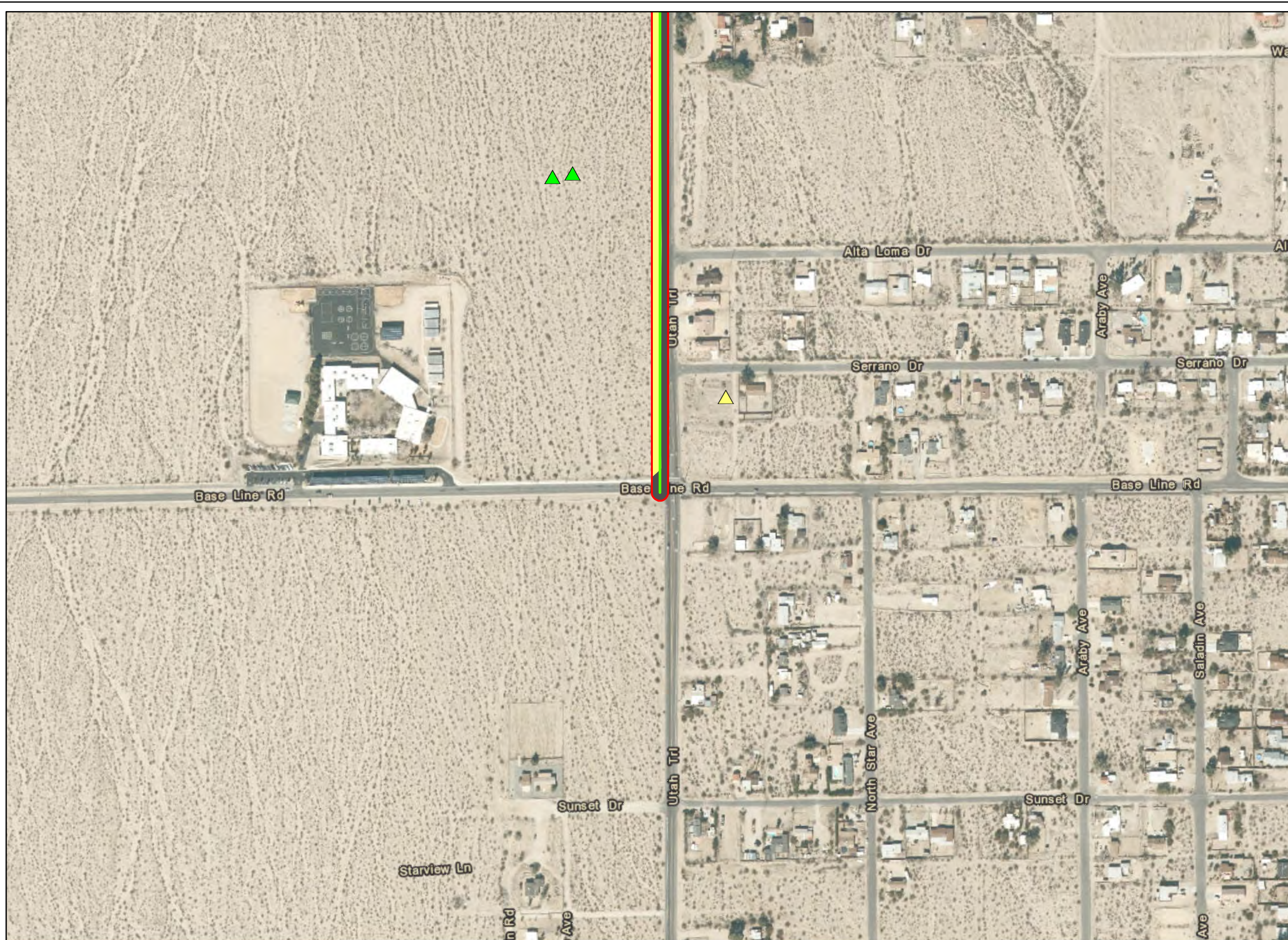


FIGURE 4-17
 Vegetation Communities and
 Known Rare Plant/Milkweed Locations
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





- Survey Area
- Sensitive Plant Observations**
- ▲ Desert milkweed
- ▲ Utah vine milkweed
- Proposed Features**
- Permanent Pumping
- Vegetation Communities**
- Creosote Bush Scrub/
Saltbush Scrub
- Developed/Disturbed

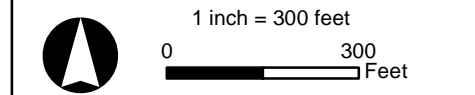
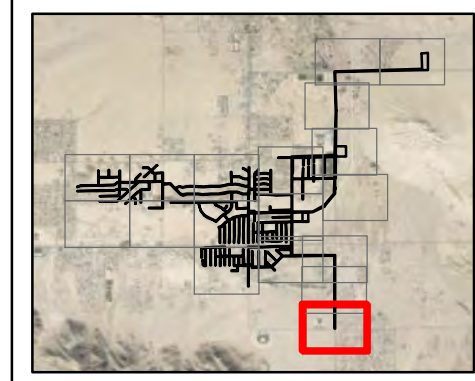


FIGURE 4-18
Vegetation Communities and
Known Rare Plant/Milkweed Locations
Twentynine Palms Wastewater
Collection System, Phases 1 and 2
Twentynine Palms, CA



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5.0 DISCUSSION

5.1 Special Status Plants

Twenty special-status plant species are known from the project area. Two do not occur: the Joshua tree (not detected during any surveys, other than horticultural plantings in developed areas) and Robison's monardella (no suitable habitat). One is present: Utah vine milkweed, found during spring 2022 focused surveys (Wood 2022a, Appendix E, Figure 4). The remaining 17 species have not been detected on the current project site and were not detected during December 2022 site visits. Surveys of new areas will be conducted in the April and June 2023 blooming season. No special status vegetation communities were detected.

Although none of the occurring or potentially occurring plant species are state or federally listed as threatened or endangered, impacts could be considered significant under the CEQA. Utah vine milkweed should be avoided. Biological monitoring may be required near their populations. If unavoidable, they should be transplanted and/or have seeds collected with guidance from the CDFW. If additional special status plants are detected in June or in the future, this same recommendation would apply.

5.2 Desert Tortoise

The Mojave population segment of the desert tortoise is federally and state listed as threatened by the USFWS and CDFW. The Mojave population segment includes all tortoises occurring west and north of the Colorado River. The desert tortoise is most common in desert scrub, desert wash, and Joshua tree habitats in a variety of terrain types, including alluvial fans, valleys, rocky hillsides, and washes. They require friable soil for burrow and nest construction. Burrows are typically found at the base of shrubs, in the interspaces between shrubs, and occasionally in caliche soil bank areas or underneath boulders/rocks. They are herbivores and feed on a variety of plants including annual herbs and perennial grasses.

Tortoise activity is greatest during the spring and early summer, and to a lesser extent during the fall; however, tortoises can be active at any time of the year during appropriate weather conditions. Although tortoises hibernate during the winter and typically emerge in late February or early March, hatchlings and juveniles can be fairly active during the winter months. Adults will also emerge from their burrows to drink if water resources have been limited during the previous activity season and/or winter precipitation has provided standing water. Their activity is usually much reduced during hot summer months, but they may be active following summer rains or if temperatures are moderate (Boarman 2003).

Threats to desert tortoises include loss or degradation of habitat, vandalism, poaching, intentional killing, predation on young tortoises by the common raven (*Corvus corax*) and other predators (e.g. kit fox, snakes, etc.), and disease (e.g. Mycoplasmosis). Off-road vehicles, military training maneuvers, mining, and livestock grazing also affect tortoise habitat by collapsing burrows,

eroding soils, reducing availability of food plants, eliminating shrubs which would provide shade for tortoises and support for their burrows, and ultimately results in surface disturbance that promotes conditions more conducive to invasion by exotic plant species, which provide less nutritional value to tortoises than the native species that were replaced. Human activities, including garbage dumping, landfills, roads, increased nesting opportunities, irrigation, and increased vehicle use have led to increased numbers of common ravens in California deserts. Ultimately, the increased predation on young tortoises by common ravens reduces recruitment into breeding populations (Boarman 2003).

Tortoises are most often detected by their scats and burrows. Tortoises themselves can sometimes be detected in burrows by reflecting sunlight inside the burrow with a mirror. Other tortoise sign include carcasses, or fragments thereof, courtship rings, and drinking depressions. Presence of sign is an indication that tortoises either occur, or have recently occurred, at a particular location. Sign can be detected at any time of the year and always indicates suitable habitat, if not occupied habitat.

Although there is no desert tortoise critical habitat designated on the project site, it is present approximately one mile to the south. Further, the vegetation communities occurring on the project site (*e.g.* Creosote Bush Scrub, Saltbush Scrub) are habitats typically utilized by desert tortoises, and the CNDDDB reported populations within the western project area in 1990-1991. During the April 2022 focused survey, WSP biologists were provided an anecdotal report by a local resident who stated that they had observed a mating pair of desert tortoises in the vicinity of the southern project area last year. During the first half of April 2022, however, a focused survey for the desert tortoise was conducted within the old project footprint (which overlaps the new project footprint), and no tortoises or their sign were detected. The survey report includes further details (Wood 2022b, Appendix E). A focused survey was conducted on new project areas from 12-15 December 2022 and no tortoises or their sign were detected at that time either (see Appendix F: Desert Tortoise Survey Forms).

Although desert tortoise was found to be absent from the narrow, linear project footprint, the project area is surrounded by potential habitat. For these reasons, and because suitable habitat is present in the project footprint, desert tortoises may enter the project area in the future. The following mitigation and minimization measures are recommended to ensure that any potential impacts to the desert tortoise are avoided:

- 1) A worker's environmental awareness program (WEAP) would be implemented to educate the construction crew of potential special status species present on the project site.
- 2) Construction and maintenance personnel would be required to inspect for desert tortoises under vehicles prior to moving the vehicle. If a desert tortoise is found beneath a vehicle, it would not be moved until the desert tortoise had left of its own accord. All desert tortoise observations would be reported to a qualified biologist and the wildlife

agencies.

- 3) A qualified biologist should monitor construction when it is occurring adjacent to undeveloped lands to ensure that tortoises do not enter the work area and that they are not disturbed if present.
- 4) Any open trenches adjacent to habitat should be monitored by a qualified biologist daily. If left open overnight or at any time when not monitored, they should be fenced and/or covered to prevent entry by desert tortoises. Exit ramps should be present within open trenches.

Desert tortoises cannot be taken (harmed, harassed) under state and federal law. This report and any recommended mitigation measures do not constitute authorization for incidental take of the desert tortoise.

5.3 Special Status Invertebrates

There is a minimal possibility that two special status insects could occur onsite: the monarch butterfly (federal candidate for ESA listing) and Robert's rhopalemma bee (state ranked as Critically Imperiled). Monarchs are not expected to winter in the project area, but a few individual adults may forage in the area. The main threat to the species would be impacts to milkweed (*Asclepias* spp.), a larval foodplant, which occurs in scattered locations along the project route. A few incidental detections of desert milkweed (*Asclepias erosa*) are shown on Figure 4. Utah vine milkweed is a different genus, but is related to *Asclepias* and could potentially be utilized by monarch caterpillars as well. Additional locations will be added if found during spring 2023 plant surveys. Robert's rhopalemma bee is an extremely rare species about which little is known.

We recommend that preconstruction surveys by qualified biologists flag milkweed plants for avoidance. If unavoidable, monarch caterpillars should be moved to safe milkweeds, with appropriate authorizations. Any bee nest should be avoided. If unavoidable, and determined to be occupied by Robert's rhopalemma bee, CDFW should be consulted for guidance.

5.4 Red Diamond Rattlesnake

Habitat is marginal for the state species of special concern red diamond rattlesnake, and at the northeastern limits of its range. Similarly to the recommendations for the desert tortoise, we recommend that a qualified biologist monitor construction when it is occurring adjacent to suitable undeveloped lands to ensure that red diamond rattlesnakes do not enter the work area and that they are not disturbed if present.

5.5 Special Status Bats

Three species of special status bats (state species of special concern) are of potential occurrence: pallid bat, spotted bat, and western yellow bat. Foraging bats are of no concern regarding impacts, but roosting bats of any species must not be disturbed. If potential roost sites must be disturbed

or removed, especially large trees, palms, they should be checked for bats by a qualified biologist. If present and unavoidable, CDFW should be consulted.

5.6 Special Status Burrowing Mammals

Two species of special status burrowing mammals (state species of special concern) are of potential occurrence: American badger and pallid San Diego pocket mouse. Although habitat is suitable for American badger, no burrows diagnostic for this species were found during a focused burrow survey for burrowing owl. As before, we recommend that a qualified biologist monitor construction when it is occurring adjacent to suitable undeveloped lands to ensure that American badger potential burrows aren't present, and that burrows and badgers aren't impacted if they are present, do not enter the work area and that they are not disturbed if present. If present and unavoidable, CDFW should be consulted. The pallid San Diego pocket mouse is nocturnal and is only positively detectable through focused trapping surveys. Because it is unlikely that significant numbers of this species would be harmed given the narrow direct impacts, we are not recommending focused surveys. In suitable habitat, however, preconstruction surveys are recommended to determine whether burrows suitable for the pallid San Diego pocket mouse are present. If so, the area around them should be avoided. If avoidance is not possible, CDFW should be consulted for guidance, which could include focused surveys.

5.7 Migratory Bird Treaty Act and State Fish and Game Code

Native bird species which may nest on or adjacent to the project area could be subject to direct or indirect impacts from the project. The bird nesting season is generally February 1 through August 31, although nesting birds are always protected. To avoid impacts to such birds, including the special status species which occur or potentially occur onsite (Costa's hummingbird, Cooper's hawk, loggerhead shrike, black-tailed gnatcatcher, vermilion flycatcher, and LeConte's thrasher) we recommend the following: any vegetation removal or grading occurring during the nesting season would require at least one nesting bird survey to be conducted by a qualified biologist no more than three days prior to such activity. If no nests are found, construction would proceed. If active nests are found, impact avoidance measures (*e.g.*, "no work" buffers; sound and/or visual barriers) would be put in place around the nest until young have fledged. This would also apply to offsite nests which may be indirectly impacted. While there is no established protocol for indirect impacts to nests, when consulted, the CDFW often recommends avoidance buffers of about 500 feet for birds-of-prey and listed species, and 100 – 300 feet for other unlisted birds.

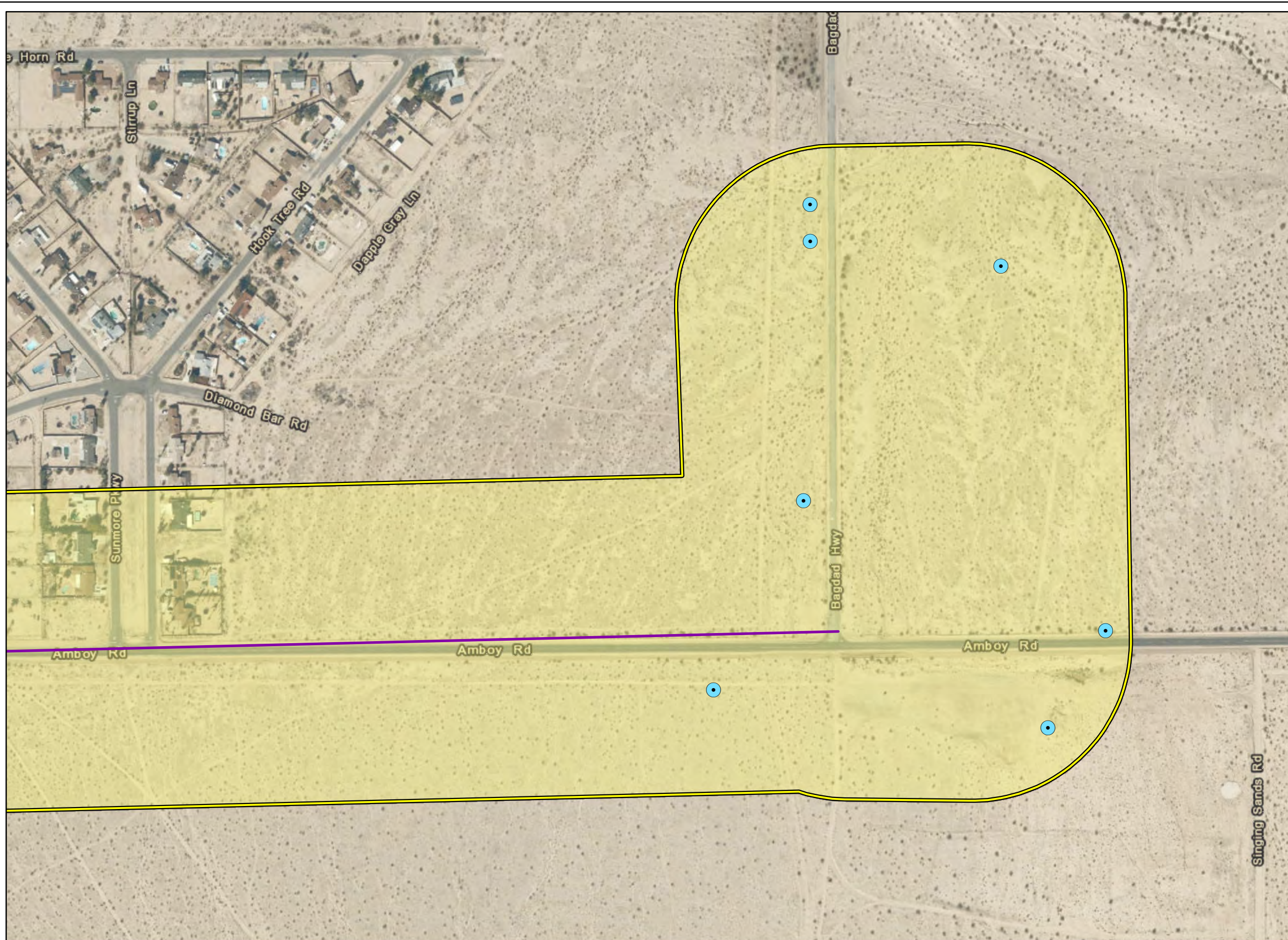
5.8 Burrowing Owl

The burrowing owl is uniquely vulnerable to ground disturbing activities since it both nests and roosts underground. Therefore, additional actions must be taken to protect against impacts to this species. The burrowing owl is also federally designated as a Bird of Conservation Concern and state designated as a Species of Concern. It occurs in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation (Haug et al. 2011). In southern

California, burrowing owls are not only found in undisturbed natural areas, but also follow agricultural fields, margins of active agricultural areas, livestock farms, airports, and vacant lots. It is a subterranean nester, typically utilizing pre-existing burrows (e.g. California ground squirrel (*Otospermophilus beecheyi*), kit fox (*Vulpes macrotis*), drain pipes, culverts, etc.). Burrowing owl occupied burrows and areas can be recognized by sign which includes tracks, molted feathers, cast pellets, prey remains, egg shell fragments, owl white wash, nest burrow decoration materials (e.g., paper, foil, plastic items, livestock or other animal manure, etc.) (CDFG 2012). The species is active both day and night and may be seen perching conspicuously on fence posts or standing at the entrance of their burrows.

Analyses of regional patterns for breeding populations of burrowing owls have detected declines both locally in their central and southern coastal breeding areas, and statewide where the species has experienced breeding range retraction. Threat factors affecting burrowing owl populations include habitat loss, degradation and modification, and eradication of ground squirrels resulting in a loss of suitable burrows required by burrowing owls for nesting, protection from predators, and shelter. Conservation for burrowing owls may include but may not be limited to protecting remaining breeding pairs or providing for population expansion, protecting and enhancing breeding and essential habitat, and amending or augmenting land use plans to stabilize populations and other specific actions to avoid the need to list the species pursuant to the ESA or CESA (CDFG 2012).

Suitable habitat for burrowing owls is present and widespread on the project site. The *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) requires a survey for potential burrows followed by four breeding season surveys of those areas found to have potential burrows for burrowing owl occupation. Those four focused surveys are conducted during the times of day when burrowing owls are most active. These surveys were conducted for the original project area during the 2022 breeding season. Potential burrows were found, but no burrowing owls or their sign were detected (Wood 2022c, Appendix E). A burrow survey was conducted for the new project areas from 12-15 December 2022. Again, potential burrows were found, but no burrowing owls or their sign were detected (Figure 5). Breeding season surveys will need to be conducted in spring and summer 2023.



- Potential BUOW Burrow
- BUOW Survey Area
- Proposed Features**
- Temporary Effluent

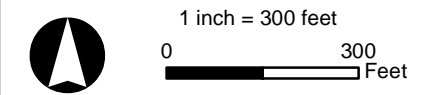
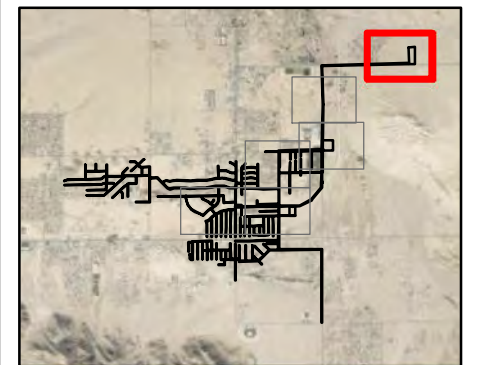
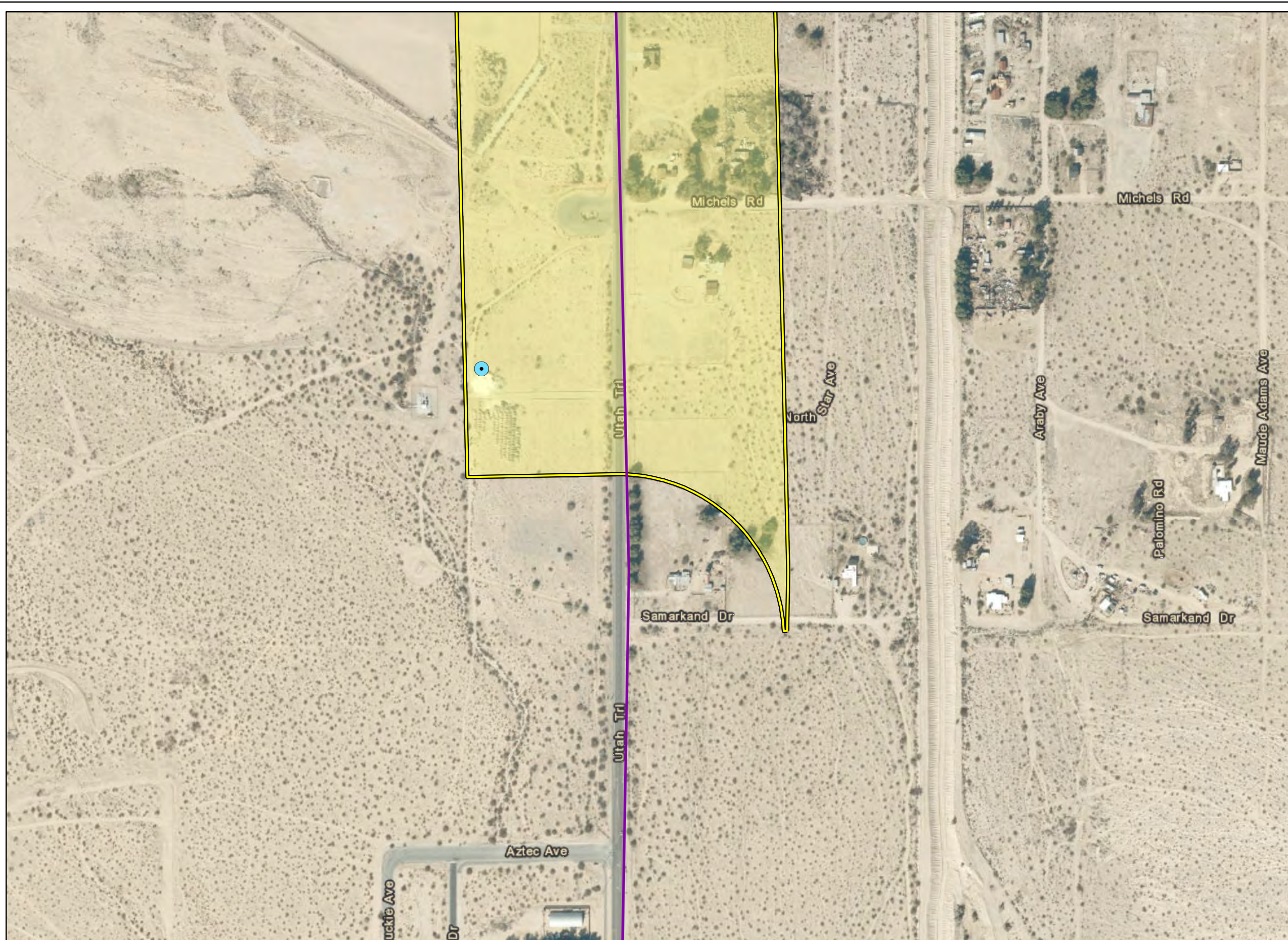


FIGURE 5-1
 December 2022 Burrowing Owl
 Burrow Survey Results
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



- Potential BUOW Burrow
- BUOW Survey Area
- Proposed Features**
- Temporary Effluent

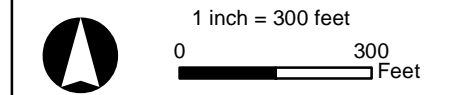
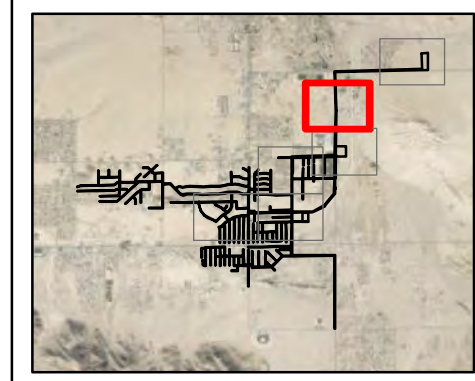
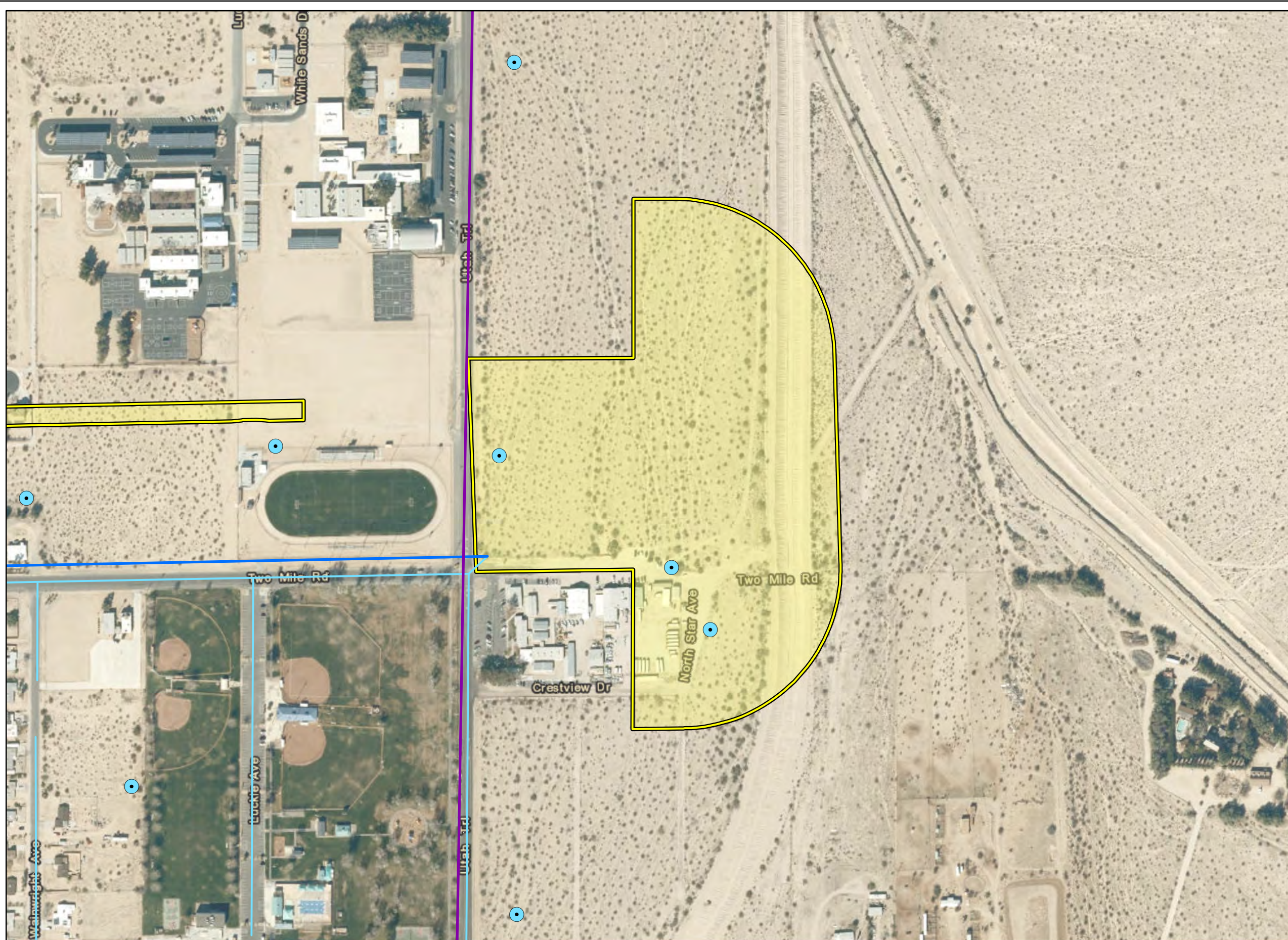


FIGURE 5-2
 December 2022 Burrowing Owl
 Burrow Survey Results
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





- Potential BUOW Burrow
 - BUOW Survey Area
- Proposed Features**
- Collector
 - Force Main
 - Temporary Effluent

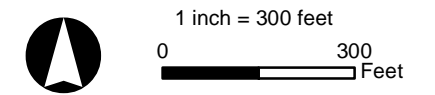
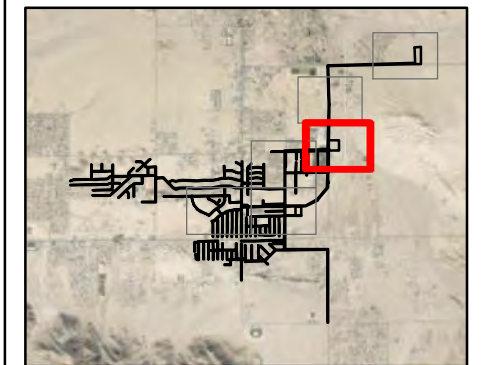
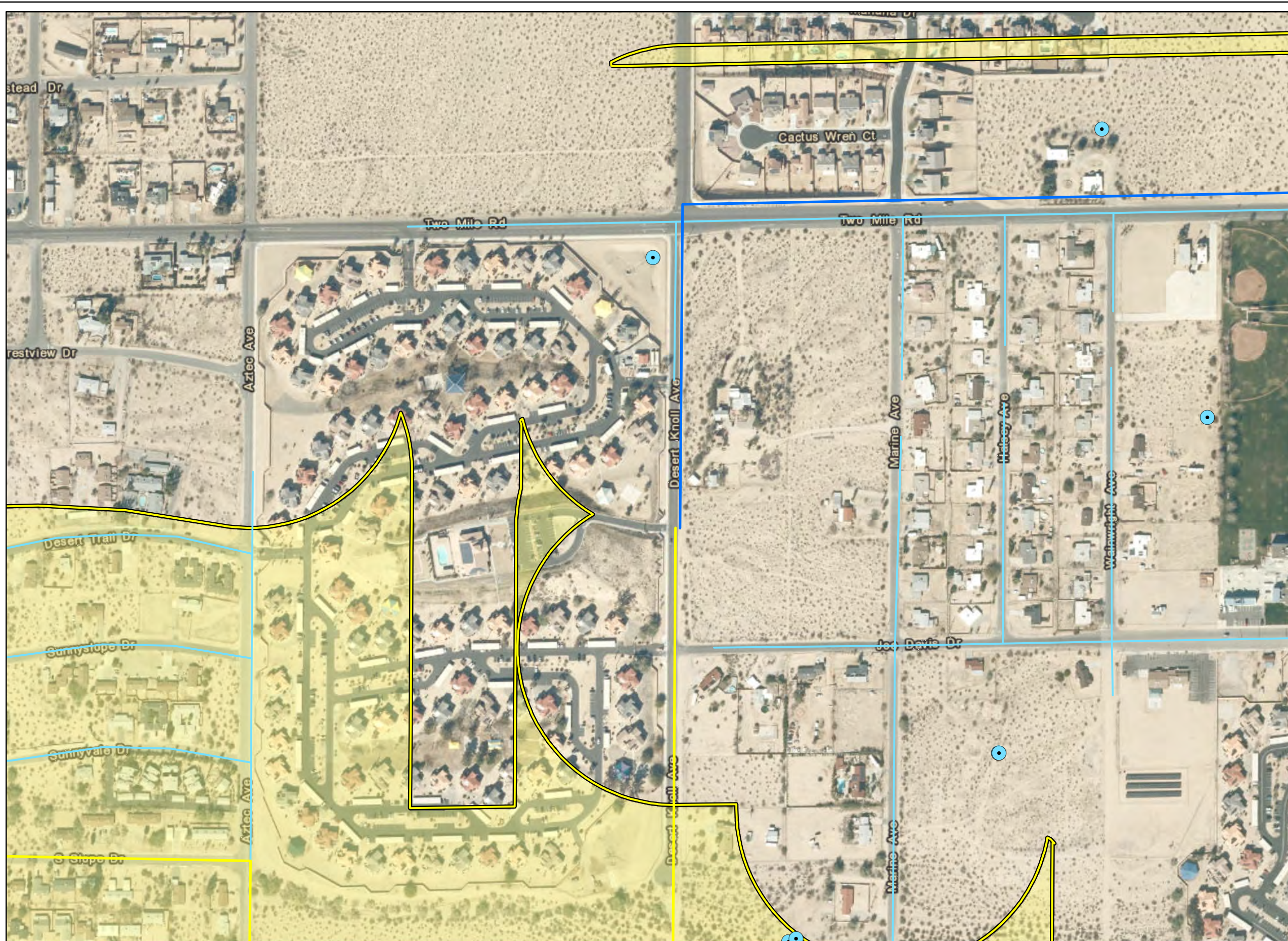


FIGURE 5-3
 December 2022 Burrowing Owl
 Burrow Survey Results
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



- Potential BUOW Burrow
 - BUOW Survey Area
- Proposed Features**
- Collector
 - Force Main
 - Trunk

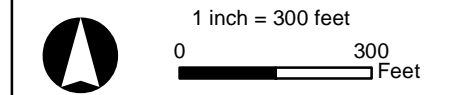
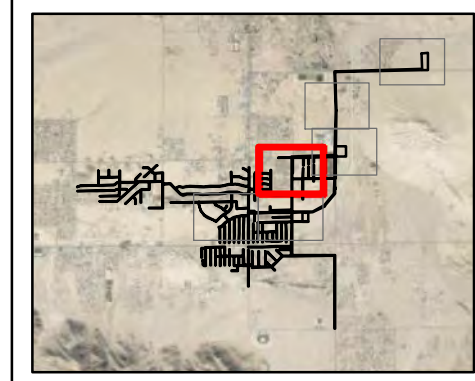


FIGURE 5-4
 December 2022 Burrowing Owl
 Burrow Survey Results
 Twenty-nine Palms Wastewater
 Collection System, Phases 1 and 2
 Twenty-nine Palms, CA





- Potential BUOW Burrow
- BUOW Survey Area
- Proposed Features**
- Alternate Alignment
- Collector
- Trunk

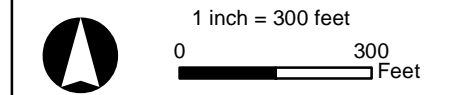
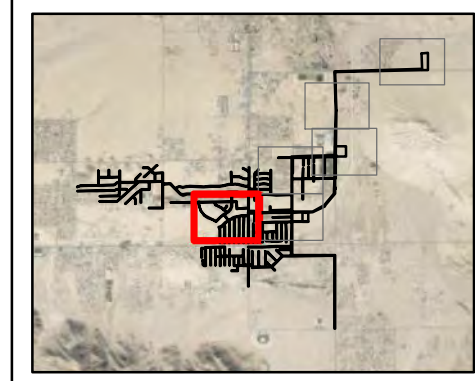
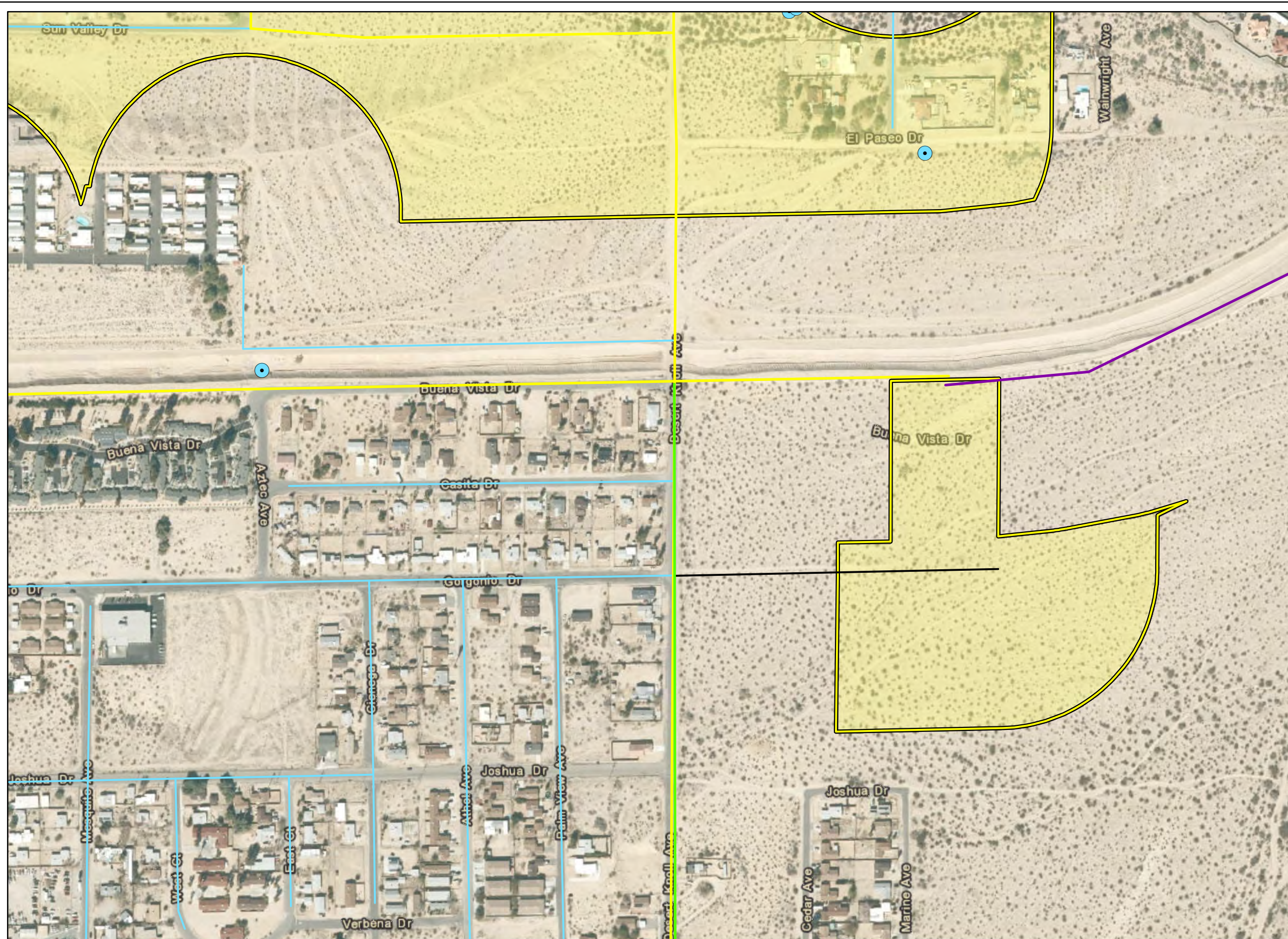


FIGURE 5-5
 December 2022 Burrowing Owl
 Burrow Survey Results
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



- Potential BUOW Burrow
- BUOW Survey Area
- Proposed Features**
- Access Road
- Collector
- Permanent Pumping
- Temporary Effluent
- Trunk

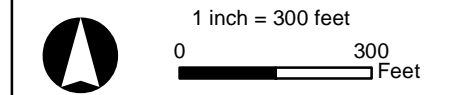
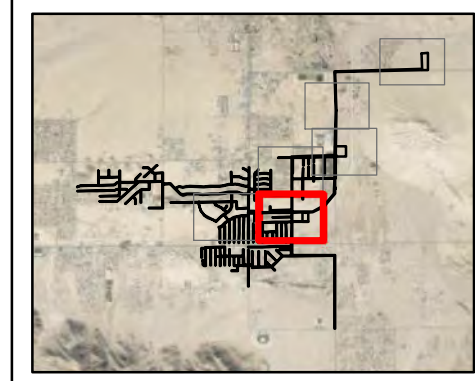


FIGURE 5-6
 December 2022 Burrowing Owl
 Burrow Survey Results
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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Also, where potential habitat is present, CDFG (2012) also requires less extensive preconstruction take avoidance surveys for owls whether or not found by the focused surveys in case the site has been occupied in the interim between the focused surveys and initiation of construction. If burrowing owls are found and are unavoidable, guidelines in CDFG (2012) will need to be followed and consultation with the CDFW may be required.

5.9 Jurisdictional Waters

As noted above, a major flood control channel and other natural drainages are present onsite. The vegetation map (Figure 4) identifies Desert Wash Systems. A jurisdictional delineation report was prepared for the original project configuration (Wood 2022d, Appendix E) which identified potential federal and/or state jurisdictional waters crossing the project area. A new JD addressing the current project configuration is being prepared. Apparent jurisdictional waters are present on the WWTP site at the northeast corner of Amboy Road and Bagdad Highway; on the packaged lift station site at the northeast corner of Two Mile Road and Utah Trail; and in various locations crossed by pipeline routes.

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Wastewater Collection System, Phases A through E
Biological Resources Assessment
February 2023

Appendix A California Natural Diversity Database (CNDDDB) RareFind 5 Report



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Species IS (Calochortus striatus OR Chaetodipus fallax pallidus OR Crotalus ruber OR Desert Fan Palm Oasis Woodland OR Euderma maculatum OR Gopherus agassizii OR Lasiurus xanthinus OR Lasthenia glabrata ssp. coulteri OR Sidalcea neomexicana OR Streptanthus bernardinus OR Wislizenia refracta ssp. refracta OR Taxidea taxus OR Athene cunicularia OR Ayenia compacta OR Ovis canadensis nelsoni OR Saltugilia latimeri OR Linanthus maculatus ssp. maculatus OR Menodora spinescens var. mohavensis OR Antrozous pallidus OR Grusonia parishii OR Rhopalolemma robertsi OR Falco mexicanus OR Monardella robisonii OR Jaffueliobryum wrightii)

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Antrozous pallidus</i> pallid bat	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	-180 7,135	420 S:420	34	42	16	4	12	312	328	92	408	6	6
<i>Athene cunicularia</i> burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	-220 5,730	2011 S:2011	189	456	341	126	78	821	549	1462	1933	48	30
<i>Ayenia compacta</i> California ayenia	G4 S3	None None	Rare Plant Rank - 2B.3 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	200 6,000	74 S:74	2	3	0	0	0	69	35	39	74	0	0
<i>Calochortus striatus</i> alkali mariposa-lily	G3? S2S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden USFS_S-Sensitive	235 5,240	113 S:113	9	24	14	5	4	57	60	53	109	2	2
<i>Chaetodipus fallax pallidus</i> pallid San Diego pocket mouse	G5T3T4 S3S4	None None	CDFW_SSC-Species of Special Concern	150 5,900	79 S:79	2	2	0	0	0	75	76	3	79	0	0
<i>Crotalus ruber</i> red-diamond rattlesnake	G4 S3	None None	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	100 4,200	192 S:192	17	42	12	6	2	113	98	94	190	1	1



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Desert Fan Palm Oasis Woodland</i> Desert Fan Palm Oasis Woodland	G3 S3.2	None None		-80 5,349	80 S:80	0	8	0	0	2	70	80	0	78	0	2
<i>Euderma maculatum</i> spotted bat	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_H-High Priority	-170 10,440	68 S:68	3	5	6	0	0	54	62	6	68	0	0
<i>Falco mexicanus</i> prairie falcon	G5 S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	0 9,400	451 S:451	52	4	0	1	0	394	412	39	451	0	0
<i>Gopherus agassizii</i> desert tortoise	G3 S2S3	Threatened Threatened	IUCN_VU-Vulnerable	200 5,266	985 S:985	68	156	36	10	2	713	156	829	983	2	0
<i>Grusonia parishii</i> Parish's club-cholla	G3G4 S2	None None	Rare Plant Rank - 2B.2	2,772 5,250	45 S:45	4	10	7	6	0	18	8	37	45	0	0
<i>Jaffueliobryum wrightii</i> Wright's jaffueliobryum moss	G5 S2S3	None None	Rare Plant Rank - 2B.3	525 8,600	21 S:21	0	0	0	0	0	21	5	16	21	0	0
<i>Lasiurus xanthinus</i> western yellow bat	G4G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_H-High Priority	-160 3,765	58 S:58	0	0	0	0	0	58	55	3	58	0	0
<i>Lasthenia glabrata ssp. coulteri</i> Coulter's goldfields	G4T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden	3 4,500	111 S:111	7	8	4	2	15	75	67	44	96	14	1
<i>Linanthus maculatus ssp. maculatus</i> Little San Bernardino Mtns. linanthus	G2T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	450 4,000	53 S:53	3	13	4	1	2	30	24	29	51	1	1



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Menodora spinescens var. mohavensis</i> Mojave menodora	G4T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	2,300 4,600	13 S:13	1	3	3	0	0	6	5	8	13	0	0
<i>Monardella robisonii</i> Robison's monardella	G3 S3	None None	Rare Plant Rank - 1B.3 BLM_S-Sensitive	3,000 5,300	37 S:37	6	11	5	2	0	13	26	11	37	0	0
<i>Ovis canadensis nelsoni</i> desert bighorn sheep	G4T4 S3	None None	BLM_S-Sensitive CDFW_FP-Fully Protected USFS_S-Sensitive	964 6,000	46 S:46	1	0	0	0	2	43	45	1	44	0	2
<i>Rhopalolemma robertsi</i> Roberts' rhopalolemma bee	G1 S1	None None		3,700 3,700	1 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Saltugilia latimeri</i> Latimer's woodland-gilia	G3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture USFS_S-Sensitive	400 7,205	60 S:60	3	4	0	1	0	52	17	43	60	0	0
<i>Sidalcea neomexicana</i> salt spring checkerbloom	G4 S2	None None	Rare Plant Rank - 2B.2 USFS_S-Sensitive	10 7,800	30 S:30	0	1	0	0	8	21	26	4	22	7	1
<i>Streptanthus bernardinus</i> Laguna Mountains jewelflower	G3G4 S3S4	None None	Rare Plant Rank - 4.3 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	1,400 7,800	22 S:22	1	5	1	0	0	15	22	0	22	0	0
<i>Taxidea taxus</i> American badger	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	-225 10,500	594 S:594	64	85	29	11	1	404	389	205	593	0	1
<i>Wislizenia refracta ssp. refracta</i> jackass-clover	G5T5? S1	None None	Rare Plant Rank - 2B.2	1,250 3,800	6 S:6	0	0	0	0	0	6	3	3	6	0	0

Wastewater Collection System, Phases A through E
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Appendix B Information for Planning and Consultation (IPaC) Report



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901
<http://www.fws.gov/carlsbad/>

In Reply Refer To:
Project Code: 2022-0037550
Project Name: Proposed Sewer

April 29, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A biological assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a biological assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a biological assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found at the Fish and Wildlife Service's Endangered Species Consultation website at:

<https://www.fws.gov/endangered/what-we-do/faq.html>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Carlsbad Fish And Wildlife Office

2177 Salk Avenue - Suite 250

Carlsbad, CA 92008-7385

(760) 431-9440

Project Summary

Project Code: 2022-0037550

Event Code: None

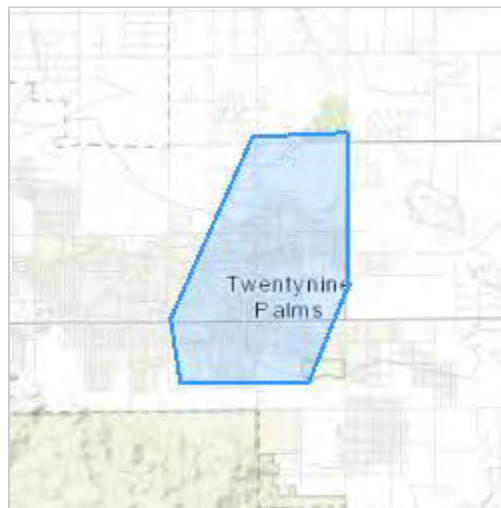
Project Name: Proposed Sewer

Project Type: Wastewater Pipeline - New Constr - Below Ground

Project Description: City sewer system. This project is at a very preliminary stage and work with the US Marine Corps is an option, not a done deal.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@34.15354295,-116.04882879653991,14z>



Counties: San Bernardino County, California

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Reptiles

NAME	STATUS
Desert Tortoise <i>Gopherus agassizii</i> Population: Wherever found, except AZ south and east of Colorado R., and Mexico There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4481	Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: Wood
Name: John Green
Address: 1845 Chicago Ave., Ste D
City: Riverside
State: CA
Zip: 92507
Email: bewickwren@earthlink.net
Phone: 9513698060

Lead Agency Contact Information

Lead Agency: Marine Corps

Appendix C Site Photographs

Wastewater Collection System, Phases A through E
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Photo 1. View from western project area. Creosote bush scrub.



Photo 2. Eastern project area. Creosote bush scrub on proposed package lift station site.

Wastewater Collection System, Phases A through E
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Photo 3. Northeastern project area. Creosote bush scrub on wastewater treatment plant site.

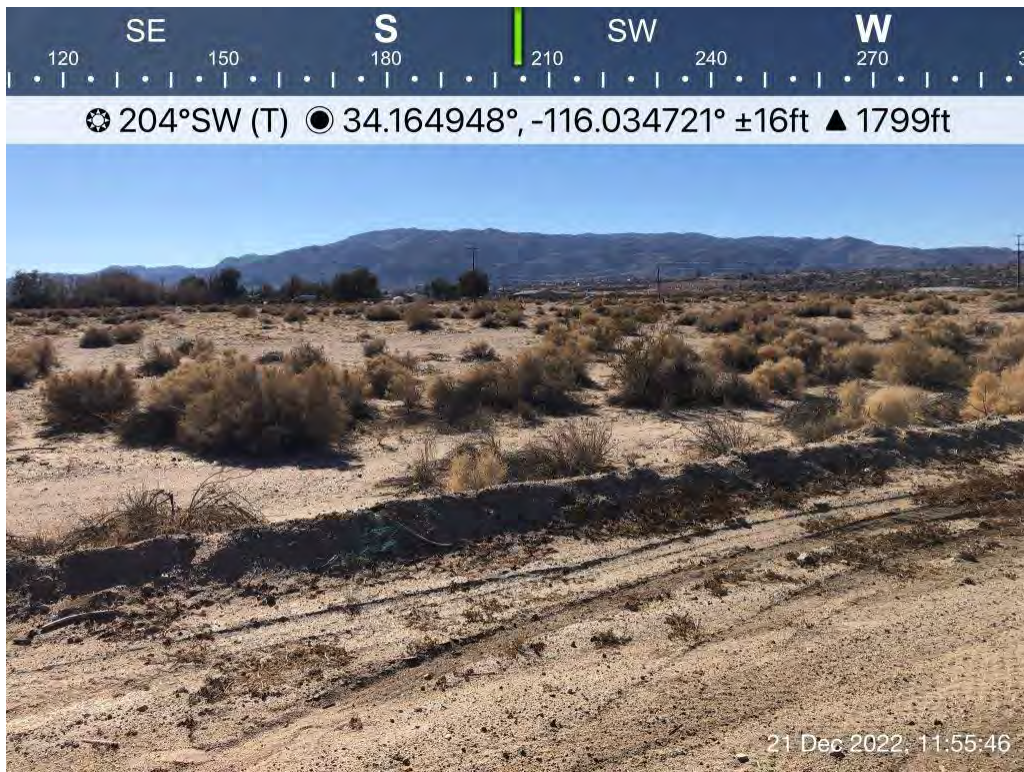


Photo 4. View from northeastern project area. Saltbush scrub.



Photo 5. View upstream of flood control channel (Desert Wash System) from Utah Trail.



Photo 6. Mixed Saltbush Scrub/Creosote Bush Scrub in southeastern project area.



Photo 7. Example of potential burrowing owl habitat (concrete rubble).



Photo 8. Desert milkweed (*Asclepias erosa*). Monarch butterfly larval foodplant.

Wastewater Collection System, Phases A through E
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Photo 9. Special status plant species Utah vine milkweed. Spring 2022.



Photo 10. Luckie Park area of eastern project. Good trees for nesting birds.



Photo 11. Cooper's hawk. Incidentally detected special status species.



Photo 12. Vermilion Flycatcher. Incidentally detected special status species.

Appendix D Wildlife and Plant Species Observed During Surveys

Plant Species Observed

GYMNOSPERMS (GYMNOSPERMAE)

Ephedraceae

Ephedra californica

EUDICOTS (EUDICOTIDAE)

Amaranthaceae

Amaranthus blitoides

Tidestromia suffruticosa var. *oblongifolia*

Apocynaceae

Asclepias erosa

Asclepias subulata

***Funastrum utahense*

Asteraceae

Ambrosia acanthicarpa

Ambrosia dumosa

Ambrosia salsola

Baileya multiradiata

Bebbia juncea var. *aspera*

Chaenactis fremontii

Chaenactis stevioides

Dicoria canescens

Encelia farinosa

Encelia frutescens

Geraea canescens

Isocoma acradenia

**Lactuca serriola*

Laennecia coulteri

Malacothrix glabrata

Palafoxia arida

Rafinesquia neomexicana

**Sonchus asper* ssp. *asper*

Stephanomeria pauciflora

Bignoniaceae

Chilopsis linearis ssp. *arcuata*

Boraginaceae

Amsinckia tessellata

Cryptantha dumetorum

Greeneocharis circumscissa

Johnstonella angustifolia

Pectocarya platycarpa

Ephedra Family

desert tea

Amaranth Family

procumbent pigweed

honeysweet

Dogbane and Milkweed Family

desert milkweed

rush milkweed

Utah vine milkweed

Sunflower Family

annual bur-sage

white bur-sage

cheesebush

desert marigold

sweetbush

Fremont pincushion

desert pincushion

desert twinbugs

brittlebush

button brittlebush

desert-sunflower

alkali goldenbush

prickly lettuce

Coulter's horseweed

desert dandelion

Spanish-needle

desert chicory

prickly sow thistle

wire-lettuce

Trumpet-Creeper Family

desert willow

Borage Family

bristly fiddleneck

scrambling cryptantha

cushion cryptantha

narrow-leaved Johnstonella

wide-toothed pectocarya

Brassicaceae

**Brassica tournefortii*
Lepidium densiflorum
Lepidium fremontii
**Sisymbrium irio*
**Sisymbrium orientale*
Streptanthella longirostris

Cactaceae

Cylindropuntia bigelovii
Cylindropuntia echinocarpa
**Cylindropuntia fulgida*
Cylindropuntia ramosissima
Echinocereus engelmannii
Ferocactus cylindraceus
Opuntia basilaris

Caryophyllaceae

Achyronychia cooperi

Chenopodiaceae

Atriplex canescens
Atriplex polycarpa
**Chenopodium murale*
**Salsola tragus*
Suaeda nigra

Cleomaceae

Peritoma arborea

Cucurbitaceae

Cucurbita palmata

Ehretiaceae

Tiquilia plicata

Euphorbiaceae

Croton californicus
**Euphorbia maculata*
Euphorbia polycarpa

Fabaceae

Caesalpinia gilliesii
Dalea mollissima
**Parkinsonia aculeata*
Parkinsonia florida
Prosopis glandulosa var. *torreyana*
Psoralea argophylla
Senegalia greggii
Senna armata

Mustard Family

Sahara mustard
common pepperweed
desert pepperweed
London rocket
Indian hedgemustard
longbeak streptanthella

Cactus Family

teddy-bear cholla
golden/silver cholla
jumping cholla
pencil cactus
Engelmann's hedgehog cactus
California barrel cactus
beavertail pricklypear

Pink Family

frost-mat

Goosefoot Family

four-wing saltbush
allscale saltbush
nettleleaf goosefoot
Russian thistle
bush seepweed

Spiderflower Family

bladderpod

Gourd and Melon Family

coyote melon

Ehretia Family

fan-leaved tiquilia

Spurge Family

California croton
spotted spurge
smallseed sandmat

Legume Family

bird-of-paradise
soft prairie clover
Mexican palo verde
blue palo verde
honey mesquite
smoke tree
catclaw
spiny senna

Geraniaceae

**Erodium cicutarium*

Hydrophyllaceae

Phacelia crenulata

Phacelia cf. tanacetifolia

Krameriaceae

Krameria bicolor

Lamiaceae

Condea emoryi

Salvia columbariae

Scutellaria mexicana

Loasaceae

Mentzelia albicaulis

Malvaceae

Eremalche exilis

**Malva parviflora*

Sphaeralcea ambigua

Nyctaginaceae

Abronia villosa var. *villosa*

Allionia incarnata

Boerhavia coccinea

Onagraceae

Chylismia claviformis

Eremothera boothii ssp. *desertorum*

Oenothera deltoides

Orobanchaceae

Aphyllon cooperi

Papaveraceae

Eschscholzia minutiflora

Polygonaceae

Chorizanthe brevicornu

Chorizanthe rigida

Eriogonum deflexum

Eriogonum inflatum

Eriogonum reniforme

Eriogonum thomasii

Rosaceae

Petalonyx thurberi

Simmondsiaceae

Simmondsia chinensis

Geranium Family

redstem filaree

Waterleaf Family

cleftleaf wildheliotrope

lacy phacelia

Rhatany Family

white rhatany

Mint Family

desert lavender

chia

bladder-sage

Loasa Family

whitestem blazingstar

Mallow Family

white mallow

cheeseweed

desert globemallow

Four-o'clock Family

desert sand verbena

trailing windmills

scarlet spiderling

Evening-Primrose Family

browneyes

desert suncup

Devil's lantern

Broom-Rape Family

desert broomrape

Poppy Family

pygmy poppy

Buckwheat Family

brittle spineflower

Devil's spineflower

skeleton weed

desert trumpet

kidney-leaf wild buckwheat

Thomas' wild buckwheat

Loasa Family

sandpaper-plant

Jobba Family

jojoba

Solanaceae

Datura wrightii
**Nicotiana glauca*
Lycium cooperi

Tamaricaceae

**Tamarix aphylla*
**Tamarix ramosissima*

Viscaceae

Phoradendron californicum

Zygophyllaceae

Larrea tridentata

MONOCOTS (MONOCOTYLEDONAE)

Arecaceae

^*Washingtonia* sp.

Agavaceae

Yucca schidigera

Poaceae

Aristida purpurea
**Bromus rubens*
**Cynodon dactylon*
Dasyochloa pulchella
Festuca octoflora
Hilaria rigida
**Hordeum murinum*
**Pennisetum setaceum*
**Schismus* sp.

Nightshade Family

sacred thorn-apple
tree tobacco
peach thorn

Tamarisk Family

athel
saltcedar

Mistletoe Family

desert mistletoe

Caltrop Family

creosote bush

Palm Family

fan palm

Century Plant Family

Mojave yucca

Grass Family

purple three-awn
red brome
Bermuda grass
low woollygrass
sixweeks grass
big galleta
wall barley
crimson fountain grass
Mediterranean grass

^Fan palms onsite were seedlings and presumed to have sprouted from the seeds of palms planted as landscaping on surrounding developments. They could potentially be *Washingtonia* native to California, but they are not native at this location.

Vertebrate Species Observed

REPTILIA

Eublepharidae

Coleonyx variegatus

Iguanidae

Dipsosaurus dorsalis

Phrynosomatidae

Uta stansburiana

Callisaurus draconoides

Sceloporus uniformis

Teiidae

Aspidoscelis tigris

Colubridae

Pituophis catenifer

Chionactis occipitalis

Viperidae

Crotalus cerastes

AVES

Odontophoridae

Callipepla gambelii

Columbidae

**Columba livia*

**Streptopelia decaocto*

Zenaida asiatica

Zenaida macroura

Cuculidae

Geococcyx californianus

Caprimulgidae

Chordeiles acutipennis

Trochilidae

Calypte anna

***Calypte costae*

***Selasphorus rufus*

Charadriidae

Charadrius vociferus

Laridae

Larus sp.

Cathartidae

Cathartes aura

REPTILES

Eyelid Geckos

western banded gecko

Iguanas

desert iguana

Spiny Lizards

common side-blotched lizard

zebra-tailed lizard

yellow-backed spiny lizard

Whiptails and Relatives

tiger whiptail

Colubrid Snakes

gopher snake

western shovel-nosed snake

Vipers

sidewinder

BIRDS

New World Quail

Gambel's quail

Pigeons and Doves

rock pigeon

Eurasian collared dove

white-winged dove

mourning dove

Cuckoos, Roadrunners, and Anis

greater roadrunner

Nightjars

lesser nighthawk

Hummingbirds

Anna's hummingbird

Costa's hummingbird

rufous hummingbird

Plovers

killdeer

Gulls, Terns, and Skimmers

unidentified gull

New World Vultures

turkey vulture

Accipitridae

***Accipiter cooperii*
Buteo jamaicensis

Picidae

Colaptes auratus
Dryobates scalaris

Falconidae

Falco sparverius

Tyrannidae

Myiarchus cinerascens
Tyrannus verticalis
Contopus sordidulus
Sayornis nigricans
Sayornis saya
***Pyrocephalus rubinus*

Corvidae

Corvus corax

Remizidae

Auriparus flaviceps

Alaudidae

Eremophila alpestris

Hirundinidae

Tachycineta bicolor

Regulidae

Corthylio calendula

Ptilonotidae

Phainopepla nitens

Poliopitidae

Poliopitila caerulea
***Poliopitila melanura*

Troglodytidae

Thryomanes bewickii
Campylorhynchus brunneicapillus

Mimidae

***Toxostoma lecontei*
Mimus polyglottos

Sturnidae

**Sturnus vulgaris*

Hawks and Eagles

Cooper's hawk
red-tailed hawk

Woodpeckers

northern flicker
ladder-backed woodpecker

Falcons

American kestrel

Tyrant Flycatchers

ash-throated flycatcher
western kingbird
western wood-pewee
black phoebe
Say's phoebe
vermillion flycatcher

Crows and Jays

common raven

Penduline Tits and Verdins

verdin

Larks

horned lark

Swallows

tree swallow

Kinglets

ruby-crowned kinglet

Silky-flycatchers

phainopepla

Gnatcatchers and Gnatwrens

blue-gray gnatcatcher
black-tailed gnatcatcher

Wrens

Bewick's wren
cactus wren

Mockingbirds and Thrashers

LeConte's thrasher
northern mockingbird

Starlings

European starling

Turdidae

Catharus ustulatus
Turdus migratorius

Passeridae

**Passer domesticus*

Fringillidae

Haemorhous mexicanus
Spinus psaltria

Passerellidae

Amphispiza bilineata
***Spizella breweri*
Zonotrichia leucophrys
Passerculus sandwichensis

Icteridae

Icterus bullockii
Agelaius phoeniceus
Molothrus ater
Euphagus cyanocephalus
Quiscalus mexicanus

Parulidae

Leiothlypis celata
Setophaga coronata
Cardellina pusilla

Cardinalidae

Piranga ludoviciana

MAMMALIA

Leporidae

Lepus californicus
Sylvilagus audubonii

Sciuridae

Ammospermophilus leucurus
Otospermophilus beecheyi
Xerospermophilus tereticaudus

Canidae

Canis latrans

Rodentia

≥ one fossorial species (includes *Dipodomys* sp.)

Cricetidae

Neotoma sp.

Thrushes

Swainson's thrush
American robin

Old World Sparrows

house sparrow

Fringilline & Cardueline Finches & Allies

house finch
lesser goldfinch

New World Sparrows

black-throated sparrow
Brewer's sparrow
white-crowned sparrow
savannah sparrow

Blackbirds

Bullock's oriole
red-winged blackbird
brown-headed cowbird
Brewer's blackbird
great-tailed grackle

Wood-Warblers

orange-crowned warbler
yellow-rumped warbler
Wilson's warbler

Cardinals and Allies

western tanager

MAMMALS

Rabbits

black-tailed jackrabbit
desert cottontail

Squirrels

white-tailed antelope ground squirrel
California ground squirrel
round-tailed ground squirrel

Coyotes, Dogs and Wolves

coyote

Rodents

burrows

Mice, Rats and Voles

woodrat (middens)

Wastewater Collection System, Phases A through E
Biological Resources Assessment
February 2023

KEY

- * = non-native species
- ** = special-status species
- cf. = compares favorably with
- sp. = plant identified to genus only

This list reports only plants and animals observed on the site by this study. Other species may have been overlooked or undetectable due to their growing season (plants) or their activity patterns and/or subterranean habitats (animals). Plants were identified from keys, descriptions and drawings in the Jepson Flora Project (2022). Plant nomenclature and systematics follows the Jepson Flora Project and/or United States Department of Agriculture, Natural Resources Conservation Service (2022). Nomenclature and taxonomy for fauna follows California Bird Records Committee (2022) for avifauna and California Department of Fish and Wildlife (2016a) for herpetofauna and mammals.

Appendix E Biological Reports Prepared for Previous, Overlapping Project Site

**WASTEWATER COLLECTION SYSTEM, PHASES 1 AND 2
BIOLOGICAL RESOURCES ASSESSMENT**



CITY OF TWENTYNINE PALMS, SAN BERNARDINO COUNTY, CALIFORNIA

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19 January 2023

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Appendix B	Information for Planning and Consultation (IPaC) Report
Appendix C	Site Photographs
Appendix D	Wildlife and Plant Species Observed During Surveys

1.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, Inc. (Wood) was contracted by Terra Nova Planning and Research to conduct a biological resources assessment at the site of Phases 1 and 2 of a proposed wastewater collection system project (project) in Twentynine Palms, San Bernardino County, California. This biological resources assessment report (BRAR) provides methods, results, and discussion of the assessment.

1.1 Project Location and Topography

The project is entirely within the City of Twentynine Palms, San Bernardino County, California (see Figure 1). It is located primarily on the 7.5-minute Twentynine Palms, Calif. United States Geological Survey (USGS) quadrangle extending slightly south into the Queen Mountain, Calif. USGS quadrangle. It is in Township 1 North, Range 9 East, in portions of Sections 15, 16, 20-22, 27-29, 32 and 33 (see Figure 2). Project topography is roughly level overall, with some low hills in the southwestern area. Elevations range from approximately 1,795 feet (547 meters) in the northeast to 2,140 feet (652 meters) in the southwest. The land within the study area generally slopes from the southwest to the northeast (NV5 2022).

1.2 Project Description

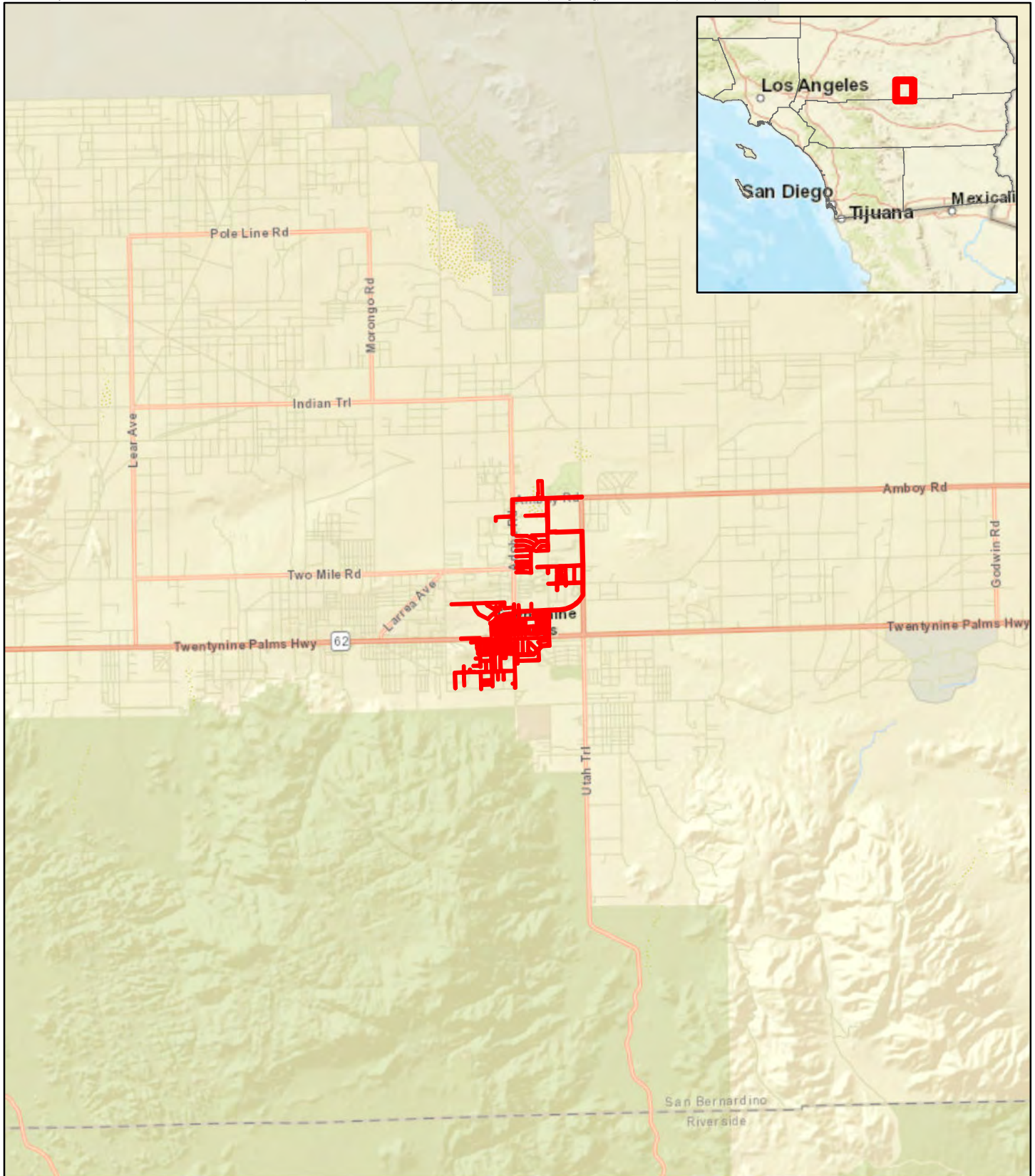
Phase 1 includes:

- Trunk sewers for Phase 1.
- Collector sewers for Phase 1.
- Two existing package treatment plants for the Turtle Rock and Desert Knoll Developments.
- The two large dense military housing developments on Two Mile Road and Joe Davis Drive.
- The residential area northeast of the Adobe Road – Two Mile Road intersection.
- The commercial area on Adobe Road and Amboy Road north of Samarkand Drive.

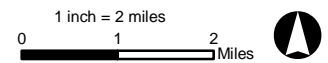
Phase 2 includes:

- Trunk sewers for Phase 2.
- Collector sewers for Phase 2.
- Two planned package treatment plants for project Phoenix and the Wander Hotel.
- The dense downtown area east of Donnell Hill. This area has a balanced mix of both residential and commercial land use.

A potential wastewater treatment plant (WWTP) Site 1 is also included. See Figure 3 for a project overview.



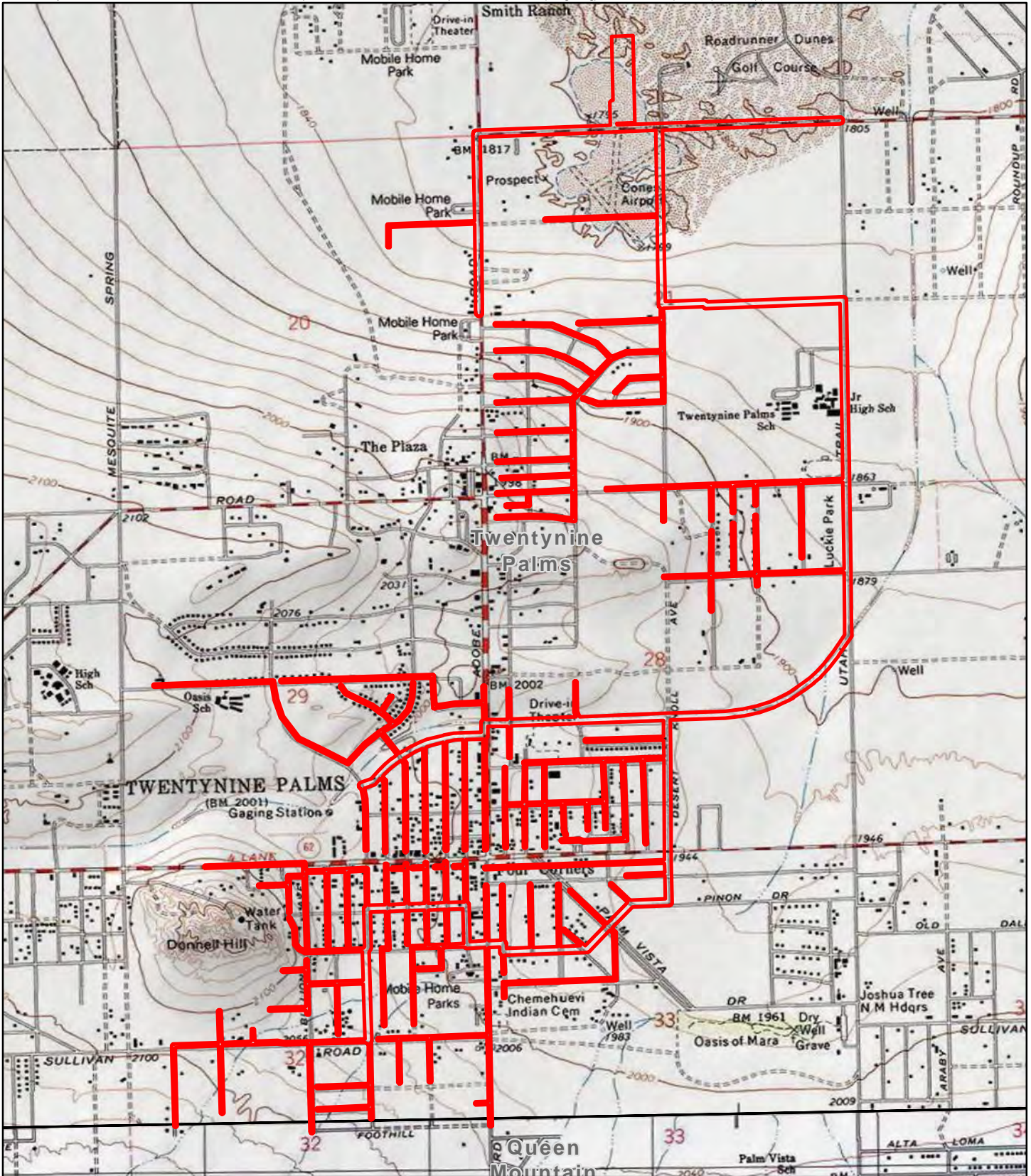
Path: \\sdg1-fs1\gis\3554_NaturalResources\TerraNova_29Palms_SewerLine_322520122\MXD\ReportFigures\BRAR\Fig1_Regional.mxd, aaron.johnson 1/12/2023



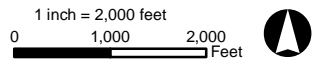
 Project Area

FIGURE 1
Regional Vicinity
Twentynine Palms Sanitation
Sewer Trunk Line Project
Twentynine Palms, CA

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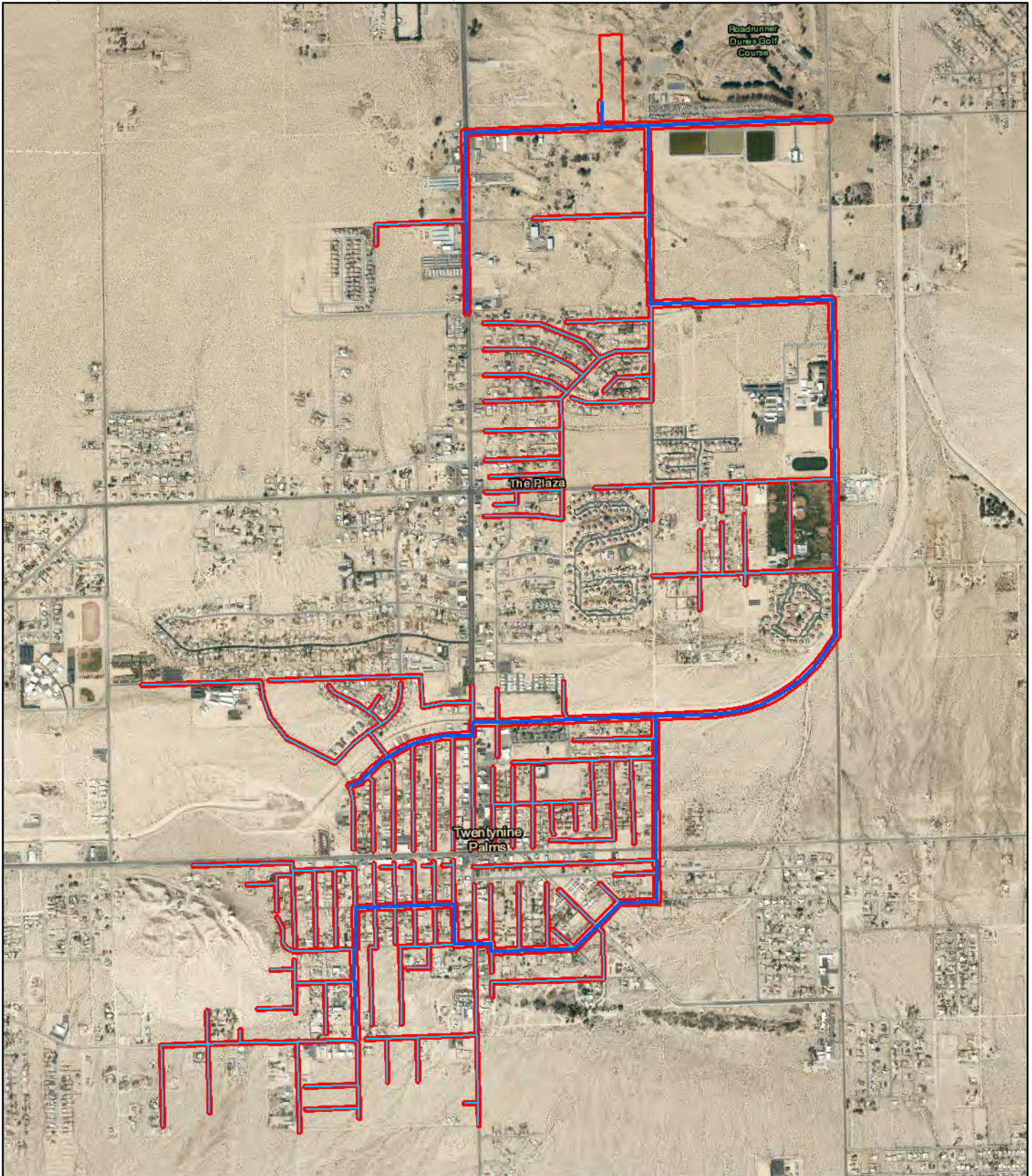
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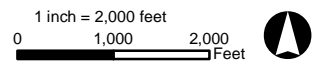
 Project Area

FIGURE 2
USGS 7.5" Topo Quad: Twentynine Palms
Twentynine Palms Sanitation
Sewer Trunk Line Project
Twentynine Palms, CA

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-  Proposed Trunk Sewer
-  Proposed Collector Sewer
-  Project Area

FIGURE 3
Project Overview
Twentynine Palms Sanitation
Sewer Trunk Line Project
Twentynine Palms, CA

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2.0 REGULATORY FRAMEWORK

2.1 Federal

Endangered Species Act (ESA) – The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service are the designated federal agencies accountable for administering the ESA. The ESA defines species as “endangered” or “threatened” and provides regulatory protection at the federal level.

- Section 9 of the ESA prohibits the “take” of listed (i.e., endangered or threatened) species. The ESA definition of take is “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct.” Recognizing that take cannot always be avoided, Section 10(a) includes provisions for take that is incidental to, but not the purpose of, otherwise lawful activities. Specifically, Section 10(a) (1) (A) permits (authorized take permits) are issued for scientific purposes. Section 10(a) (1) (B) permits (incidental take permits) are issued for the incidental take of listed species that does not jeopardize the species.
- Section 7 (a) (2) requires federal agencies to evaluate the proposed project with respect to listed or proposed listed, species and their respective critical habitats (if applicable). Federal agencies must employ programs for the conservation of listed species and are prohibited from authorizing, funding, or carrying out any action that would jeopardize a listed species or destroy or modify its “critical habitat.”

As defined by the ESA, “individuals, organizations, states, local governments, and other non-federal entities are affected by the designation of critical habitat only if their actions occur on federal lands, require a federal permit, license, or other authorization, or involve federal funding.

Migratory Bird Treaty Act (MBTA) – Treaties signed by the U.S., Great Britain, Mexico, Japan, and the republics of the former Soviet Union make it unlawful to pursue, capture, kill, and/or possess, or attempt to engage in any such conduct to any migratory bird, nest, egg or parts thereof listed in this document. As with the ESA, the MBTA also allows the Secretary of the Interior to grant permits for the incidental take of these protected migratory bird species. Impacts include direct disturbance to/destruction of nests, eggs, and birds as well as indirect effects such as loud construction noises (e.g., drilling, operation of heavy equipment, etc. in excess of 60 dB at the nest site) and increased site activities (e.g., moving vehicles, use of guard dogs, presence of personnel) in close proximity to active nests.

National Environmental Policy Act (NEPA) – Portions of the proposed project could fall under the jurisdiction of a federal agency (i.e., U.S. Army Corps of Engineers). The NEPA establishes certain criteria that must be adhered to for any project that is “financed, assisted, conducted or approved by a federal agency. The federal lead agency is required to “determine whether the proposed action will significantly affect the quality of the human environment.”

Section 404 of the Clean Water Act (CWA) – This section of the CWA, administered by the U.S. Army Corps of Engineers (USACE), regulates the discharge of dredged and fill material into “waters of the United States.” The USACE has created a series of nationwide permits that authorize certain activities within waters of the U.S. provided that the proposed activity does not exceed the impact threshold for each of the permits, takes steps to avoid impacts to wetlands where practicable, minimize potential impacts to wetlands, and provide compensation for any remaining, unavoidable impacts through activities to restore or create wetlands. For projects that exceed the threshold for nationwide permits, individual permits under Section 404 can be issued.

2.2 State of California

Regional Water Quality Control Board – The Regional Water Quality Control Board (RWQCB) regulates activities pursuant to Section 401(a)(1) of the CWA. Section 401 of the CWA specifies that certification from the State is required for any applicant requesting a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities that may result in any discharge into navigable waters. Through the Porter Cologne Water Quality Control Act, the RWQCB asserts jurisdiction over Waters of the State of California (WSC) which is generally the same as WUS, but may also include isolated waterbodies. The Porter Cologne Act defines WSC as “surface water or ground water, including saline waters, within the boundaries of the state”.

Sections 1600-1603 of the State Fish and Game Code – The California Fish and Game Code, pursuant to Sections 1600 through 1603, regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife resources. Under state code, a stream is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel with hydro geomorphology distinct top-of-embankment to top-of-embankment limits, that may or may not support fish or other aquatic biota. Included in this definition are watercourses with surface or subsurface flows that support, or have supported in the past, riparian vegetation. Specifically, Section 1601 governs public projects, while Section 1603 governs private discretionary actions. The California Department of Fish and Wildlife (CDFW) requires that public and private interests apply for a “Streambed Alteration Agreement” for any project that may impact a streambed or wetland. The CDFW has maintained a “no net loss” policy regarding impacts to streams and waterways and requires replacement of lost habitats of at least a 1:1 ratio.

California Endangered Species Act (CESA) – This legislation is similar to the federal ESA, however it is administered by the CDFW. The CDFW is authorized to enter into “memoranda of understanding” with individuals, public agencies, and other institutions to import, export, take, or possess state-listed species for scientific, educational, or management purposes. The CESA prohibits the take of state-listed species except as otherwise provided in state law. Unlike the

federal ESA, the CESA applies the take prohibitions to species currently petitioned for state-listing status (candidate species). State lead agencies are required to consult with the CDFW to ensure that actions are not likely to jeopardize the continued existence of any state-listed species or result in the destruction or degradation of occupied habitat.

Section 2081 of the State Fish and Game Code – Under Section 2081 of the California Fish and Game Code, the CDFW authorizes individuals or public agencies to import, export, take, or possess state endangered, threatened, or candidate species in California through permits or memoranda of understanding. These acts, which are otherwise prohibited, may be authorized through permits or “memoranda of understanding” if (1) the take is incidental to otherwise lawful activities, (2) impacts of the take are minimized and fully mitigated, (3) the permit is consistent with regulations adopted in accordance with any recovery plan for the species in question, and (4) the applicant ensures suitable funding to implement the measures required by the CDFW. The CDFW shall make this determination based on the best scientific information available and shall include consideration of the species’ capability to survive and reproduce.

California Environmental Quality Act (CEQA) – The basic goal of the CEQA is to retain a high-quality environment now and in the future. The specific goals are for California's public agencies to:

- Identify the significant environmental effects of their actions; and, either
- Avoid those significant environmental effects, where feasible; or
- Mitigate those significant environmental effects, where feasible.

The CEQA applies to "projects" proposed to be undertaken or requiring approval by State and/or local governmental agencies. projects are activities which have the potential to have a physical impact on the environment and may include the enactment of zoning ordinances, the issuance of conditional use permits and the approval of tentative subdivision maps. Where a project requires approvals from more than one public agency, the CEQA requires one of these public agencies to serve as the "lead agency."

A "lead agency" must complete the environmental review process required by the CEQA. The most basic steps of the environmental review process are:

- Determine if the activity is a "project" subject to the CEQA;
- Determine if the "project" is exempt from the CEQA;
- Perform an Initial Study to identify the environmental impacts of the project and determine whether the identified impacts are "significant". Based on its findings of "significance", the lead agency prepares one of the following environmental review documents:
 - Negative Declaration if it finds no "significant" impacts;

- Mitigated Negative Declaration if it finds "significant" impacts but revises the project to avoid or mitigate those significant impacts;
- Environmental Impact Report (EIR) if it finds "significant" impacts.

While there is no ironclad definition of "significance", Article 5 of the CEQA Guidelines provides criteria to lead agencies in determining whether a project may have significant effects.

The purpose of an EIR is to provide state and local agencies and the public with detailed information on the potentially significant environmental effects which a proposed project is likely to have and to provide ways in which those effects may be minimized and indicate alternatives to the project.

Sections of the State Fish and Game Code pertaining to the protection of birds – Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3505.5 makes it unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds-of-prey, i.e.: owls, hawks, eagles, etc.) or to take, possess, or destroy the nest or eggs of any bird-of-prey. Section 3513 makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA.

The Native Plant Protection Act (NPPA) – The NPPA includes measures to preserve, protect, and enhance rare and endangered native plant species. Definitions for "rare and endangered" are different from those contained in the CESA. However, the list of species afforded protection in accordance with the NPPA includes those listed as rare and endangered under the CESA. The NPPA provides limitations on take as follows: "no person will import into this state, or take, possess, or sell within this state" any rare or endangered native plants, except in accordance with the provisions outlined in the act. If a landowner is notified by the CDFW, pursuant to section 1903.5 that a rare or endangered plant species is growing on their property, the landowner shall notify the CDFW at least 10 days prior to the changing of land uses to allow the CDFW to salvage the plants.

3.0 METHODS

3.1 Literature Review and Records Search

A literature review and record search were conducted to identify occurrences of special status biological resources in the project vicinity. The review included:

- A report from the CDFW's California Natural Diversity Data Base (CNDDDB) for a five-mile radius of the project site (CDFW 2022),
- The California Native Plant Society (CNPS) including records from the following California USGS 7.5-minute topographic quadrangles within five miles of the project: 29 Palms, Queen Mountain, Sunfair, Indian Cove, 29 Palms Mountain, and Valley Mountain (CNPS 2022),
- The USFWS (2022a) Environmental Conservation Online System (ECOS) including critical habitat mapping and an Information for Planning and Consultation (IPaC) report.
- Aerial photographs, and
- Pertinent documents from the Wood library and project files (*e.g.*, other biological surveys from the general vicinity).

3.2 Biological Resources Assessment

Field reconnaissance surveys were conducted by Wood Senior Biologist John F. Green on 22 and 28 March 2022 to evaluate the suitability of existing habitat onsite to support special status biological resources. The assessment conducted on 22 March focused on the trunk lines and a 50-foot buffer on either side and occurred from 1020 to 1510 hours. The 28 March assessment focused on the collector lines and a 25-foot buffer on either side and occurred from 1025 to 1420 hours. The WWTP site was evaluated on 21 December 2022. Green drove the alignments, stopping and walking as necessary, to identify habitats, dominant plant species, and wildlife. All observations were recorded in field notes. Representative photos were taken and are included in Appendix C.

4.0 RESULTS

4.1 Literature Review

The results of the literature review are presented in Tables 1 and 2, along with the results of focused surveys conducted to date. Species which are not known to occur at project elevations are not included.

Table 1. Special Status Plants & Vegetation Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status ¹			Habitat (for plants includes elevational range in meters & blooming period)	Occurrence Probability ²
		Federal	State	CRPR		
Plants						
<i>Ayenia compacta</i>	California ayenia	None	S3	2B.3	Mojavean & Sonoran desert scrub, rocky. 150 - 1095 meters (m). Blooms (B): March - April.	Low-Absent Not found by focused survey
<i>Calochortus striatus</i>	alkali mariposa-lily	None	S2S3	1B.2	Chaparral, chenopod scrub, meadows and seeps, Mojavean desert scrub, alkaline, mesic. 70 - 1595 m. B: April - June.	Low-Absent Not found by focused survey CNDDDB records on project site.
<i>Coryphantha alversonii</i>	Alverson's foxtail cactus	None	S3	4.3	Mojavean and Sonoran desert scrub, usually in granitic areas, sometimes rocky or sandy. 75 - 1525 m. B: April - June (September -October).	Occurs Found during April focused survey.
<i>Eschscholzia androuxii</i>	Joshua tree poppy	None	S3	4.3	Joshua tree "woodland", Mojavean desert scrub on flats, gravelly, rocky, sandy, slopes, washes. 585 - 1685 m. B: February -May (June).	Low-Absent Not found by focused survey
<i>Funastrum utahense</i>	Utah vine milkweed	None	S4	4.2	Mojavean and Sonoran desert scrub, sometimes in gravelly or sandy. 100 - 1435 m. B: (March) April - June (September - October).	Occurs Found during April focused survey.
<i>Galium angustifolium ssp. gracillimum</i>	slender bedstraw	None	S4	4.2	Joshua tree "woodland" and Sonoran desert scrub in granitic or rocky places. 130 - 1550 m. B: April -June (July).	Low-Absent Not found by focused survey.
<i>Grusonia parishii</i>	Parish's club-cholla	None	S2	2B2	Mojavean and Sonoran desert scrub, Joshua tree "woodland" in sandy or rocky locations. 300-1,524m. B: May-July.	Low-Absent Not found by focused survey
<i>Jaffueliobryum raii</i>	Rau's jaffueliobryum moss	None	S2	2B.3	Alpine dwarf scrub, chaparral, & Mojavean and Sonoran desert scrub. Known from dry places, carbonate, openings, and rock crevices. 490 - 2100 m.	Low-Absent Not found by focused survey

Table 1. Special Status Plants & Vegetation Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status¹			Habitat (for plants includes elevational range in meters & blooming period)	Occurrence Probability²
		Federal	State	CRPR		
<i>Jaffueliobryum wrightii</i>	Wright's jaffueliobryum moss	None	S2S3	2B.3	Chaparral, Mojavean & Sonoran desert scrub, Alpine dwarf scrub. Openings: dry places, rock crevices, carbonate. 160-2500 m.	Low-Absent Not found by focused survey
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	None	S2	1B.1	Marshes and swamps, playas, vernal pools. 1 - 1220 m. B: February - June.	Low-Absent Not found by focused survey CNDDDB records on project site.
<i>Linanthus maculatus</i> ssp. <i>maculatus</i>	Little San Bernardino Mountains linanthus	None	S2	1B.2	Desert dunes, Sonoran and Mojavean desert scrub, Joshua tree "woodland." Sandy places. Usually in light-colored quartz sand; often in wash or bajada. 140 - 1220 m. B: March-May	Low-Absent Not found by focused survey
<i>Matelea parvifolia</i>	spear-leaf matelea	None	S3	2B.3	Rocky places in Mojavean and Sonoran desert scrub. 440 - 1095 m. B: March -May (July).	Low-Absent Not found by focused survey
<i>Monardella robisonii</i>	Robison's monardella	None	S3	1B.3	Pinyon-juniper woodland. 610 - 1,500 m., B: (February) April - September (October).	Absent. No suitable habitat.
<i>Muhlenbergia appressa</i>	appressed muhly	None	S3	2B.2	Coastal scrub, Mojavean desert scrub, valley and foothill grassland in rocky places. 20 - 1600 m. B: April - May.	Low-Absent Not found by focused survey
<i>Penstemon thurberi</i>	Thurber's beardtongue	None	S3	4.2	Chaparral, Joshua tree "woodland", Sonoran desert scrub, Pinyon-juniper woodland. 500 - 1220 m. B: May-July.	Low-Absent Not found by focused survey
<i>Saltugilia latimeri</i>	Latimer's woodland-gilia	None	S3	1B.2	Chaparral, Mojavean desert scrub, pinyon-juniper woodland. 400-1,900m. B: March-June	Low-Absent Not found by focused survey
<i>Sidalcea neomexicana</i>	salt spring checkerbloom	None	S2	2B.2	Chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, playas. 15 - 1530 m. B: March - June.	Low-Absent Not found by focused survey CNDDDB records on project site.
<i>Tetracoccus hallii</i>	Hall's tetracoccus	None	S4	4.3	Mojavean and Sonoran desert scrub. 30 - 1200 m. B: January - May.	Low-Absent Not found by focused survey
<i>Wislizenia refracta</i> ssp. <i>refracta</i>	jackass-clover	None	S1	2B.2	Desert dunes, playas, Mojavean and Sonoran desert scrub. 600 - 800 m. B: April - November.	Low-Absent Not found by focused survey
<i>Yucca brevifolia</i>	western Joshua tree	None	SCT	None	Mojavean desert scrub, Joshua tree "woodland."	Absent Not found during any survey.
Vegetation Communities						
Desert Fan Palm Oasis Woodland	Not applicable (N/A)	N/A	S3.2	N/A	N/A	Absent Landscaping palms & their seedlings present, but no palm oasis within the project area.

Table 2. Special Status Wildlife Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status ¹			Habitat	Occurrence Probability ²
		Federal	State	Other		
Invertebrates						
<i>Danaus plexippus</i>	Monarch	FC	S2S3	N/A	Western winter roost sites primarily occur along the coast from northern Mendocino to Baja California, Mexico, located in wind-protected tree groves (<i>Eucalyptus</i> species, Monterey pine (<i>Pinus radiata</i>), cypress), with nectar and water sources nearby. During breeding season, adults widespread but scarce in the desert. Larvae require milkweed.	Low Seldom seen in the desert, but milkweed is present onsite.

Table 2. Special Status Wildlife Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status ¹			Habitat	Occurrence Probability ²
		Federal	State	Other		
<i>Rhopalolemma robertsi</i>	Roberts' rhopalolemma bee	None	S1	N/A	<p>Roberts' rhopalolemma bee is the only <i>Rhopalolemma</i> species known from California. Only two species are known; the second, <i>R. rotundiceps</i>, was described from Arizona in 1997. The known range of Roberts' rhopalolemma bee is the type locality five miles south of the project area. Despite at least 70 years of collecting in the area by many active solitary bee specialists, the species is only known from a single specimen from that location.</p> <p>Specific habitat information was not recorded for this species when collected. In Arizona, <i>R. rotundiceps</i> was collected and studied in a shallow wash in a creosote-bush scrub, and collected in three other desert localities.</p> <p>Bees in this group (cleptoparasitic Nomadinae) do not excavate their own nests or collect pollen for their larvae. Instead, the females enter the nests of pollen-collecting species and lay their eggs in the open, unfinished cells while the host females are absent. While the host species of Roberts' rhopalolemma bee is unknown, all known host associations for bees in the tribe Biastini, to which <i>Rhopalolemma</i> belongs, involve halictid bees in the subfamily Rhophitinae, so the host of Roberts' rhopalolemma bee is likely a member of that subfamily as well.</p> <p>Adult cleptoparasitic bees take nectar from flowers, but no floral association is known for Roberts' rhopalolemma bee. <i>R. rotundiceps</i> has been taken on <i>Phacelia</i>. (CDFG 2022).</p>	<p>Unknown</p> <p>The genus is known from creosote bush scrub and for feeding on <i>Phacelia</i>, both of which occur onsite, but no specific natural history information is known for this species. Given the long period in which nobody has successfully detected it (since 1973), the possibility of occurrence onsite is expected to be very low.</p>

Table 2. Special Status Wildlife Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status ¹			Habitat	Occurrence Probability ²
		Federal	State	Other		
Reptiles						
<i>Crotalus ruber</i>	red-diamond rattlesnake	None	SC, S3	N/A	Chaparral, woodland, grassland, & desert areas. Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks or surface cover objects.	Low Few, if any, natural rocky areas onsite.
<i>Gopherus agassizii</i>	desert tortoise	FT	ST , S2S3	N/A	Prefers Joshua tree, desert wash & scrub (especially creosote bush) habitats; but in most desert habitats. Large wildflower blooms preferred. Burrows & nests require friable soil.	Absent (in project footprint) Not found by focused survey, but could occur in surrounding area (1990-1991 records to immediate west of project).
Birds						
<i>Accipiter cooperii</i>	Cooper's hawk	MBTA	WL, S4, FGC	N/A	Woodland, chiefly of open, interrupted, or marginal type, including residential areas. Nests in trees.	Occurs Incidentally detected during April surveys. May breed in areas with large trees.
<i>Athene cunicularia</i>	burrowing owl	MBTA, BCC	SC, S3, FGC	N/A	Open, dry grasslands, deserts & scrublands with low-growing vegetation. Depends on burrowing mammals.	Low Not detected during first survey.
<i>Calypte costae</i>	Costa's hummingbird	MBTA, BCC	S4, FGC	N/A	Primary habitats desert wash; edges of desert & valley foothill riparian; coastal, desert, & desert succulent scrub; palm oasis; & low elevation chaparral.	Occurs Incidentally detected during April surveys. Nesting habitat present.
<i>Falco mexicanus</i>	prairie falcon	MBTA, BCC	SC, S3, FGC	N/A	Breeding sites located on cliffs, but forages far afield.	Low No nesting habitat, may forage.
<i>Lanius ludovicianus</i>	loggerhead shrike	MBTA, BCC	SSC, S4, FGC	N/A	Found in open habitats with widely spaced vegetation.	Moderate Nesting and foraging habitat onsite.
<i>Polioptila melanura</i>	black-tailed gnatcatcher	MBTA	WL, S3S4, FGC	N/A	Primarily inhabits wooded desert wash habitats; also occurs in desert scrub habitat, especially in winter.	Occurs Incidentally detected during April surveys. Nesting habitat present.
<i>Pyrocephalus rubinus</i>	vermillion flycatcher	MBTA	SC, S2S3, FGC	N/A	During nesting, inhabits desert riparian adjacent to irrigated fields, irrigation ditches, pastures, & other open, mesic areas. Nests in cottonwood, willow, mesquite, or other large desert riparian trees.	Occurs Incidentally detected during April surveys. Potential nesting in limited suitable areas such as Luckie Park.
<i>Selasphorus rufus</i>	rufous hummingbird	MBTA, BCC	S1S2, FGC	N/A	Breeds in coniferous forests. Uses riparian areas, open woodlands, chaparral, mountain meadows, and other habitats rich in nectar-producing flowers, including gardens and orchards.	Occurs Incidentally detected during April surveys. Migration only. Does not nest in project area.

Table 2. Special Status Wildlife Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status ¹			Habitat	Occurrence Probability ²
		Federal	State	Other		
<i>Spizella breweri</i>	Brewer's sparrow	MBTA, BCC	S4, FGC	N/A	Many habitats in winter and migration. Breeds east of the crest of the Cascades and Sierra Nevada Mountains, in high valleys of the Mojave Desert, and in mountains at the southern end of the San Joaquin Valley. For nesting they prefer high sagebrush plains, slopes, and valleys with Great Basin sagebrush and antelope brush.	Occurs Incidentally detected during April surveys. Migration only. Does not nest in project area.
LeConte's thrasher	<i>Toxostoma lecontei</i>	MBTA, BCC	S3, FGC	N/A	Primarily utilizes open desert washes, desert scrub, alkali desert scrub, & desert succulent scrub habitats; commonly nests in a dense, spiny shrub or densely branched cactus.	Moderate Some suitable habitat in less densely populated areas.
Mammals						
<i>Antrozous pallidus</i>	pallid bat	None	SC, S3	WBWG: H	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting.	Moderate May forage onsite but is unlikely to roost due to few or no possible sites.
<i>Chaetodipus fallax pallidus</i>	pallid San Diego pocket mouse	None	SC, S3S4	N/A	In desert wash, desert scrub, desert succulent scrub, pinyon-juniper, etc. Sandy, herbaceous areas, usually in association with rocks or coarse gravel.	Moderate CNDDDB records on project site.
<i>Euderma maculatum</i>	spotted bat	None	SC, S3	WBWG: H	Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests. Feeds over water & along washes, almost entirely on moths. Needs rock crevices in cliffs or caves for roosting.	Moderate May forage onsite but is unlikely to roost due to few or no possible sites. CNDDDB records on project site.
<i>Lasiurus xanthinus</i>	western yellow bat	None	SC, S3	WBWG: H	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, usually palms. Forages over water and among trees.	Moderate Mature palms and other trees present in project area. CNDDDB records on project site.
<i>Ovis canadensis nelsoni</i>	desert bighorn sheep	None	FP, S3	N/A	Open, rocky, steep areas with water & herbaceous forage.	Absent No suitable habitat.
<i>Taxidea taxus</i>	American badger	None	SC, S3	N/A	Most abundant in drier, open stages of most herbaceous, shrub, & forest habitats. Burrows in friable soils & open, uncultivated ground.	Low Habitat suitable, but few if any potential burrows detected during focused surveys for desert tortoise & burrowing owl.

<p>¹Status Codes:</p> <p><u>Federal</u> FE = Federal Endangered FT = Federal Threatened FC = Federal Candidate BCC = Bird of Conservation Concern MBTA = Migratory Bird Treaty Act</p> <p><u>State</u> SE = State Endangered ST = State Threatened SCT=State Candidate FP = Fully Protected SC = State Species of Concern WL = Watch List FGC = Fish & Game Code The California Natural Diversity Database program is a member of the NatureServe Network of natural heritage programs, and uses the same conservation status methodology as other network programs. Elements are ranked using standard criteria and definitions. This standardization makes the ranks comparable between organisms and across political boundaries. The three main categories that are taken into consideration when assigning an element rank are rarity, threats, and trends. Within these three categories, various factors are considered, including:</p> <ul style="list-style-type: none"> • Range extent, area of occupancy, population size, total number of occurrences, and number of good occurrences (ranked A or B). Environmental specificity can also be used if other information is lacking. • Overall threat impact as well as intrinsic vulnerability (if threats are unknown). • Long-term and short-term trends. <p>S1 = Critically Imperiled – At very high risk of extirpation in the state due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.</p>	<p>S2 = Imperiled – At high risk of extirpation in the state due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.</p> <p>S3 = Vulnerable – At moderate risk of extirpation in the state due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.</p> <p>S4 = Apparently Secure – At a fairly low risk of extirpation in the state due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.</p> <p>S5 = Secure – At very low or no risk of extirpation in the state due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.</p> <p>SX = Presumed Extirpated – Species is believed to be extirpated from the state Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered</p> <p>SH = Possibly Extirpated – Known from only historical records but still some hope of rediscovery. There is evidence that the species may no longer be present in the state, but not enough to state this with certainty.</p> <p>SNR = Unranked – State rank not yet assessed.</p>	<p><u>California Rare Plant Rank (CRPR)</u> 1A = Presumed extirpated in California and either rare or extinct elsewhere 1B = Rare or Endangered in California and elsewhere 2A = Presumed extirpated in California, but more common elsewhere 2B = Rare or Endangered in California, but more common elsewhere 3 = Plants for which we need more information – Review list 4 = Plants of limited distribution – Watch list</p> <p><u>Western Bat Working Group (WBWG)</u> The WBWG is composed of agencies, organizations, and individuals interested in bat research, management, and conservation from 13 western states and provinces. The goals of the group are to (1) facilitate communication among interested parties and reduce risks of species decline or extinction; (2) provide a mechanism by which current information on bat ecology, distribution, and research techniques can be readily accessed; and (3) develop a forum to discuss conservation strategies, provide technical assistance, and encourage education programs. Species are ranked as High, Medium, or Low Priority in each of 10 regions in western North America.</p> <p>²Occurrence Probability <i>Occurs</i> = Observed on the site by Wood personnel or recorded there by other qualified biologists. <i>High</i> = Observed in similar habitat in region by qualified biologists, or habitat on the site is a type often utilized by the species and the site is within the known range of the species. <i>Moderate</i> = Reported sightings in surrounding region, or site is within the known range of the species and habitat on the site is a type occasionally used by the species. <i>Low</i> = Site is within the known range of the species but habitat on the site is rarely used by the species. <i>Absent</i> = A focused study failed to detect the species, or no suitable habitat is present. <i>Unknown</i> = Distribution and habitat use has not been clearly determined.</p>
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4.2 Field Visits

Weather conditions during the assessment conducted on 22 March 2022 were 68.5 to 78.4 degrees Fahrenheit, 20 to 35 percent cloud cover, wind speeds of 1-5 mph, and with no precipitation. On 28 March, weather was 76.7 to 75.5 degrees Fahrenheit, 5 to 10 percent cloud cover, wind speed of 1-6 mph, and with no precipitation.







As would be expected for a sewer project, much of the project alignment is surrounded by the homes, businesses, and public facilities that will be served by the proposed system. The remaining habitat is a patchwork of varying sizes of undeveloped vacant lots and lands. Most undeveloped lands are not pristine, but instead show signs of anthropogenic disturbance, such as mechanical disturbance of soil, vegetation removal, off road vehicle tracks, and trash dumping. Nevertheless, the undeveloped lands provide potential wildlife corridors between developed/disturbed areas.

No specific soil mapping was available for most of the project site (United States Department of Agriculture, Natural Resources Conservation Service 2019.). The only mapped soil is near the southeast site corner: "Pintobasin gravelly sand, 1 to 3 percent slopes." In general, most observed soils appeared consistent with gravelly sands, but some soils in the northeast project area included apparent alkali sinks, fine sands, and even dunes in the WWTP area.

Where not developed, the primary vegetation community present throughout the project area is Creosote Bush Scrub dominated by creosote bush (*Larrea tridentata*) with various co-dominants including white bur-sage (*Ambrosia dumosa*), white rhatany (*Krameria bicolor*), allscale saltbush (*Atriplex polycarpa*) and cheesebush (*Ambrosia salsola*). In the northern project area there are stand of Saltbush Scrub dominated by allscale saltbush (*Atriplex polycarpa*) and/or four-wing saltbush (*Atriplex canescens*) and Desert Sink Scrub dominated by bush seepweed (*Suaeda nigra*). The potential WWTP site contains a matrix of Saltbush Scrub and Desert Sink Scrub and a Mesquite Bosque dominated by honey mesquite (*Prosopis glandulosa* var. *torreyana*). A major flood control channel which originates from Fortynine Palms Canyon to the southwest is present onsite, as well as other unnamed drainages. These are mapped as Desert Wash Systems and where plants have not been removed by flood control agencies, they are vegetated with species such as smoke tree (*Psoralea argyrea*) and catclaw (*Senegalia greggii*). Vegetation communities in the project footprint are mapped on Figure 4) and are based on those in USGS (2004).

All plant species and vertebrate wildlife detected are included in Appendix D, including additional species observed during preliminary focused surveys conducted by Wood personnel in April 2022. It should be noted that relatively short-term inventories of this nature are limited in their scope by the seasonality, timing and duration of surveys, and the nocturnal and fossorial habits of many desert-dwelling animals. Therefore, the species observed to date do not reflect the total number of species that potentially occupy the project area.



-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Desert Sink Scrub
-  Desert Sink Scrub/Saltbush Scrub
-  Mesquite Bosque
-  Developed/Disturbed

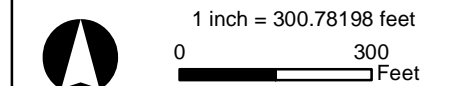
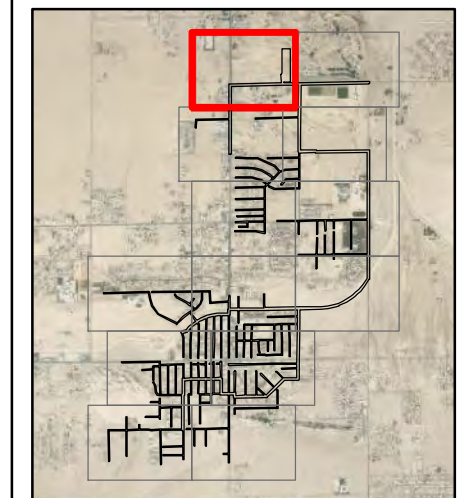







FIGURE 4a
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Desert Sink Scrub
-  Saltbush Scrub
-  Developed/Disturbed

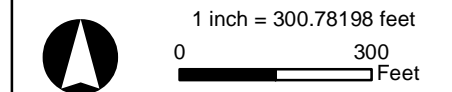
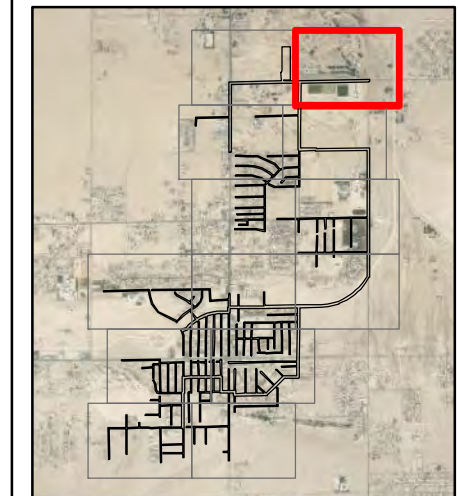
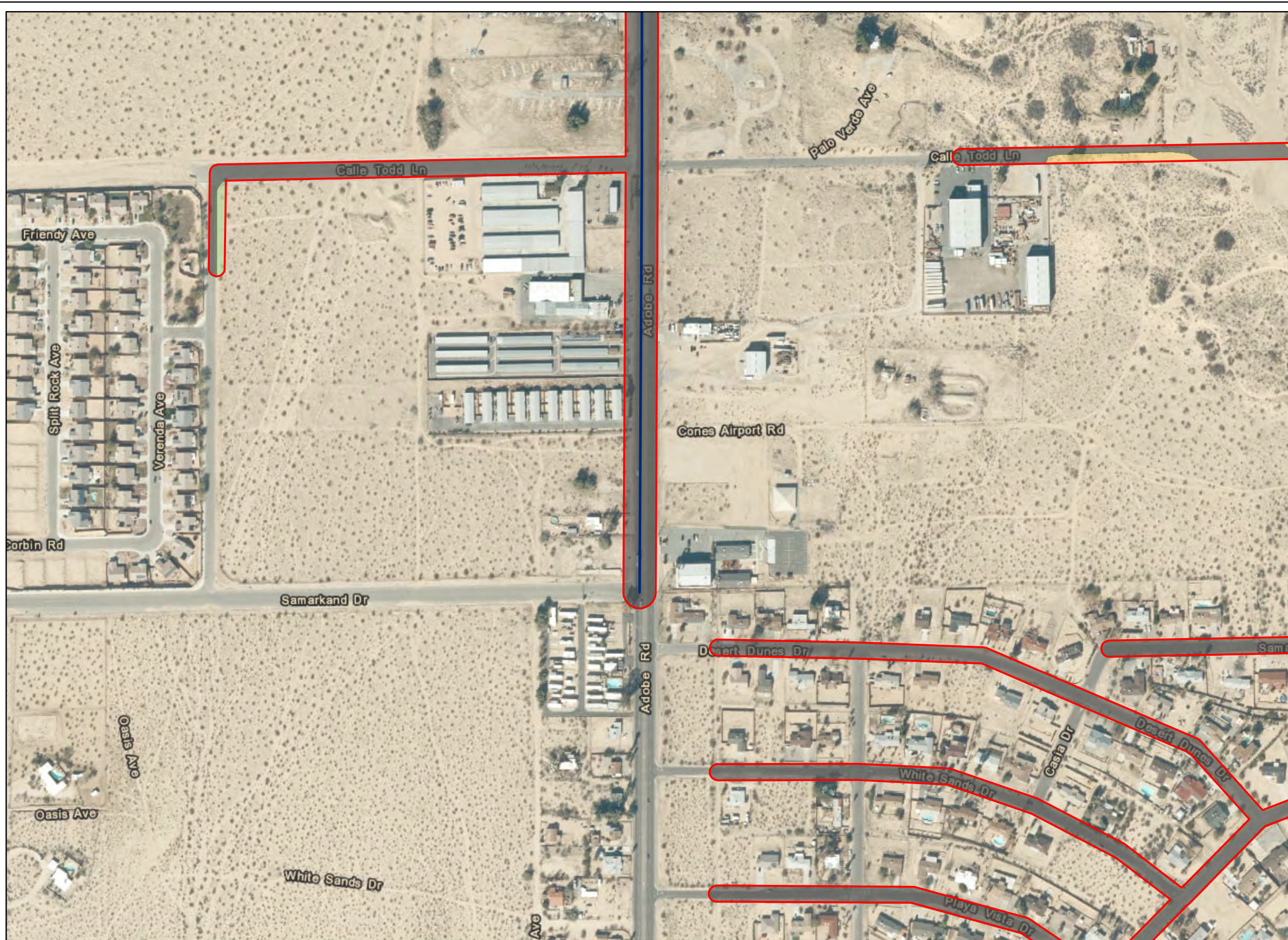







FIGURE 4b
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Saltbush Scrub
-  Developed/Disturbed

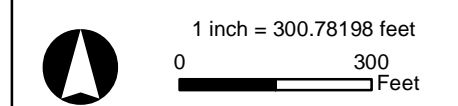
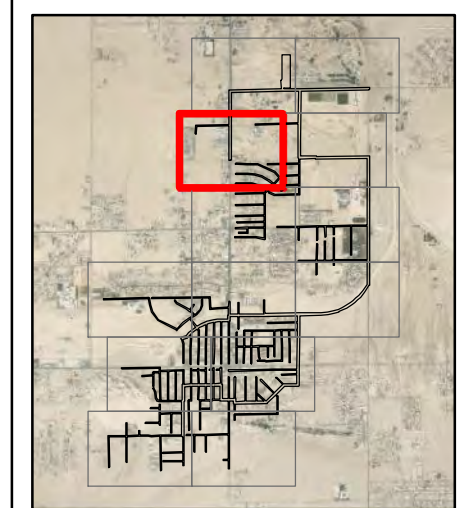
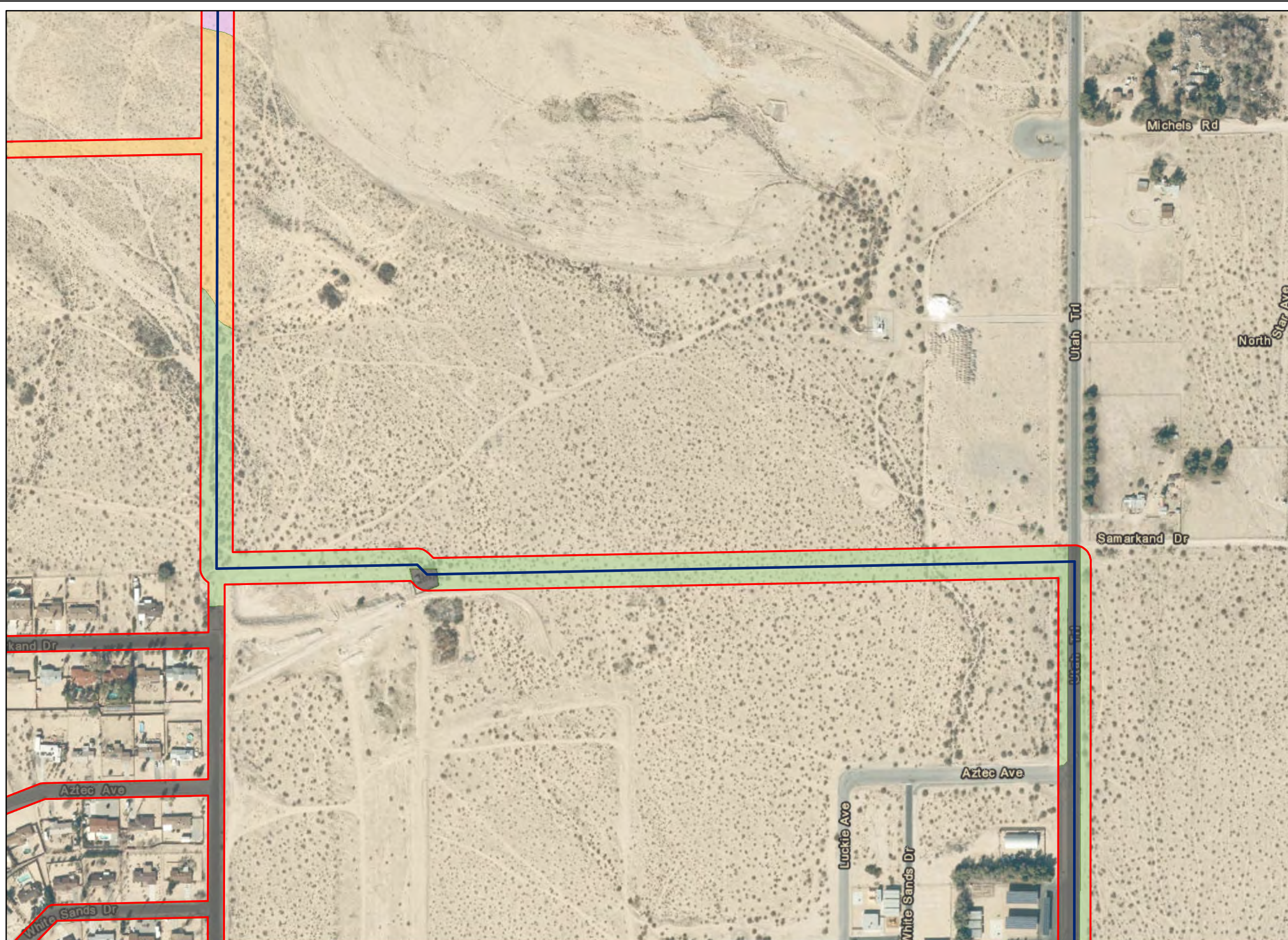








FIGURE 4b
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Desert Sink Scrub
-  Saltbush Scrub
-  Developed/Disturbed

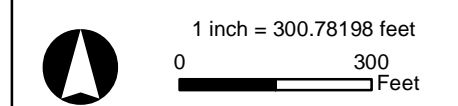
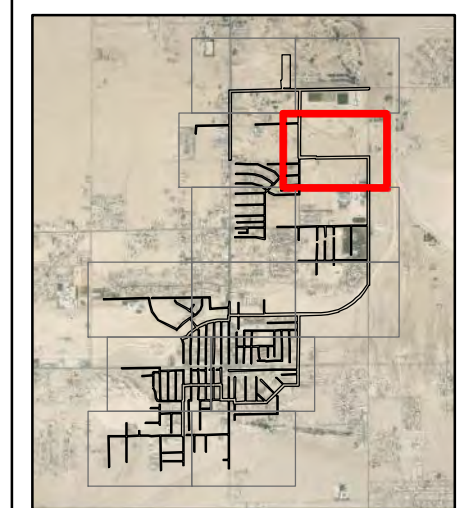
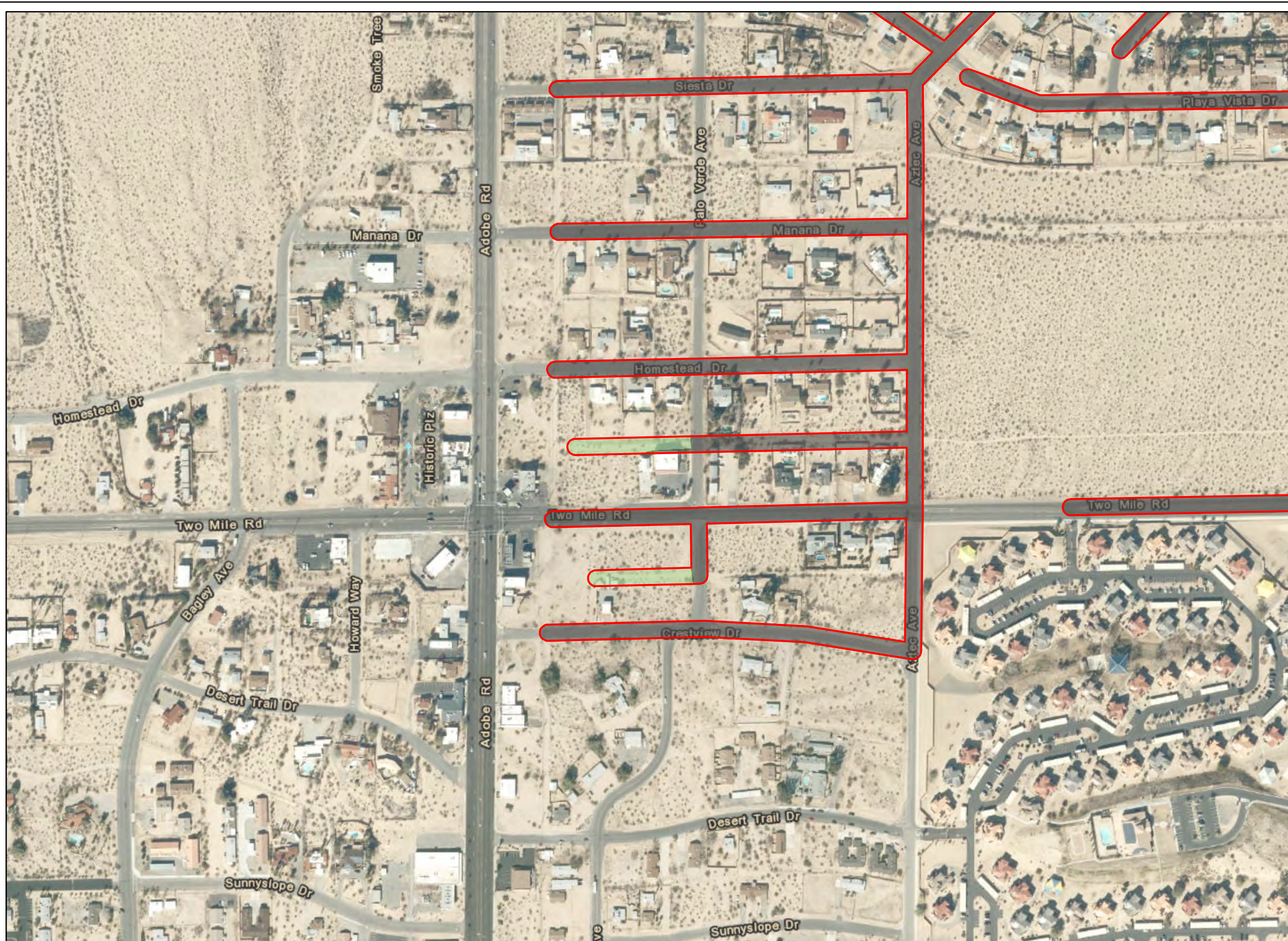






FIGURE 4c
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Developed/Disturbed

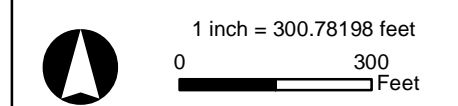
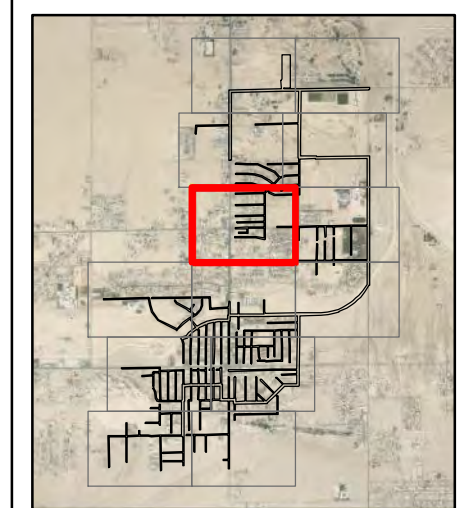
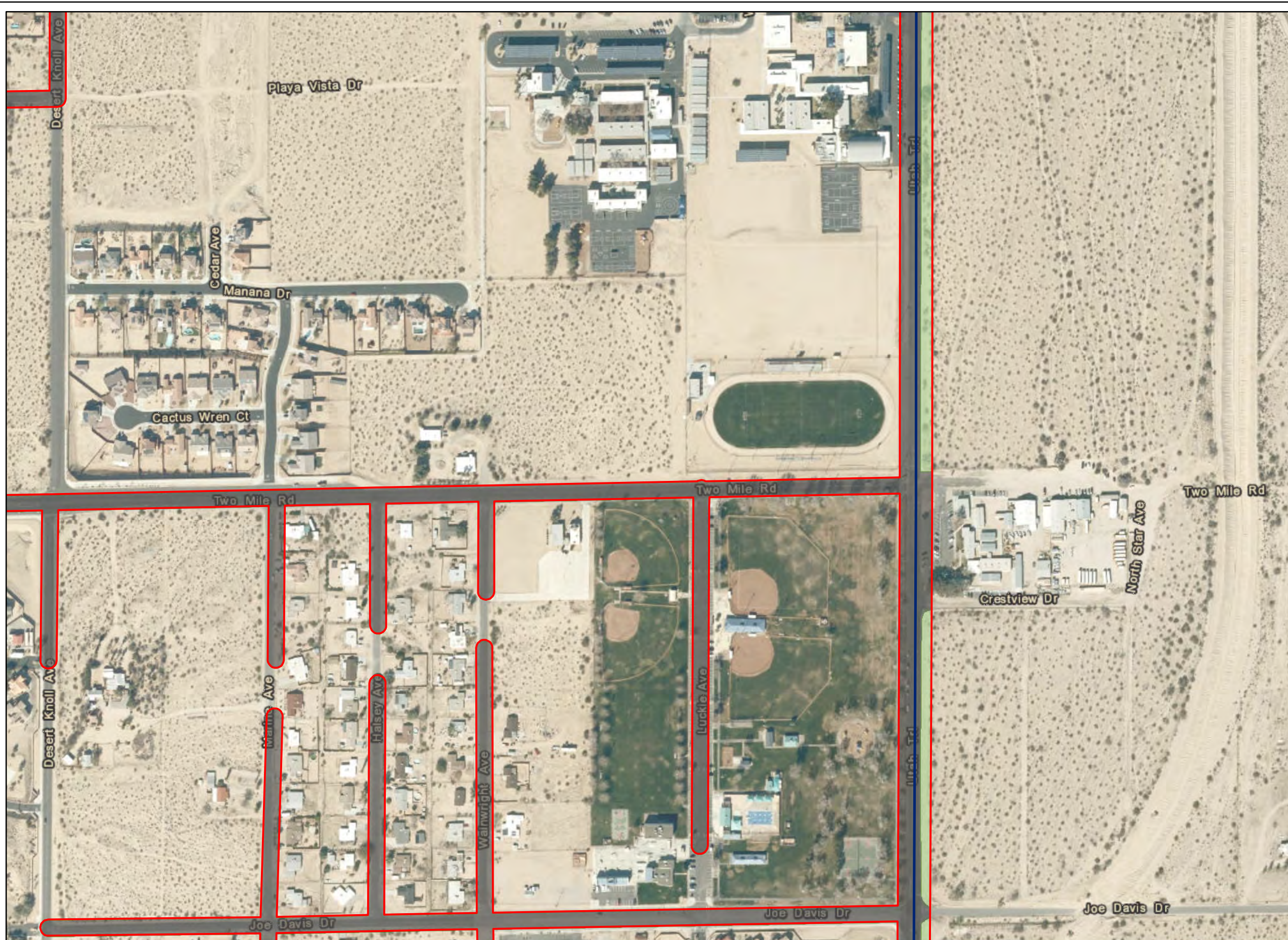






FIGURE 4a
Vegetation Communities
Twentynine Palms Wastewater
Collection System, Phases 1 and 2
Twentynine Palms, CA



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Developed/Disturbed

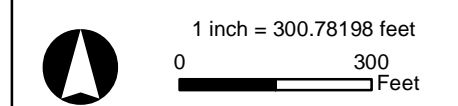
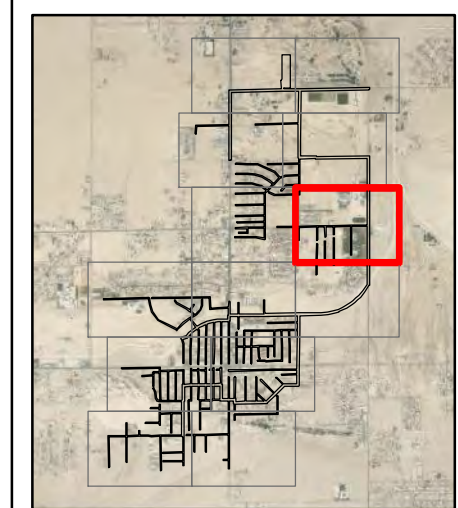






FIGURE 4b
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Developed/Disturbed

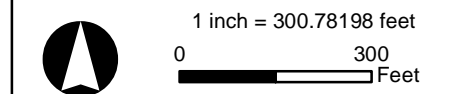
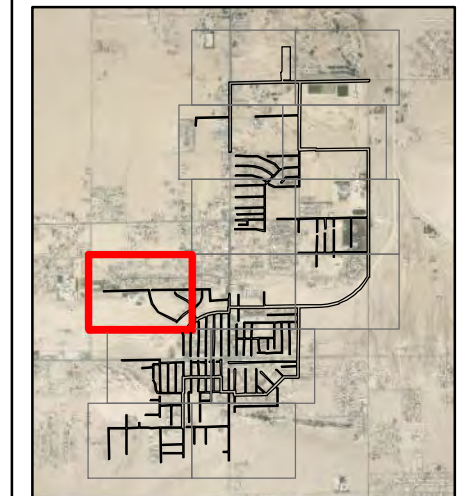
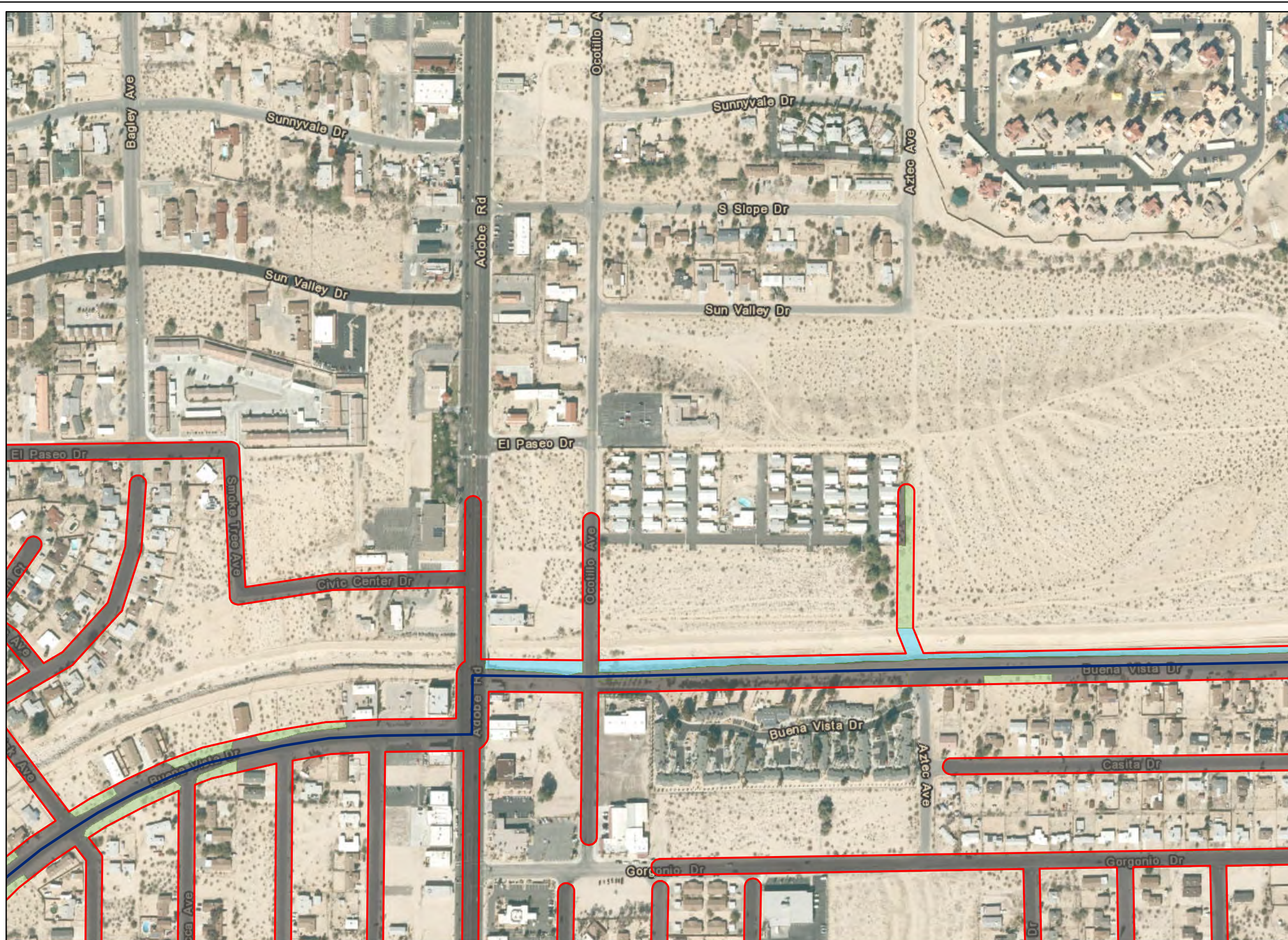







FIGURE 4e
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Desert Wash System
-  Developed/Disturbed

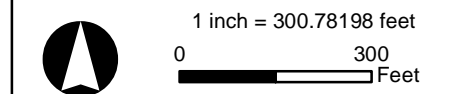
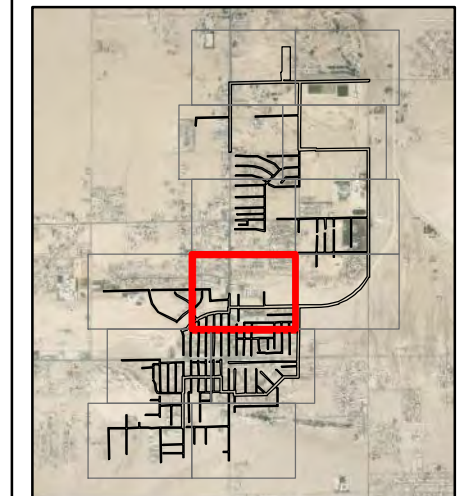
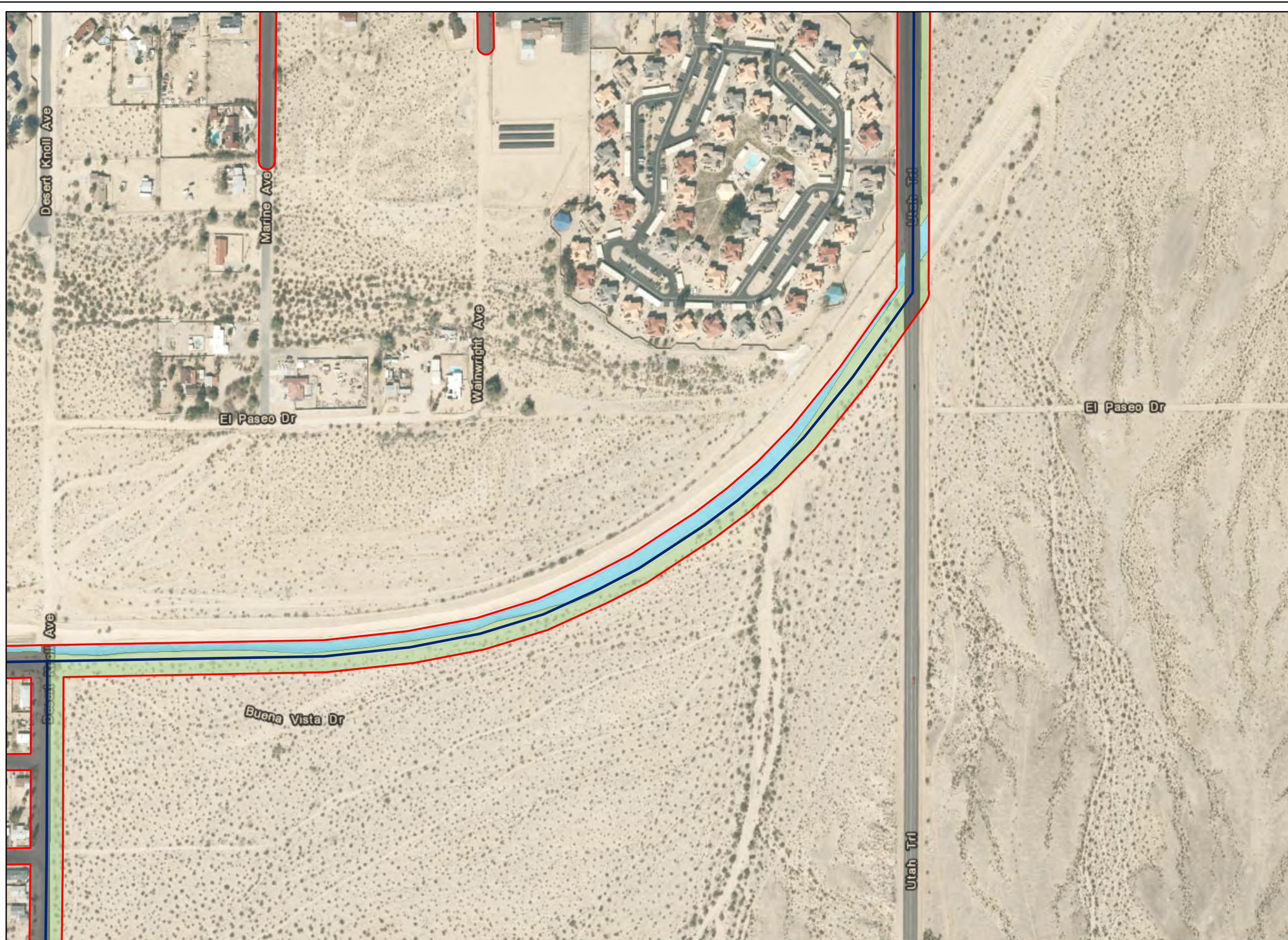







FIGURE 4f
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Desert Wash System
-  Developed/Disturbed

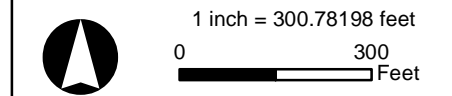
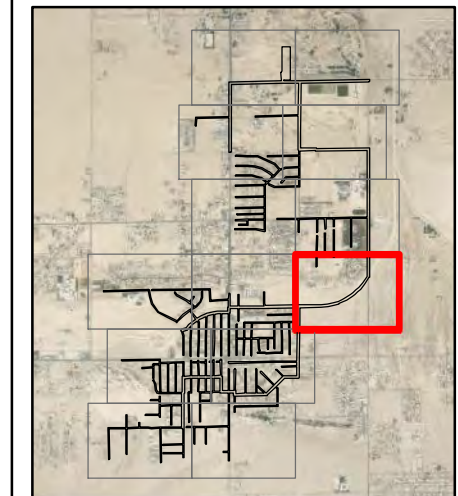
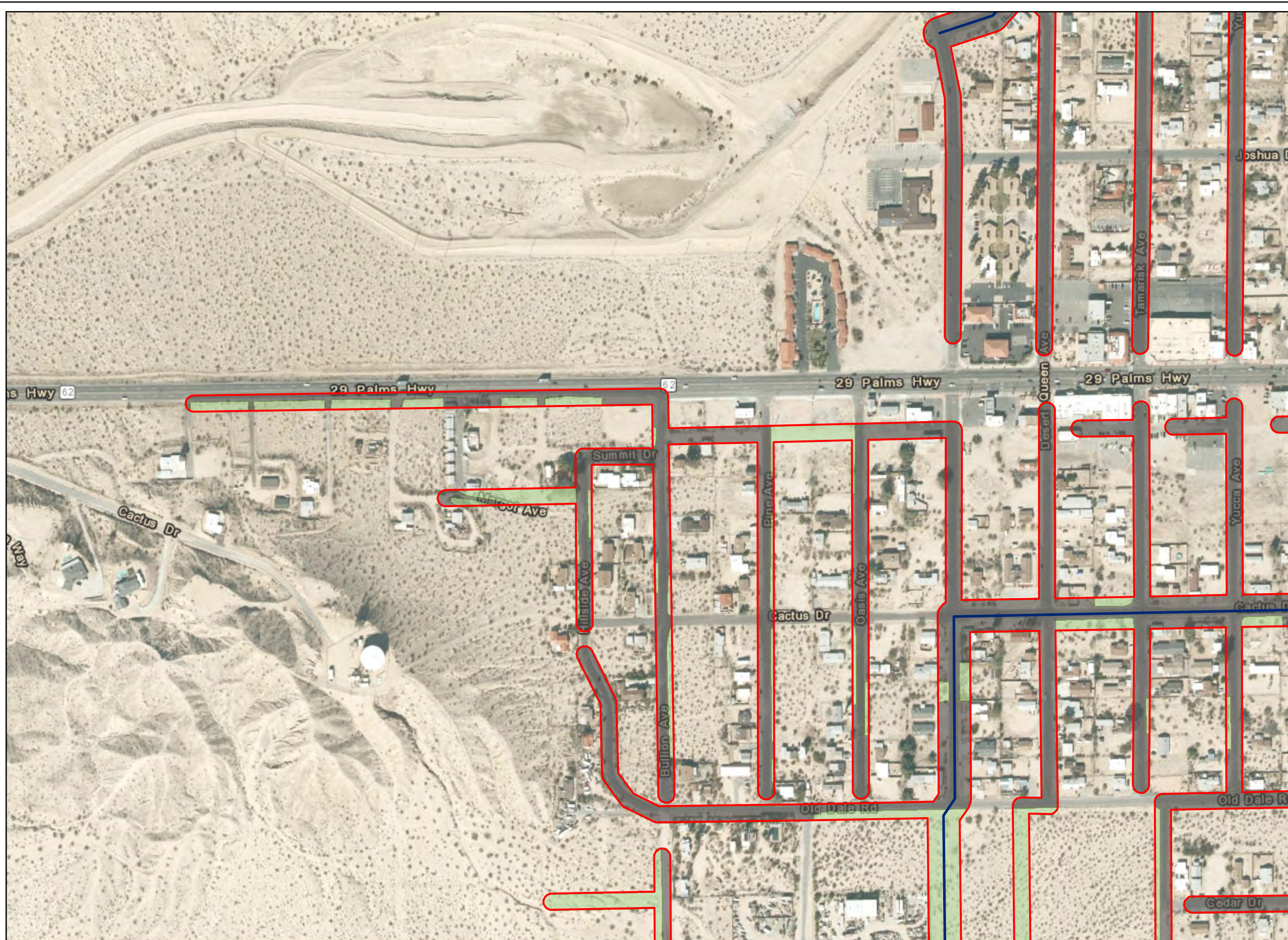






FIGURE 4g
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Developed/Disturbed

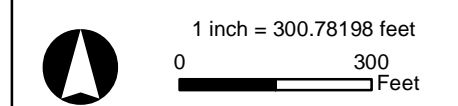
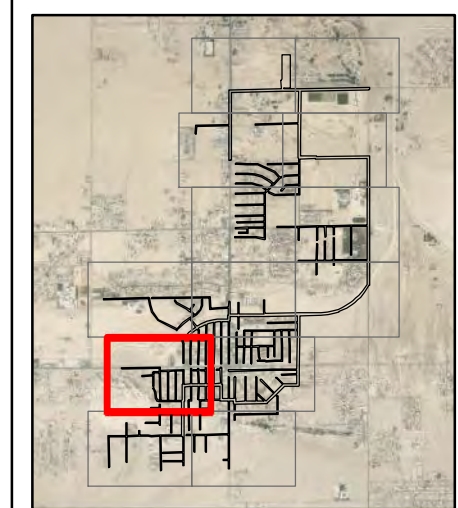
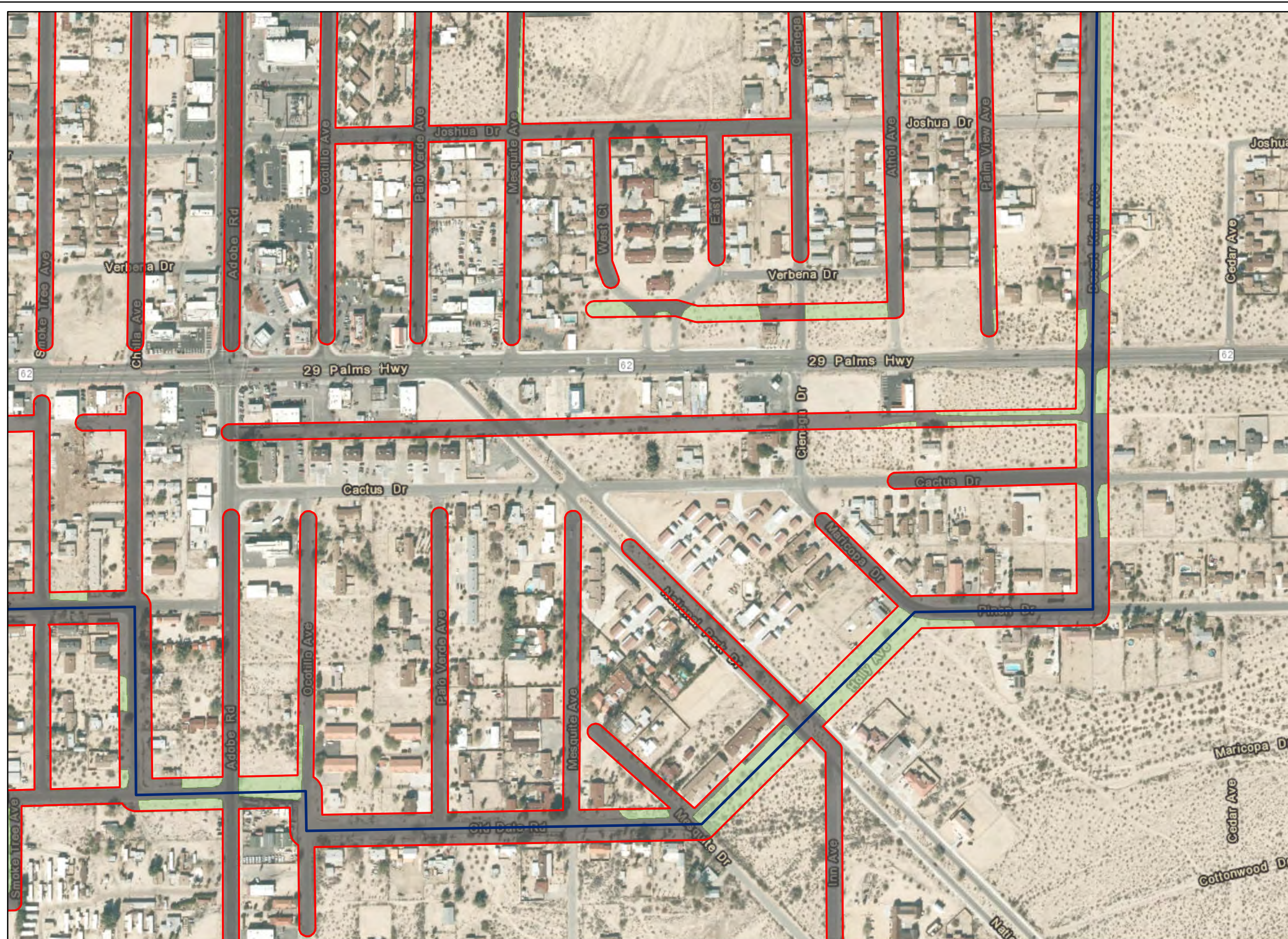






FIGURE 4c
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Developed/Disturbed

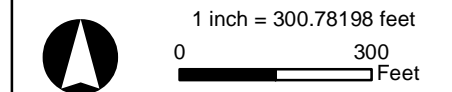
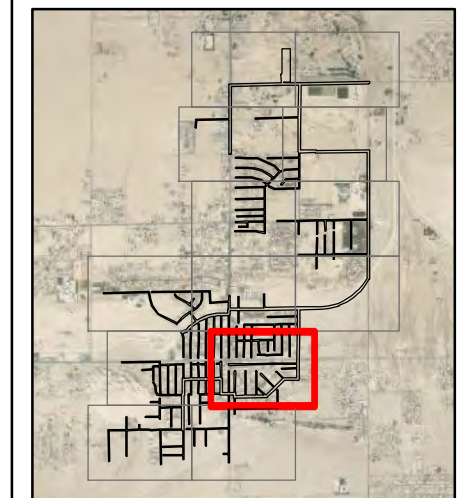
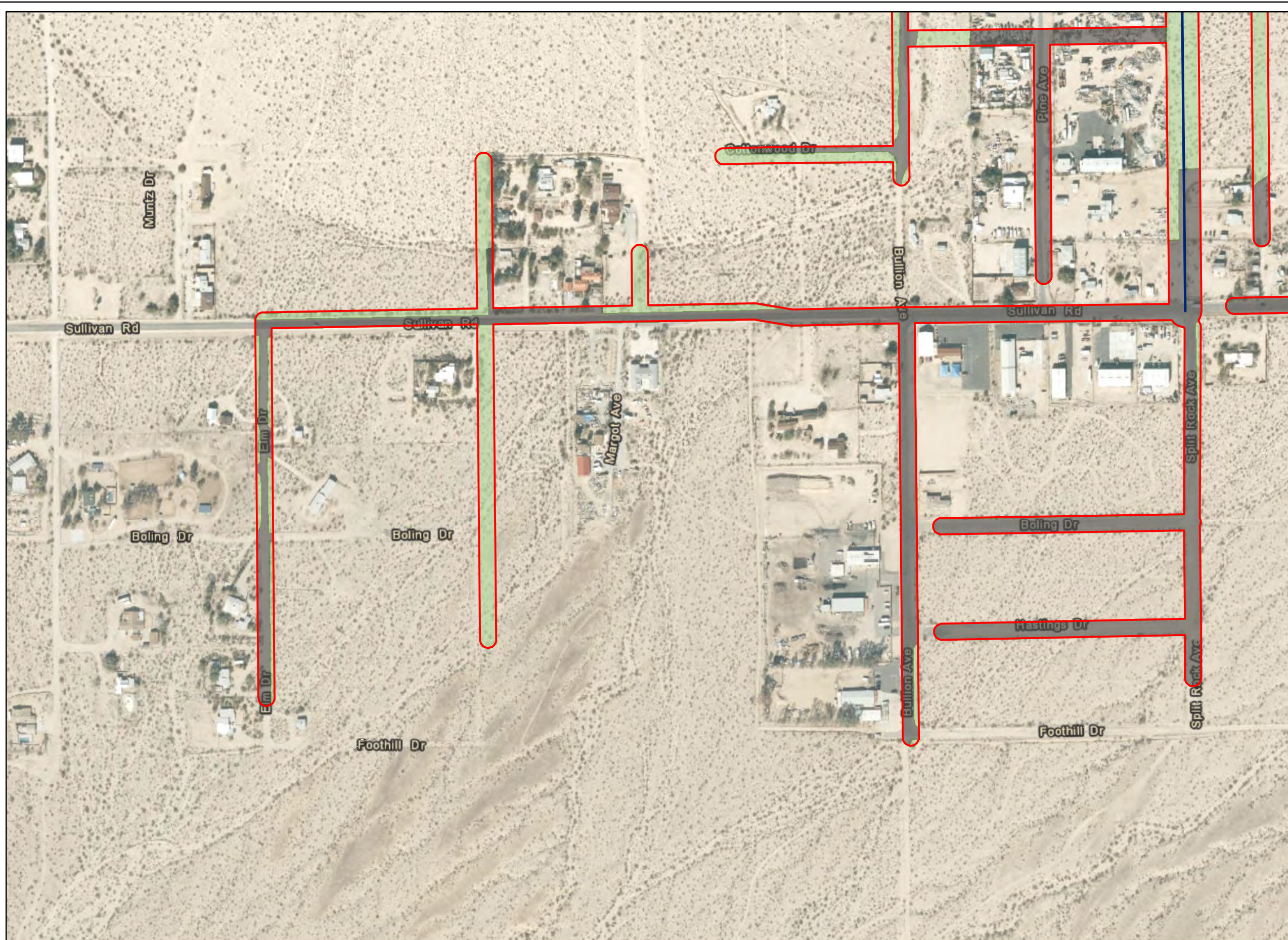






FIGURE 4k
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Developed/Disturbed

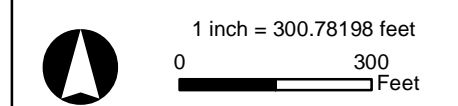
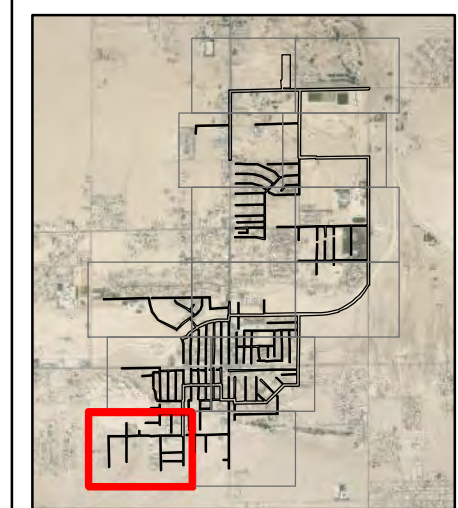






FIGURE 4d
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Developed/Disturbed

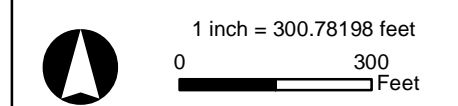
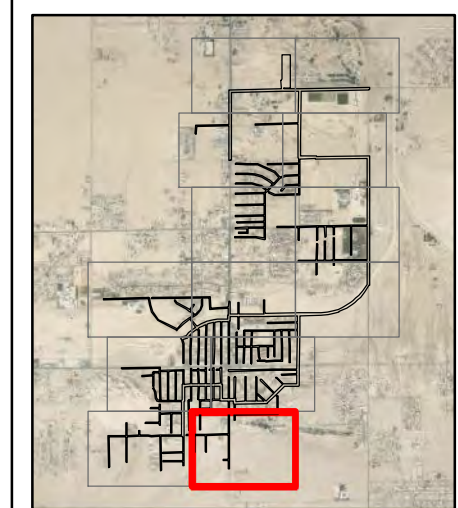


FIGURE 4j
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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5.0 DISCUSSION

5.1 Special Status Plants

Twenty special-status plant species are known from the project area. Two do not occur: the Joshua tree (not detected by focused surveys) and Robison's monardella (no suitable habitat). Two are present: Alverson's foxtail cactus and Utah vine milkweed (both found during the April focused survey). The remaining 16 species were not found by the April focused survey but were searched for again during the June blooming period. No additional species were found, however 2022 was a drought year, and it is possible that some of these species failed to germinate and/or bloom at all (Wood 2022a). The WWTP site was not surveyed during blooming period for these species, but no special status plants were detected during December 2022 site visits. No special status vegetation communities were detected.

Although none of the occurring or potentially occurring plant species are state or federally listed as threatened or endangered, impacts could be considered significant under the CEQA. Alverson's foxtail cactus and Utah vine milkweed should be avoided. Biological monitoring may be required near their populations. If unavoidable, they should be transplanted and/or have seeds collected with guidance from the CDFW. If additional special status plants are detected in June or in the future, this same recommendation would apply.

5.2 Desert Tortoise

The Mojave population segment of the desert tortoise is federally and state listed as threatened by the USFWS and CDFW. The Mojave population segment includes all tortoises occurring west and north of the Colorado River. The desert tortoise is most common in desert scrub, desert wash, and Joshua tree habitats in a variety of terrain types, including alluvial fans, valleys, rocky hillsides, and washes. They require friable soil for burrow and nest construction. Burrows are typically found at the base of shrubs, in the interspaces between shrubs, and occasionally in caliche soil bank areas or underneath boulders/rocks. They are herbivores and feed on a variety of plants including annual herbs and perennial grasses.

Tortoise activity is greatest during the spring and early summer, and to a lesser extent during the fall; however, tortoises can be active at any time of the year during appropriate weather conditions. Although tortoises hibernate during the winter and typically emerge in late February or early March, hatchlings and juveniles can be fairly active during the winter months. Adults will also emerge from their burrows to drink if water resources have been limited during the previous activity season and/or winter precipitation has provided standing water. Their activity is usually much reduced during hot summer months, but they may be active following summer rains or if temperatures are moderate (Boarman 2003).

Threats to desert tortoises include loss or degradation of habitat, vandalism, poaching, intentional killing, predation on young tortoises by the common raven (*Corvus corax*) and other predators (e.g. kit fox, snakes, etc.), and disease (e.g. Mycoplasmosis). Off-road vehicles, military training maneuvers,

mining, and livestock grazing also affect tortoise habitat by collapsing burrows, eroding soils, reducing availability of food plants, eliminating shrubs which would provide shade for tortoises and support for their burrows, and ultimately results in surface disturbance that promotes conditions more conducive to invasion by exotic plant species, which provide less nutritional value to tortoises than the native species that were replaced. Human activities, including garbage dumping, landfills, roads, increased nesting opportunities, irrigation, and increased vehicle use have led to increased numbers of common ravens in California deserts. Ultimately, the increased predation on young tortoises by common ravens reduces recruitment into breeding populations (Boarman 2003).

Tortoises are most often detected by their scats and burrows. Tortoises themselves can sometimes be detected in burrows by reflecting sunlight inside the burrow with a mirror. Other tortoise sign include carcasses, or fragments thereof, courtship rings, and drinking depressions. Presence of sign is an indication that tortoises either occur, or have recently occurred, at a particular location. Sign can be detected at any time of the year and always indicates suitable habitat, if not occupied habitat.

Although there is no desert tortoise critical habitat designated on the project site, it is present approximately 1.5 miles to the southeast. Further, the vegetation communities occurring on the project site (*e.g.* Creosote Bush Scrub, Saltbush Scrub) are habitats typically utilized by desert tortoises, and the CNDDDB reported populations immediately to the west in 1990-1991. During the focused survey, Wood biologists were provided an anecdotal report by a local resident who stated that they had observed a mating pair of desert tortoises in the southern project area last year. During the first half of April 2022, however, a focused survey for the desert tortoise was conducted within the project footprint, and no tortoises or their sign were detected. The survey report includes further details (Wood 2022b). A focused survey was conducted on the WWTP site on 14 December 2022 and no tortoises or their sign were detected there either.

Although desert tortoise was found to be absent from the narrow, linear project footprint, the project area is surrounded by potential habitat. For these reasons, and because suitable habitat is present in the project footprint, desert tortoises may enter the project area in the future. The following mitigation and minimization measures are recommended to ensure that any potential impacts to the desert tortoise are avoided:

- 1) A worker's environmental awareness program (WEAP) would be implemented to educate the construction crew of potential special status species present on the project site.
- 2) Construction and maintenance personnel would be required to inspect for desert tortoises under vehicles prior to moving the vehicle. If a desert tortoise is found beneath a vehicle, it would not be moved until the desert tortoise had left of its own accord. All desert tortoise observations would be reported to a qualified biologist and the wildlife agencies.
- 3) A qualified biologist should monitor construction when it is occurring adjacent to undeveloped lands to ensure that tortoises do not enter the work area and that they are not disturbed if present.

- 4) Any open trenches adjacent to habitat should be monitored by a qualified biologist daily. If left open overnight or at any time when not monitored, they should be fenced and/or covered to prevent entry by desert tortoises. Exit ramps should be present within open trenches.

Desert tortoises cannot be taken (harmed, harassed) under state and federal law. This report and any recommended mitigation measures do not constitute authorization for incidental take of the desert tortoise.

5.3 Special Status Invertebrates

There is a minimal possibility that two special status insects could occur onsite: the monarch butterfly (federal candidate for ESA listing) and Robert's rhopalemma bee (state ranked as Critically Imperiled). Monarchs are not expected to winter in the project area, but a few individual adults may forage in the area. The main threat to the species would be impacts to milkweed, the larval foodplant. Robert's rhopalemma bee is an extremely rare species about which little is known.

We recommend that preconstruction surveys by qualified biologists flag milkweed plants for avoidance. If unavoidable, monarch caterpillars should be moved to safe milkweeds, with appropriate authorizations. Any bee nest should be avoided. If unavoidable, and determined to be occupied by Robert's rhopalemma bee, CDFW should be consulted for guidance.

5.4 Red Diamond Rattlesnake

Habitat is marginal for the state species of special concern red diamond rattlesnake, and at the northeastern limits of its range. Similarly to the recommendations for the desert tortoise, we recommend that a qualified biologist monitor construction when it is occurring adjacent to suitable undeveloped lands to ensure that red diamond rattlesnakes do not enter the work area and that they are not disturbed if present.

5.5 Special Status Bats

Three species of special status bats (state species of special concern) are of potential occurrence: pallid bat, spotted bat, and western yellow bat. Foraging bats are of no concern regarding impacts, but roosting bats of any species must not be disturbed. If potential roost sites must be disturbed or removed, especially large trees, palms, they should be checked for bats by a qualified biologist. If present and unavoidable, CDFW should be consulted.

5.6 Special Status Burrowing Mammals

Two species of special status burrowing mammals (state species of special concern) are of potential occurrence: American badger and pallid San Diego pocket mouse. Although habitat is suitable for American badger, no burrows diagnostic for this species were found during a focused burrow survey for burrowing owl. As before, we recommend that a qualified biologist monitor construction when it is occurring adjacent to suitable undeveloped lands to ensure that American badger potential burrows aren't present, and that burrows and badgers aren't impacted if they are present, do not enter the work area and that they are not disturbed if present. If present and unavoidable, CDFW should be consulted.

The pallid San Diego pocket mouse is nocturnal and is only positively detectable through focused trapping surveys. Because it is unlikely that significant numbers of this species would be harmed given the narrow direct impacts, we are not recommending focused surveys. In suitable habitat, however, preconstruction surveys are recommended to determine whether burrows suitable for the pallid San Diego pocket mouse are present. If so, the area around them should be avoided. If avoidance is not possible, CDFW should be consulted for guidance, which could include focused surveys.

5.7 Migratory Bird Treaty Act and State Fish and Game Code

Native bird species which may nest on or adjacent to the project area could be subject to direct or indirect impacts from the project. The bird nesting season is generally February 1 through August 31, although nesting birds are always protected. To avoid impacts to such birds, including the special status species which occur or potentially occur onsite (Costa's hummingbird, Cooper's hawk, loggerhead shrike, black-tailed gnatcatcher, vermilion flycatcher, and LeConte's thrasher) we recommend the following: any vegetation removal or grading occurring during the nesting season would require at least one nesting bird survey to be conducted by a qualified biologist no more than three days prior to such activity. If no nests are found, construction would proceed. If active nests are found, impact avoidance measures (e.g., "no work" buffers; sound and/or visual barriers) would be put in place around the nest until young have fledged. This would also apply to offsite nests which may be indirectly impacted. While there is no established protocol for indirect impacts to nests, when consulted, the CDFW often recommends avoidance buffers of about 500 feet for birds-of-prey and listed species, and 100 – 300 feet for other unlisted birds.

5.8 Burrowing Owl

The burrowing owl is uniquely vulnerable to ground disturbing activities since it both nests and roosts underground. Therefore, additional actions must be taken to protect against impacts to this species. The burrowing owl is also federally designated as a Bird of Conservation Concern and state designated as a Species of Concern. It occurs in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation (Haug et al. 2011). In southern California, burrowing owls are not only found in undisturbed natural areas, but also fallow agricultural fields, margins of active agricultural areas, livestock farms, airports, and vacant lots. It is a subterranean nester, typically utilizing pre-existing burrows (e.g. California ground squirrel (*Otospermophilus beecheyi*), kit fox (*Vulpes macrotis*), drain pipes, culverts, etc.). Burrowing owl occupied burrows and areas can be recognized by sign which includes tracks, molted feathers, cast pellets, prey remains, egg shell fragments, owl white wash, nest burrow decoration materials (e.g., paper, foil, plastic items, livestock or other animal manure, etc.) (CDFG 2012). The species is active both day and night and may be seen perching conspicuously on fence posts or standing at the entrance of their burrows.

Analyses of regional patterns for breeding populations of burrowing owls have detected declines both locally in their central and southern coastal breeding areas, and statewide where the species has experienced breeding range retraction. Threat factors affecting burrowing owl populations include habitat loss, degradation and modification, and eradication of ground squirrels resulting in a loss of

suitable burrows required by burrowing owls for nesting, protection from predators, and shelter. Conservation for burrowing owls may include but may not be limited to protecting remaining breeding pairs or providing for population expansion, protecting and enhancing breeding and essential habitat, and amending or augmenting land use plans to stabilize populations and other specific actions to avoid the need to list the species pursuant to the ESA or CESA (CDFG 2012).

No burrowing owls or their sign were observed on the project site during the reconnaissance survey, but suitable habitat was present and widespread. The *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) requires a survey for potential burrows followed by four surveys of those areas found to have potential for burrowing owl occupation. Those four focused surveys are conducted during the times of day when burrowing owls are most active. The first of the four focused surveys needed to be completed by 15 April, so Wood staff was deployed to conduct the burrow search and the first focused survey during the first half of April. The three additional focused survey visits were conducted on 4 May, 27 May, and 6 July 2022. Potential burrows were found, but no burrowing owls or their sign were detected (Wood 2022c). A burrow search was conducted on the WWTP site on 14 December 2022 and no burrowing owls or their sign were detected there either. Nevertheless, where potential habitat is present, CDFG (2012) also requires less extensive preconstruction take avoidance surveys for owls whether or not found by the focused surveys in case the site has been occupied in the interim between the focused surveys and initiation of construction. If burrowing owls are found and are unavoidable, guidelines in CDFG (2012) will need to be followed and consultation with the CDFW may be required.

5.9 Jurisdictional Waters

As noted above, a major flood control channel and other natural drainages are present onsite. The vegetation map (Figure 4) identifies Desert Wash Systems. A jurisdictional delineation report was prepared (Wood 2022d) which identifies potential federal and/or state jurisdictional waters crossing the project area. No apparent jurisdictional waters are present on the WWTP site.

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Appendix A California Natural Diversity Database (CNDDDB) RareFind 5 Report



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Species IS (Calochortus striatus OR Chaetodipus fallax pallidus OR Crotalus ruber OR Desert Fan Palm Oasis Woodland OR Euderma maculatum OR Gopherus agassizii OR Lasiurus xanthinus OR Lasthenia glabrata ssp. coulteri OR Sidalcea neomexicana OR Streptanthus bernardinus OR Wislizenia refracta ssp. refracta OR Taxidea taxus OR Athene cunicularia OR Ayenia compacta OR Ovis canadensis nelsoni OR Saltugilia latimeri OR Linanthus maculatus ssp. maculatus OR Menodora spinescens var. mohavensis OR Antrozous pallidus OR Grusonia parishii OR Rhopalolemma robertsi OR Falco mexicanus OR Monardella robisonii OR Jaffueliobryum wrightii)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Ayenia compacta California ayenia	PDSTE01020	None	None	G4	S3	2B.3
Calochortus striatus alkali mariposa-lily	PMLIL0D190	None	None	G3?	S2S3	1B.2
Chaetodipus fallax pallidus pallid San Diego pocket mouse	AMAFD05032	None	None	G5T3T4	S3S4	SSC
Crotalus ruber red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC
Desert Fan Palm Oasis Woodland Desert Fan Palm Oasis Woodland	CTT62300CA	None	None	G3	S3.2	
Euderma maculatum spotted bat	AMACC07010	None	None	G4	S3	SSC
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL
Gopherus agassizii desert tortoise	ARAAF01012	Threatened	Threatened	G3	S2S3	
Grusonia parishii Parish's club-cholla	PDCAC0D2H0	None	None	G3G4	S2	2B.2
Jaffueliobryum wrightii Wright's jaffueliobryum moss	NBMUS97020	None	None	G5	S2S3	2B.3
Lasiurus xanthinus western yellow bat	AMACC05070	None	None	G4G5	S3	SSC
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Linanthus maculatus ssp. maculatus Little San Bernardino Mtns. linanthus	PDPLM041Y1	None	None	G2T2	S2	1B.2
Menodora spinescens var. mohavensis Mojave menodora	PDOLE09061	None	None	G4T2	S2	1B.2



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Monardella robisonii</i> Robison's monardella	PDLAM180K0	None	None	G3	S3	1B.3
<i>Ovis canadensis nelsoni</i> desert bighorn sheep	AMALE04013	None	None	G4T4	S3	FP
<i>Rhopalolemma robertsi</i> Roberts' rhopalolemma bee	IIHYM83010	None	None	G1	S1	
<i>Saltugilia latimeri</i> Latimer's woodland-gilia	PDPLM0H010	None	None	G3	S3	1B.2
<i>Sidalcea neomexicana</i> salt spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
<i>Streptanthus bernardinus</i> Laguna Mountains jewelflower	PDBRA2G060	None	None	G3G4	S3S4	4.3
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S3	SSC
<i>Wislizenia refracta ssp. refracta</i> jackass-clover	PDCPP09013	None	None	G5T5?	S1	2B.2

Record Count: 24

Appendix B Information for Planning and Consultation (IPaC) Report



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901
<http://www.fws.gov/carlsbad/>

In Reply Refer To:
Project Code: 2022-0037550
Project Name: Proposed Sewer

April 29, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A biological assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a biological assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a biological assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found at the Fish and Wildlife Service's Endangered Species Consultation website at:

<https://www.fws.gov/endangered/what-we-do/faq.html>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Carlsbad Fish And Wildlife Office

2177 Salk Avenue - Suite 250

Carlsbad, CA 92008-7385

(760) 431-9440

Project Summary

Project Code: 2022-0037550

Event Code: None

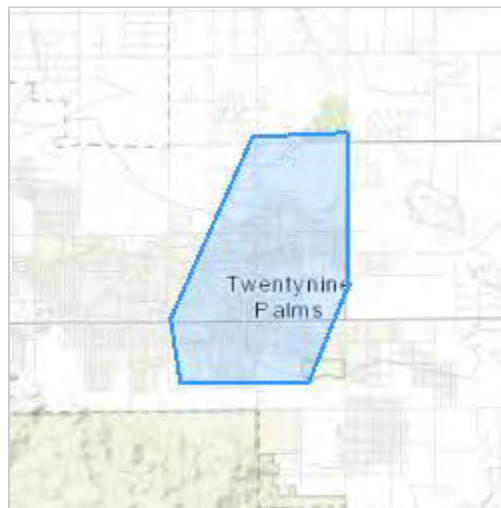
Project Name: Proposed Sewer

Project Type: Wastewater Pipeline - New Constr - Below Ground

Project Description: City sewer system. This project is at a very preliminary stage and work with the US Marine Corps is an option, not a done deal.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@34.15354295,-116.04882879653991,14z>



Counties: San Bernardino County, California

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Reptiles

NAME	STATUS
Desert Tortoise <i>Gopherus agassizii</i> Population: Wherever found, except AZ south and east of Colorado R., and Mexico There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4481	Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: Wood
Name: John Green
Address: 1845 Chicago Ave., Ste D
City: Riverside
State: CA
Zip: 92507
Email: bewickwren@earthlink.net
Phone: 9513698060

Lead Agency Contact Information

Lead Agency: Marine Corps

Appendix C Site Photographs



Photo 1. View from northwestern project area. Development and creosote bush scrub.



Photo 2. View from southeastern project area. Creosote bush scrub and sparse development.



Photo 3. View of southwestern project area. Patchwork development and creosote bush scrub.



Photo 4. View from northeastern project area. Sandy saltbush scrub and development.



Photo 5. View upstream of flood control channel (Desert Wash System) from Utah Trail.



Photo 6. Example of potential burrowing owl habitat (concrete rubble, abandoned pipes).



Photo 7. Sandy Saltbush Scrub in northern project area.



Photo 8. Desert Sink Scrub in northern project area.



Photo 9. Special status plant species Alvenson's foxtail cactus (*Coryphantha alvensonii*).



Photo 10. Special status plant species Utah vine milkweed (*Funastrum utahense*).



Photo 11. Donnell Hill area of western project.



Photo 12. Luckie Park area of eastern project. Good trees for nesting birds.



Photo 13. Mesquite Bosque on WWTP site.

Appendix D Wildlife and Plant Species Observed During Surveys

Plant Species Observed

GYMNOSPERMS (GYMNOSPERMAE)

Ephedraceae

Ephedra californica

EUDICOTS (EUDICOTIDAE)

Amaranthaceae

Amaranthus blitoides

Tidestromia suffruticosa var. *oblongifolia*

Apocynaceae

Asclepias erosa

Asclepias subulata

***Funastrum utahense*

Asteraceae

Ambrosia acanthicarpa

Ambrosia dumosa

Ambrosia salsola

Baileya multiradiata

Bebbia juncea var. *aspera*

Chaenactis fremontii

Chaenactis stevioides

Dicoria canescens

Encelia farinosa

Encelia frutescens

Geraea canescens

Isocoma acradenia

**Lactuca serriola*

Malacothrix glabrata

Palafoxia arida

Rafinesquia neomexicana

**Sonchus asper* ssp. *asper*

Stephanomeria pauciflora

Bignoniaceae

Chilopsis linearis ssp. *arcuata*

Boraginaceae

Amsinckia tessellata

Cryptantha dumetorum

Greeneocharis circumscissa

Johnstonella angustifolia

Pectocarya platycarpa

Pectocarya recurvata

Ephedra Family

desert tea

Amaranth Family

procumbent pigweed

honeysweet

Dogbane and Milkweed Family

desert milkweed

rush milkweed

Utah vine milkweed

Sunflower Family

annual bur-sage

white bur-sage

cheesebush

desert marigold

sweetbush

Fremont pincushion

desert pincushion

desert twinbugs

brittlebush

button brittlebush

desert-sunflower

alkali goldenbush

prickly lettuce

desert dandelion

Spanish-needle

desert chicory

prickly sow thistle

wire-lettuce

Trumpet-Creeper Family

desert willow

Borage Family

bristly fiddleneck

scrambling cryptantha

cushion cryptantha

narrow-leaved Johnstonella

wide-toothed pectocarya

arched-nut pectocarya

Brassicaceae

**Brassica tournefortii*
Lepidium densiflorum
Lepidium fremontii
**Sisymbrium irio*
**Sisymbrium orientale*
Streptanthella longirostris

Cactaceae

***Coryphantha alversonii*
Cylindropuntia bigelovii
Cylindropuntia echinocarpa
**Cylindropuntia fulgida*
Cylindropuntia ramosissima
Echinocereus engelmannii
Ferocactus cylindraceus
Opuntia basilaris

Caryophyllaceae

Achyronychia cooperi

Chenopodiaceae

Atriplex canescens
Atriplex polycarpa
**Chenopodium murale*
**Salsola tragus*
Suaeda nigra

Cleomaceae

Peritoma arborea

Cucurbitaceae

Cucurbita palmata

Ehretiaceae

Tiquilia plicata

Euphorbiaceae

Croton californicus
**Euphorbia maculata*
Euphorbia polycarpa

Mustard Family

Sahara mustard
common pepperweed
desert pepperweed
London rocket
Indian hedgemustard
longbeak streptanthella

Cactus Family

(Alverson's) foxtail cactus
teddy-bear cholla
golden/silver cholla
jumping cholla
pencil cactus
Engelmann's hedgehog cactus
California barrel cactus
beavertail pricklypear

Pink Family

frost-mat

Goosefoot Family

four-wing saltbush
allscale saltbush
nettleleaf goosefoot
Russian thistle
bush seepweed

Spiderflower Family

bladderpod

Gourd and Melon Family

coyote melon

Ehretia Family

fan-leaved tiquilia

Spurge Family

California croton
spotted spurge
smallseed sandmat

Fabaceae

Caesalpinia gilliesii
Dalea mollissima
**Parkinsonia aculeata*
Parkinsonia florida
Prosopis glandulosa var. *torreyana*
Psoralea argophylla
Senegalia greggii
Senna armata

Geraniaceae

**Erodium cicutarium*

Hydrophyllaceae

Phacelia crenulata
Phacelia cf. *tanacetifolia*

Krameriaceae

Krameria bicolor

Lamiaceae

Condea emoryi
Salvia columbariae
Scutellaria mexicana

Loasaceae

Mentzelia albicaulis

Malvaceae

Eremalche exilis
**Malva parviflora*
Sphaeralcea ambigua

Nyctaginaceae

Abronia villosa var. *villosa*
Allionia incarnata
Boerhavia coccinea

Onagraceae

Chylismia claviformis
Eremothera boothii ssp. *desertorum*
Oenothera deltooides

Orobanchaceae

Aphyllon cooperi

Papaveraceae

Eschscholzia minutiflora

Legume Family

bird-of-paradise
soft prairie clover
Mexican palo verde
blue palo verde
honey mesquite
smoke tree
catclaw
spiny senna

Geranium Family

redstem filaree

Waterleaf Family

cleftleaf wildheliotrope
lacy phacelia

Rhatany Family

white rhatany

Mint Family

desert lavender
chia
bladder-sage

Loasa Family

whitestem blazingstar

Mallow Family

white mallow
cheeseweed
desert globemallow

Four-o'clock Family

desert sand verbena
trailing windmills
scarlet spiderling

Evening-Primrose Family

browneyes
desert suncup
Devil's lantern

Broom-Rape Family

desert broomrape

Poppy Family

pygmy poppy

Polygonaceae

Chorizanthe brevicornu
Chorizanthe rigida
Eriogonum deflexum
Eriogonum inflatum
Eriogonum reniforme
Eriogonum thomasii

Rosaceae

Petalonyx thurberi

Simmondsiaceae

Simmondsia chinensis

Solanaceae

Datura wrightii
**Nicotiana glauca*
Lycium cooperi

Tamaricaceae

**Tamarix aphylla*
**Tamarix ramosissima*

Viscaceae

Phoradendron californicum

Zygophyllaceae

Larrea tridentata

MONOCOTS (MONOCOTYLEDONAE)

Arecaceae

^*Washingtonia* sp.

Agavaceae

Yucca schidigera

Poaceae

Aristida purpurea
**Bromus rubens*
**Cynodon dactylon*
Dasyochloa pulchella
Festuca octoflora
Hilaria rigida
**Hordeum murinum*
**Pennisetum setaceum*
**Schismus* sp.

Buckwheat Family

brittle spineflower
Devil's spineflower
skeleton weed
desert trumpet
kidney-leaf wild buckwheat
Thomas' wild buckwheat

Loasa Family

sandpaper-plant

Jojoba Family

jojoba

Nightshade Family

sacred thorn-apple
tree tobacco
peach thorn

Tamarisk Family

athel
saltcedar

Mistletoe Family

desert mistletoe

Caltrop Family

creosote bush

Palm Family

fan palm

Century Plant Family

Mojave yucca

Grass Family

purple three-awn
red brome
Bermuda grass
low woollygrass
sixweeks grass
big galleta
wall barley
crimson fountain grass
Mediterranean grass

^ Fan palms onsite were seedlings and presumed to have sprouted from the seeds of palms planted as landscaping on surrounding developments. They could potentially be *Washingtonia* native to California, but they are not native at this location.

Vertebrate Species Observed

REPTILIA

Eublepharidae

Coleonyx variegatus

Iguanidae

Dipsosaurus dorsalis

Phrynosomatidae

Uta stansburiana

Callisaurus draconoides

Sceloporus uniformis

Teiidae

Aspidoscelis tigris

Colubridae

Pituophis catenifer

Chionactis occipitalis

Viperidae

Crotalus cerastes

AVES

Odontophoridae

Callipepla gambelii

Columbidae

**Columba livia*

**Streptopelia decaocto*

Zenaida macroura

Cuculidae

Geococcyx californianus

Caprimulgidae

Chordeiles acutipennis

Trochilidae

Calypte anna

***Calypte costae*

***Selasphorus rufus*

Charadriidae

Charadrius vociferus

Cathartidae

Cathartes aura

Accipitridae

***Accipiter cooperii*

Buteo jamaicensis

REPTILES

Eyelid Geckos

western banded gecko

Iguanas

desert iguana

Spiny Lizards

common side-blotched lizard

zebra-tailed lizard

yellow-backed spiny lizard

Whiptails and Relatives

tiger whiptail

Colubrid Snakes

gopher snake

western shovel-nosed snake

Vipers

sidewinder

BIRDS

New World Quail

Gambel's quail

Pigeons and Doves

rock pigeon

Eurasian collared dove

mourning dove

Cuckoos, Roadrunners, and Anis

greater roadrunner

Nightjars

lesser nighthawk

Hummingbirds

Anna's hummingbird

Costa's hummingbird

rufous hummingbird

Plovers

killdeer

New World Vultures

turkey vulture

Hawks and Eagles

Cooper's hawk

red-tailed hawk

Picidae

Colaptes auratus
Dryobates scalaris

Falconidae

Falco sparverius

Tyrannidae

Tyrannus verticalis
Sayornis saya
Contopus sordidulus
Myiarchus cinerascens
*******Pyrocephalus rubinus*

Corvidae

Corvus corax

Remizidae

Auriparus flaviceps

Alaudidae

Eremophila alpestris

Hirundinidae

Tachycineta bicolor

Regulidae

Corthylio calendula

Ptilogonatidae

Phainopepla nitens

Poliopitidae

Poliopitila caerulea
*******Poliopitila melanura*

Troglodytidae

Campylorhynchus brunneicapillus

Mimidae

Mimus polyglottos

Sturnidae

**Sturnus vulgaris*

Passeridae

**Passer domesticus*

Fringillidae

Haemorhous mexicanus
Spinus psaltria

Woodpeckers

northern flicker
ladder-backed woodpecker

Falcons

American kestrel

Tyrant Flycatchers

western kingbird
Say's phoebe
western wood-pewee
ash-throated flycatcher
vermillion flycatcher

Crows and Jays

common raven

Penduline Tits and Verdins

verdin

Larks

horned lark

Swallows

tree swallow

Kinglets

ruby-crowned kinglet

Silky-flycatchers

phainopepla

Gnatcatchers and Gnatwrens

blue-gray gnatcatcher
black-tailed gnatcatcher

Wrens

cactus wren

Mockingbirds and Thrashers

northern mockingbird

Starlings

European starling

Old World Sparrows

house sparrow

Fringilline & Cardueline Finches & Allies

house finch
lesser goldfinch

Passerellidae

Amphispiza bilineata
***Spizella breweri*
Zonotrichia leucophrys
Passerculus sandwichensis

Icteridae

Icterus bullockii
Agelaius phoeniceus
Molothrus ater
Euphagus cyanocephalus
Quiscalus mexicanus

Parulidae

Leiothlypis celata
Setophaga coronata
Cardellina pusilla

Cardinalidae

Piranga ludoviciana

MAMMALIA

Leporidae

Lepus californicus
Sylvilagus audubonii

Muridae

Neotoma sp.

Sciuridae

Ammospermophilus leucurus
Otospermophilus beecheyi
Xerospermophilus tereticaudus

Canidae

Canis latrans

Rodentia

≥ one fossorial species (includes *Dipodomys sp.*)

Cricetidae

Neotoma sp.

New World Sparrows

black-throated sparrow
Brewer's sparrow
white-crowned sparrow
savannah sparrow

Blackbirds

Bullock's oriole
red-winged blackbird
brown-headed cowbird
Brewer's blackbird
great-tailed grackle

Wood-Warblers

orange-crowned warbler
yellow-rumped warbler
Wilson's warbler

Cardinals and Allies

western tanager

MAMMALS

Rabbits

black-tailed jackrabbit
desert cottontail

Mice, Rats, and Voles

wood rat (middens)

Squirrels

white-tailed antelope ground squirrel
California ground squirrel
round-tailed ground squirrel

Coyotes, Dogs and Wolves

coyote

Rodents

burrows

Mice, Rats and Voles

woodrat (middens)

KEY

- * = non-native species
- ** = special-status species
- cf. = compares favorably with
- sp. = plant identified to genus only

This list reports only plants and animals observed on the site by this study. Other species may have been overlooked or undetectable due to their growing season (plants) or their activity patterns and/or subterranean habitats (animals). Plants were identified from keys, descriptions and drawings in the Jepson Flora Project (2022). Plant nomenclature and systematics follows the Jepson Flora Project and/or United States Department of Agriculture, Natural Resources Conservation Service (2022). Nomenclature and taxonomy for fauna follows California Bird Records Committee (2022) for avifauna and California Department of Fish and Wildlife (2016a) for herpetofauna and mammals.

**WASTEWATER COLLECTION SYSTEM, PHASES 1 AND 2
BURROWING OWL FOCUSED SURVEY**



CITY OF TWENTYNINE PALMS, SAN BERNARDINO COUNTY, CALIFORNIA

Prepared for:

Terra Nova Planning and Research
42635 Melanie Place, Suite 101
Palm Desert, CA 92211

Nicole Criste, Principal
(760) 341-4800

Prepared by:

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John F. Green, Senior Biologist
(951) 369-8060

21 July 2022

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Appendix A	Vertebrate Species Detected
Appendix B	Photographs

1.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, Inc. (Wood) was contracted by Terra Nova Planning and Research to conduct a biological resources assessment at the site of Phases 1 and 2 of a proposed wastewater collection system project (project) in Twentynine Palms, San Bernardino County, California. The assessment (Wood 2022) identified extensive potential burrowing owl habitat. Therefore, focused surveys were conducted for the burrowing owl. The results of those surveys are presented here.

1.1 Project Location and Topography

The project is entirely within the City of Twentynine Palms, San Bernardino County, California (see Figure 1). It is located primarily on the 7.5-minute Twentynine Palms, Calif. United States Geological Survey (USGS) quadrangle extending slightly south into the Queen Mountain, Calif. USGS quadrangle. It is in Township 1 North, Range 9 East, in portions of Sections 15, 16, 20-22, 27-29, 32 and 33 (see Figure 2). Project topography is roughly level overall, with some low hills in the southwestern area. Elevations range from approximately 1,795 feet (547 meters) in the northeast to 2,140 feet (652 meters) in the southwest. The land within the study area generally slopes from the southwest to the northeast (NV5 2022).

1.2 Project Description

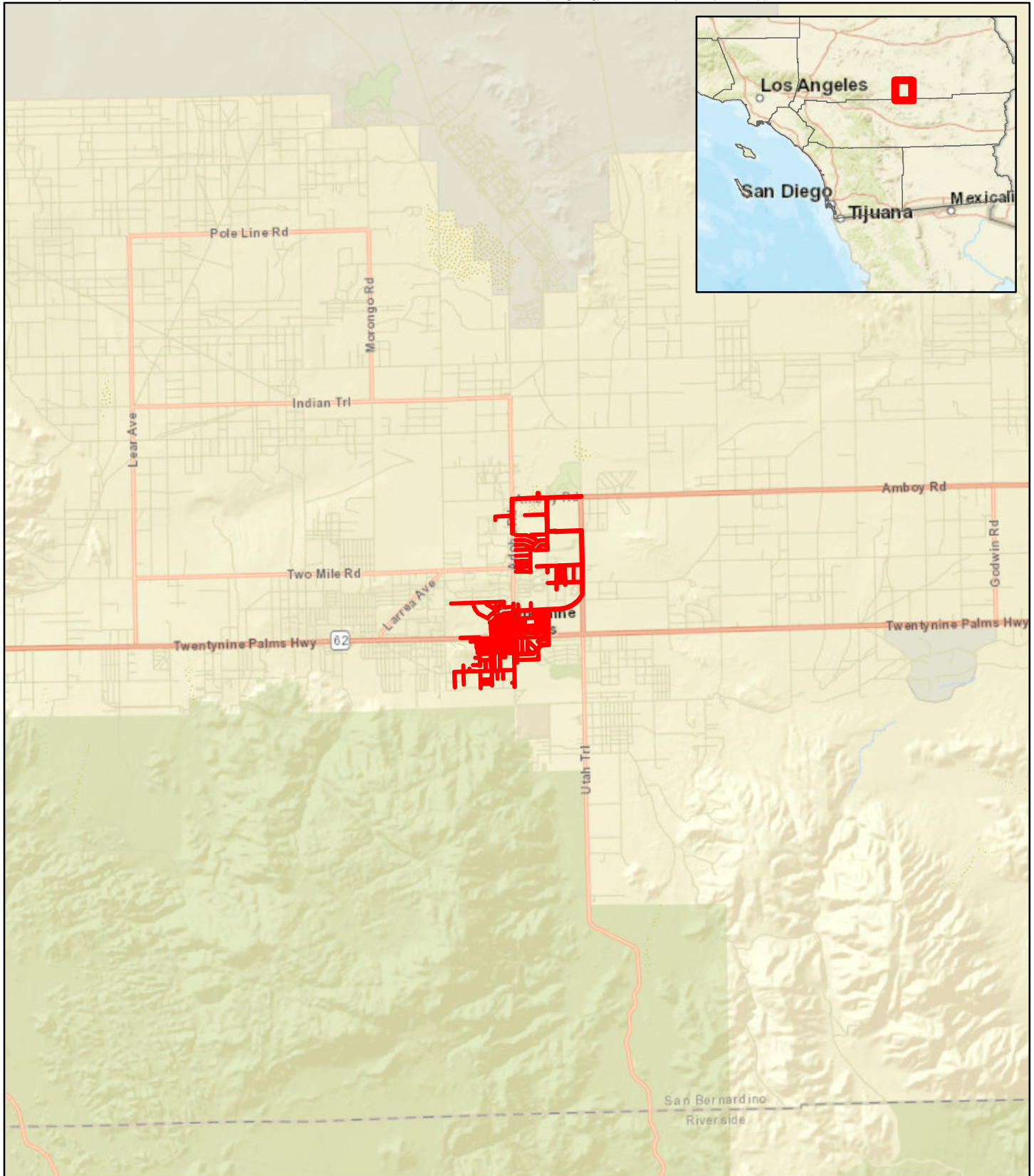
Phase 1 includes:

- Trunk sewers for Phase 1.
- Collector sewers for Phase 1.
- Two existing package treatment plants for the Turtle Rock and Desert Knoll Developments.
- The two large dense military housing developments on Two Mile Road and Joe Davis Drive.
- The residential area northeast of the Adobe Road – Two Mile Road intersection.
- The commercial area on Adobe Road and Amboy Road north of Samarkand Drive.

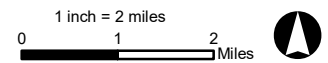
Phase 2 includes:

- Trunk sewers for Phase 2.
- Collector sewers for Phase 2.
- Two planned package treatment plants for project Phoenix and the Wander Hotel.
- The dense downtown area east of Donnell Hill. This area has a balanced mix of both residential and commercial land use.

See Figure 3 for a project overview.



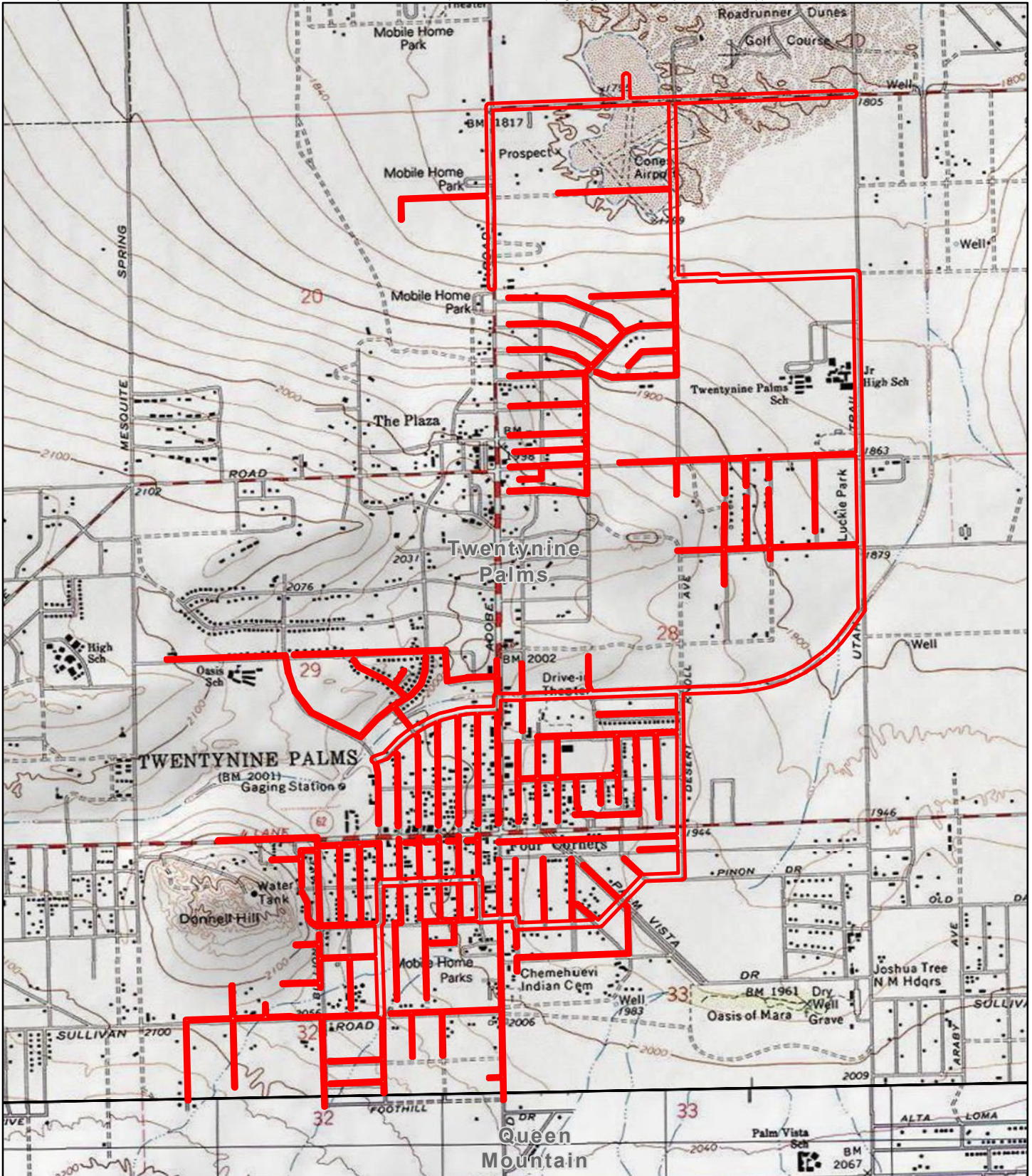
Path: \\sdg1-fs1\GIS\3554_NaturalResources\TerraNova_29Palms_SewerLine_322520122\MXD\ReportFigures\BUOW\Fig1_Regional.mxd, jason.erlich 7/21/2022



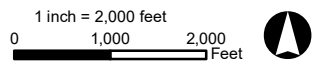
 Project Area

FIGURE 1
Regional Vicinity
Twentynine Palms Wastewater Collection System
Phases 1 and 2
Burrowing Owl Focused Survey
Twentynine Palms, CA

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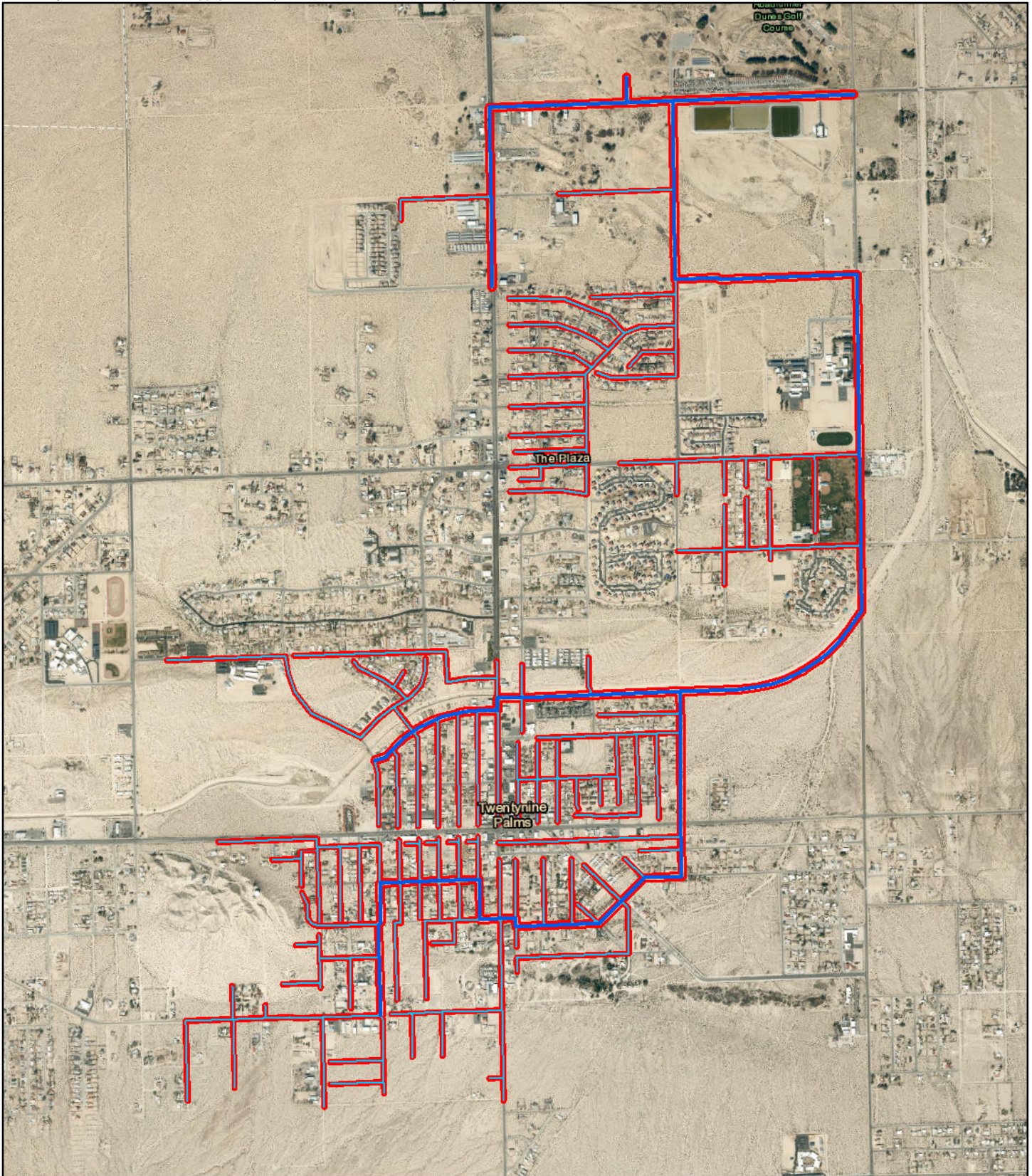
Path: \\sdg1-fs1\GIS\3554_NaturalResources\TerraNova_29Palms_SewerLine_322520122\MXD\ReportFigures\BUOW\Fig2_USGS.mxd, jason.ertich 7/21/2022



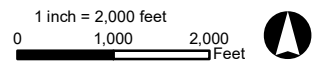
 Project Area

FIGURE 2
USGS 7.5" Topo Quad: Twentynine Palms
Twentynine Palms Sanitation
Sewer Trunk Line Project
Burrowing Owl Focused Survey
Twentynine Palms, CA

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-  Proposed Trunk Sewer
-  Proposed Collector Sewer
-  Project Area

FIGURE 3
Project Overview
Twentynine Palms Sanitation
Sewer Trunk Line Project
Burrowing Owl Focused Survey
Twentynine Palms, CA

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2.0 REGULATORY FRAMEWORK

2.1 Federal

Migratory Bird Treaty Act (MBTA) – Treaties signed by the U.S., Great Britain, Mexico, Japan, and the republics of the former Soviet Union make it unlawful to pursue, capture, kill, and/or possess, or attempt to engage in any such conduct to any migratory bird, nest, egg or parts thereof listed in this document. The MBTA allows the Secretary of the Interior to grant permits for the incidental take of these protected migratory bird species. Impacts include direct disturbance to/destruction of nests, eggs, and birds as well as indirect effects such as loud construction noises (e.g., drilling, operation of heavy equipment, etc. in excess of 60 dB at the nest site) and increased site activities (e.g., moving vehicles, use of guard dogs, presence of personnel) in close proximity to active nests.

National Environmental Policy Act (NEPA) – Portions of the proposed project could fall under the jurisdiction of a federal agency (i.e., U.S. Army Corps of Engineers). The NEPA establishes certain criteria that must be adhered to for any project that is “financed, assisted, conducted or approved by a federal agency. The federal lead agency is required to “determine whether the proposed action will significantly affect the quality of the human environment.”

2.2 State of California

California Environmental Quality Act (CEQA) – The basic goal of the CEQA is to retain a high-quality environment now and in the future. The specific goals are for California's public agencies to:

- Identify the significant environmental effects of their actions; and, either
- Avoid those significant environmental effects, where feasible; or
- Mitigate those significant environmental effects, where feasible.

The CEQA applies to "projects" proposed to be undertaken or requiring approval by State and/or local governmental agencies. projects are activities which have the potential to have a physical impact on the environment and may include the enactment of zoning ordinances, the issuance of conditional use permits and the approval of tentative subdivision maps. Where a project requires approvals from more than one public agency, the CEQA requires one of these public agencies to serve as the "lead agency."

A "lead agency" must complete the environmental review process required by the CEQA. The most basic steps of the environmental review process are:

- Determine if the activity is a "project" subject to the CEQA;
- Determine if the "project" is exempt from the CEQA;
- Perform an Initial Study to identify the environmental impacts of the project and determine whether the identified impacts are "significant". Based on its findings of

"significance", the lead agency prepares one of the following environmental review documents:

- Negative Declaration if it finds no "significant" impacts;
- Mitigated Negative Declaration if it finds "significant" impacts but revises the project to avoid or mitigate those significant impacts;
- Environmental Impact Report (EIR) if it finds "significant" impacts.

While there is no ironclad definition of "significance", Article 5 of the CEQA Guidelines provides criteria to lead agencies in determining whether a project may have significant effects.

The purpose of an EIR is to provide state and local agencies and the public with detailed information on the potentially significant environmental effects which a proposed project is likely to have and to provide ways in which those effects may be minimized and indicate alternatives to the project.

Sections of the State Fish and Game Code pertaining to the protection of birds – Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3505.5 makes it unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds-of-prey, i.e.: owls, hawks, eagles, etc.) or to take, possess, or destroy the nest or eggs of any bird-of-prey. Section 3513 makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA.

3.0 BACKGROUND ON THE BURROWING OWL

The burrowing owl, a member of the Strigidae (the typical owls' family), is a small, tan, short-tailed, ground-dwelling owl. Since it both nests and roosts underground it is uniquely vulnerable to ground disturbing activities. The burrowing owl is federally designated as a Bird of Conservation Concern and state designated as a Species of Special Concern. Burrowing owl is protected by the federal Migratory Bird Treaty Act (U.S. Fish and Wildlife Service "USFWS" 2022), and California Fish and Game Code Sections 3503, 3503.5, 3513, & 3800 (California Legislative Information 2022).

It occurs in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation (Haug et al. 2011). In southern California, burrowing owls are not only found in undisturbed natural areas, but also fallow agricultural fields, margins of active agricultural areas, livestock farms, airports, and vacant lots. Burrowing owls are opportunistic in their selection of burrows, typically utilizing the burrows of small mammal burrows, drainpipes, culverts, and other suitable natural or manmade cavities at or below ground level. In the project area, California ground squirrel (*Otospermophilus beecheyi*) and kit fox (*Vulpes macrotis*) burrows are important natural burrow sources. Burrows and other areas occupied by burrowing owls can be recognized by sign including tracks, molted feathers, cast pellets, prey remains, eggshell fragments, owl white wash, and nest burrow decoration materials (e.g., paper, foil, plastic items, livestock or other

animal manure, etc.) (California Department of Fish and Game "CDFG" 2012). The species may be active both day and night and may be seen perching conspicuously on fence posts or standing at the entrance of their burrows. Due to the characteristic fossorial habits of burrowing owls, nesting and roosting burrows are a critical component of their habitat.

Analyses of regional patterns for breeding populations of burrowing owls have detected declines both locally in their central and southern coastal breeding areas, and statewide where the species has experienced breeding range retraction. Threat factors affecting burrowing owl populations include habitat loss, degradation and modification, and eradication of ground squirrels resulting in a loss of suitable burrows required by burrowing owls for nesting, protection from predators, and shelter. Conservation for burrowing owls may include but may not be limited to protecting remaining breeding pairs or providing for population expansion, protecting and enhancing breeding and essential habitat, and amending or augmenting land

4.0 METHODS

4.1 Literature Review and Records Search

A literature review and record search were conducted to identify burrowing owl occurrences in the project vicinity. The review included:

- A report from the California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDDB) for a five-mile radius of the project site (CDFW 2022),
- Aerial photographs, and
- Pertinent documents from the Wood library and project files (*e.g.*, other biological surveys from the general vicinity).

4.2 Focused Surveys

Habitat was assessed for the burrowing owl by Wood senior biologist John F. Green on 22 and 28 March 2022. The habitat assessment included visually inspecting and noting all areas of the site and adjacent areas (a 150-meter buffer around the site) for components of burrowing owl habitat. Habitat was present, so a burrow survey was conducted from 5 through 12 April 2022. The four focused surveys were conducted on 11-12 April, 4 & 27 May, and 6 July 2022. The focused survey visits were all conducted between morning civil twilight sunrise and 10:00 AM.

Straight line transects spaced no more than 20 meters apart (ten meters apart on the project site) were walked throughout all suitable areas of the site and buffers in order to identify occupiable habitat. Where access was not possible, binoculars were used to scan for owls and habitat. Burrows suitable for burrowing owl occupation were recorded with a Global Positioning System (GPS), and closely monitored and inspected during each subsequent visit for evidence of burrowing owl sign.

Binoculars were used to identify birds and to survey perches and potential burrows prior to closer approach. Survey personnel, dates, times, and weather conditions are presented in Table 1 below.

Table 1. Burrowing Owl Survey Data

Date (2022)	Surveyor(s)	Time	% Cloud Cover, Wind miles per hour (mph)	Temperature °Fahrenheit	Burrowing Owl Observed?
Burrow Survey 5-12 April	See below*	Full day	Suitable for detection of burrows	N/A	No
Focused Survey 1 11 April	John Green	0700-1000	Clear (0%), winds 1-3 mph	60-71°F	No
Focused Survey 1 12 April	John Green	0700-1000	Clear (0%), winds 4-12 mph	46-54°F	No
Focused Survey 2 4 May	John Green	0535-0850	Clear (0%), winds 0-3 mph	62-73°F	No
Focused Survey 3 27 May	John Green	0500-0910	0-5% cover, winds 3-8 mph	72-81°F	No
Focused Survey 4 6 July	John Green	0540-0940	Clear (0%), winds 5-6 mph	74-86°F	No

*John Green, Nathan Moorhatch, Michael Wilcox, Alec Williams, Phil Clevinger, Lauryn Duoto, Emily Urquidi, Kevin Salgado, and Melanie Bukovac.

5.0 RESULTS

5.1 Literature Review and Records Search

The nearest known record of burrowing owl is approximately five miles northeast of the project site.

5.2 Focused Surveys

Potential burrows and burrow surrogates are shown on Figure 4. No burrowing owls or their sign were detected. All vertebrate species detected were recorded in field notes and are included in Appendix A. Photographs of potential burrowing habitat were taken. A sample of these can be seen in Appendix B and on the cover page of this report.



- Survey Area
- Proposed Trunk Sewer - Phase 1
- potential burrowing owl burrow

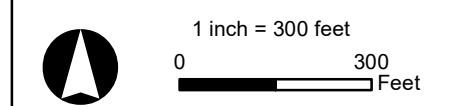
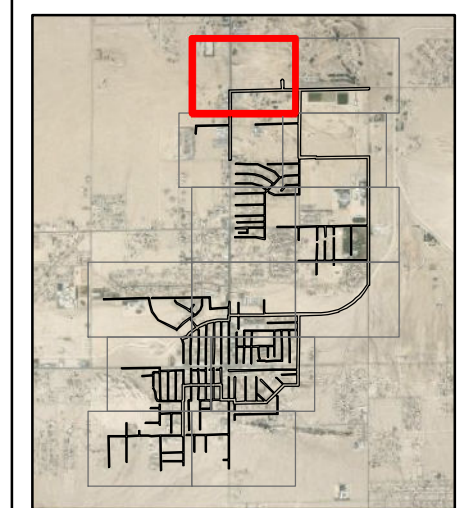
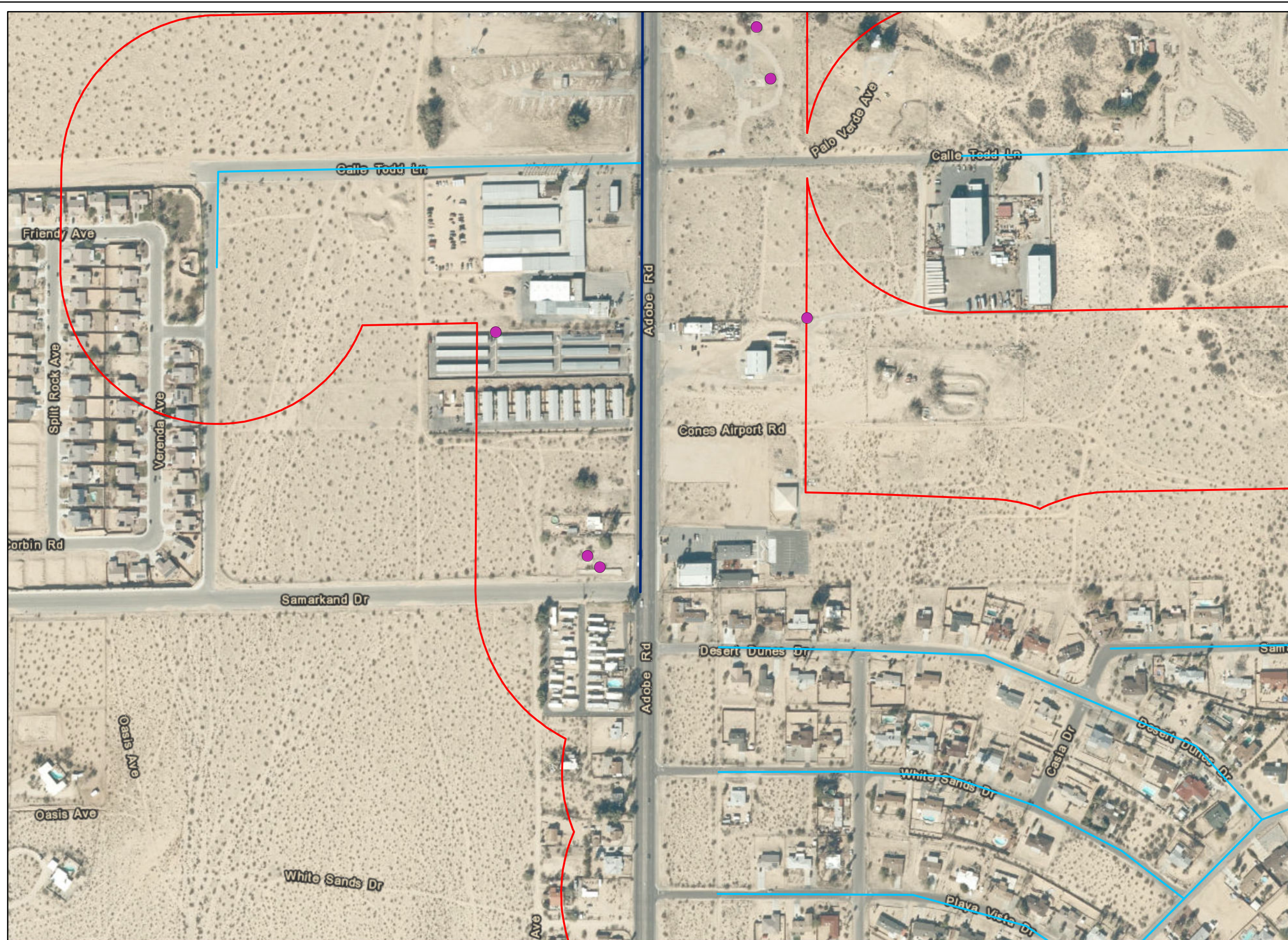


FIGURE 4a
 Burrowing Owl Focused Survey
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA





- Survey Area
- Proposed Trunk Sewer - Phase 1
- Proposed Collector Sewer
- potential burrowing owl burrow

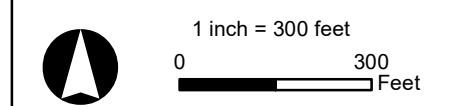
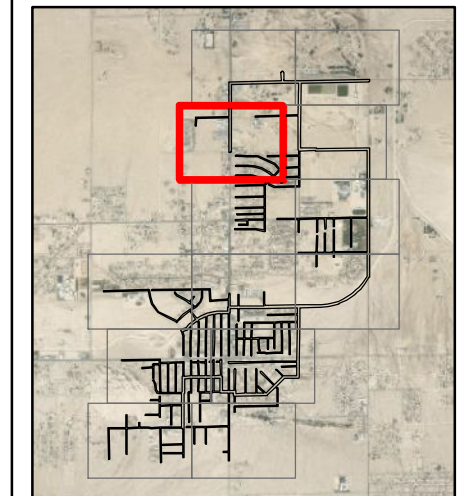
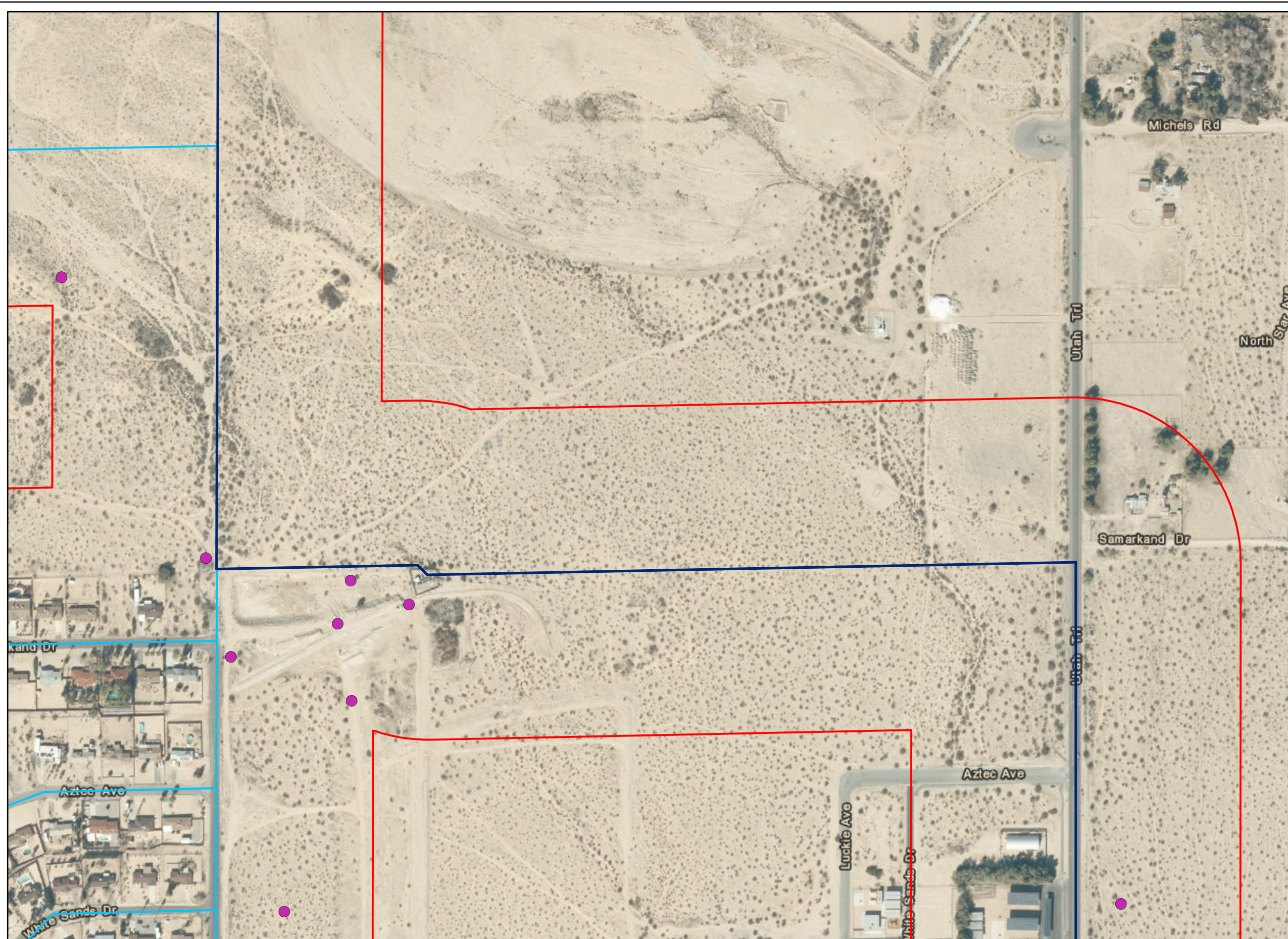


FIGURE 4b
 Burrowing Owl Focused Survey
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



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 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



- Survey Area
- Proposed Trunk Sewer - Phase 1
- Proposed Collector Sewer
- potential burrowing owl burrow

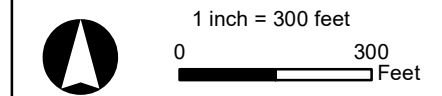
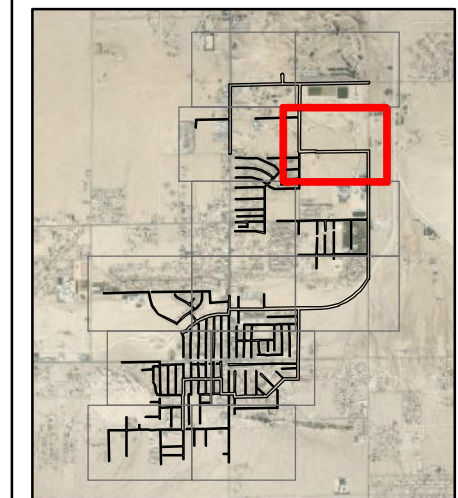
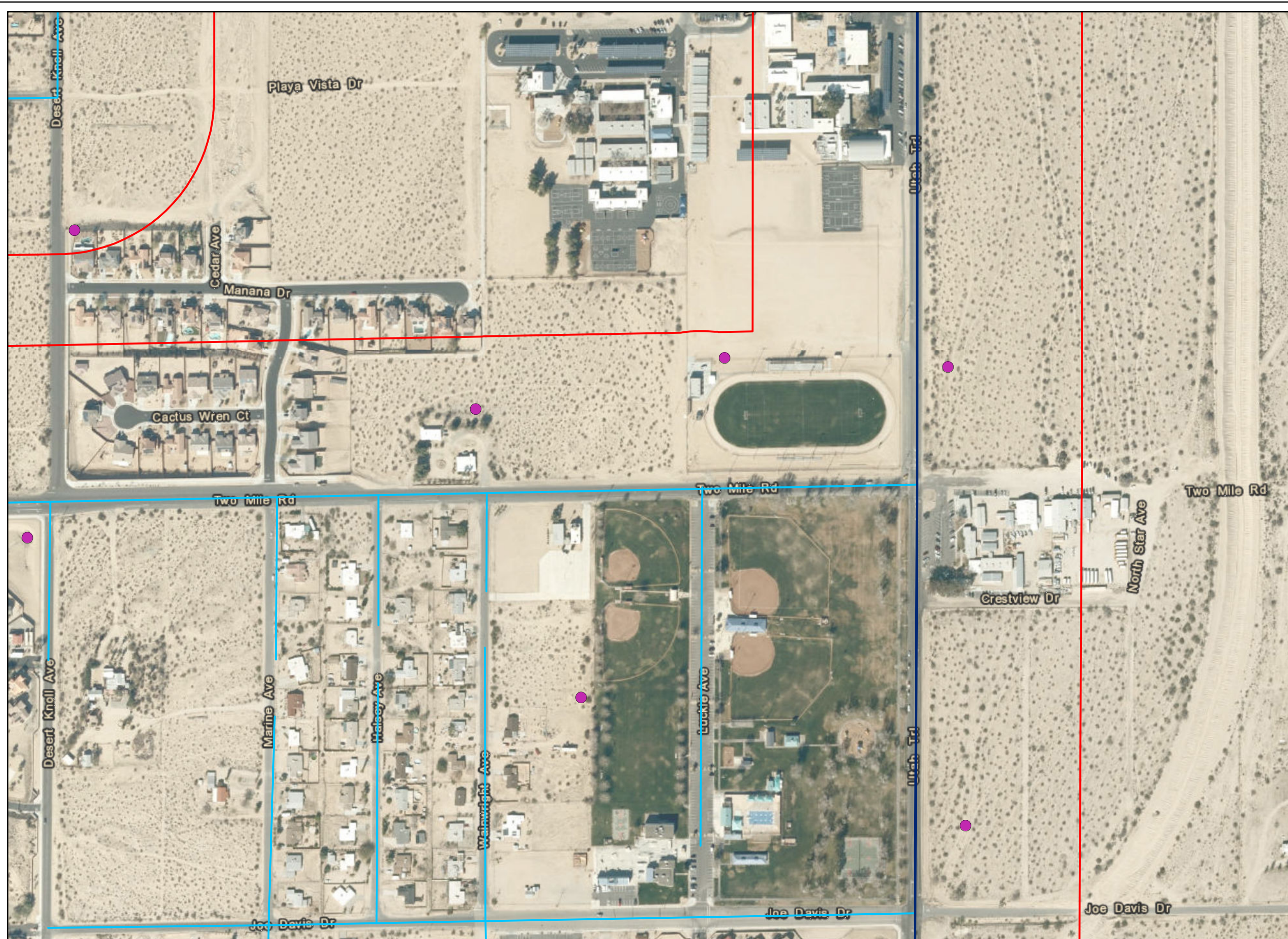


FIGURE 4c
 Burrowing Owl Focused Survey
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



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- Survey Area
- Proposed Trunk Sewer - Phase 1
- Proposed Collector Sewer
- potential burrowing owl burrow

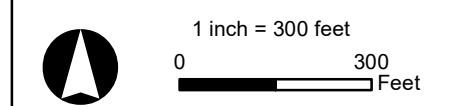
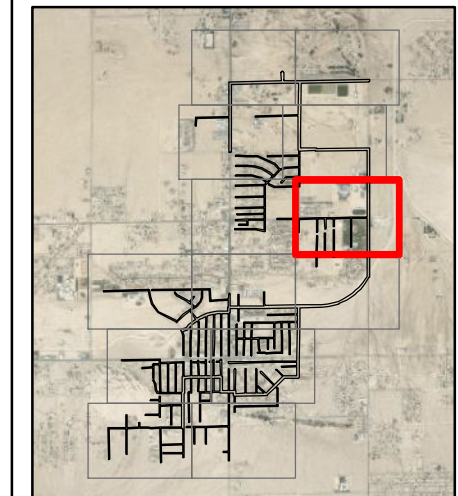
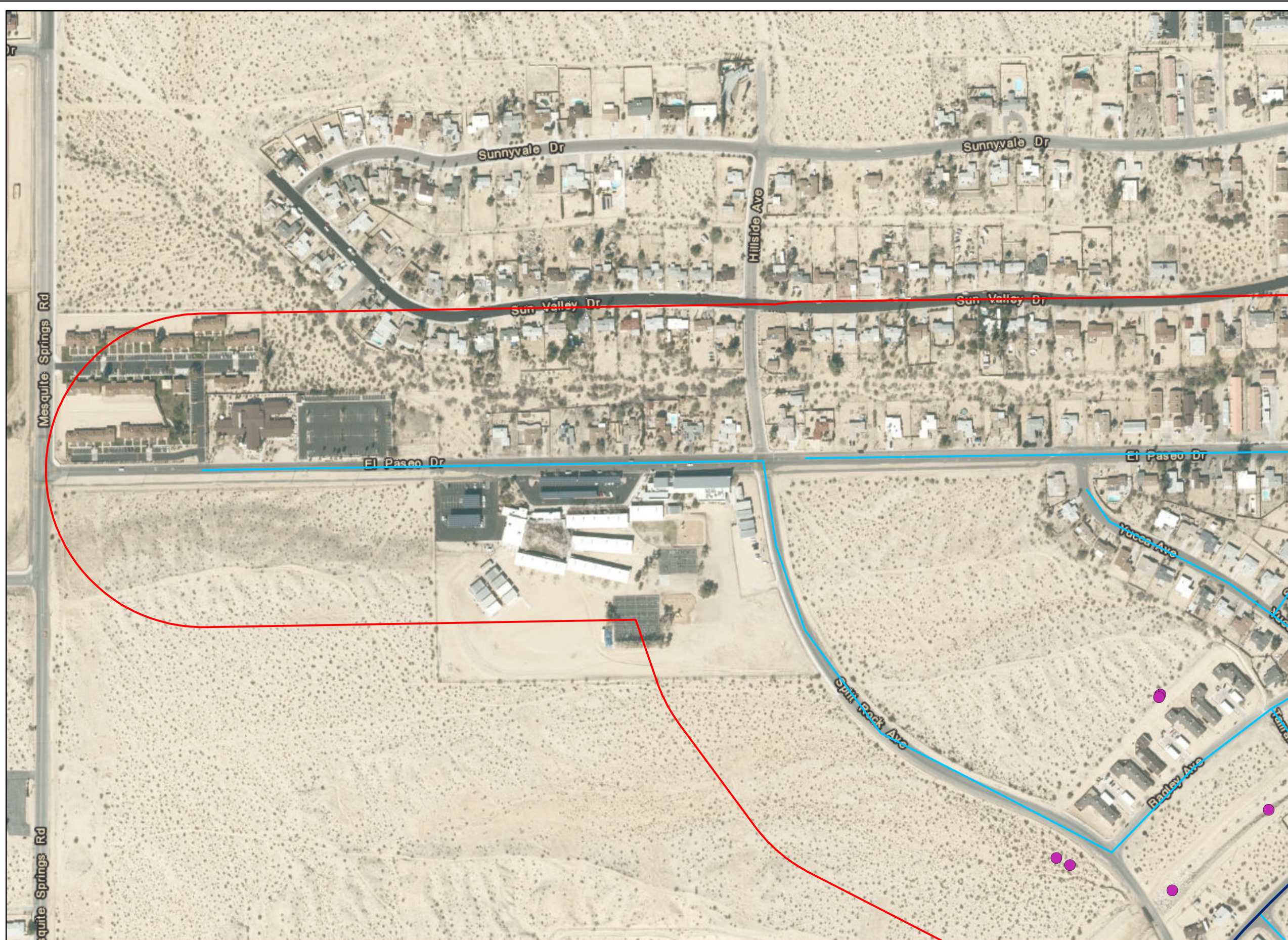


FIGURE 4b
 Burrowing Owl Focused Survey
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



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- Survey Area
- Proposed Trunk Sewer - Phase 1
- Proposed Collector Sewer
- potential burrowing owl burrow

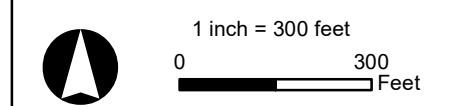
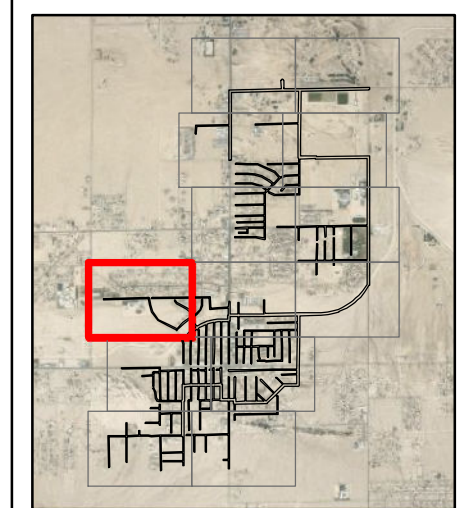
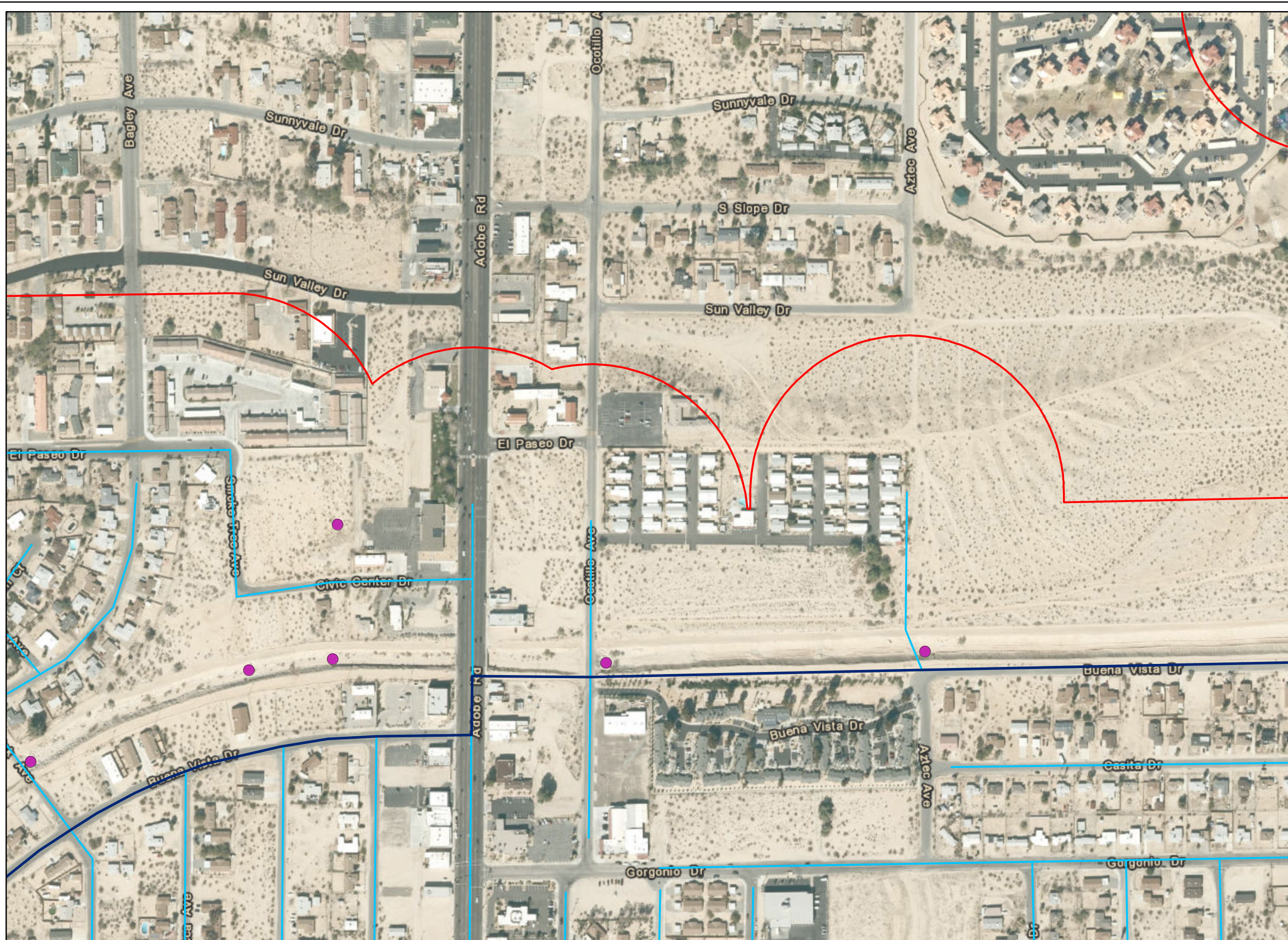


FIGURE 4e
 Burrowing Owl Focused Survey
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



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- Survey Area
- Proposed Trunk Sewer - Phase 1
- Proposed Collector Sewer
- potential burrowing owl burrow

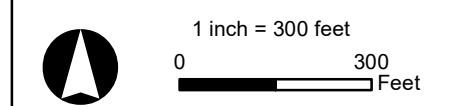
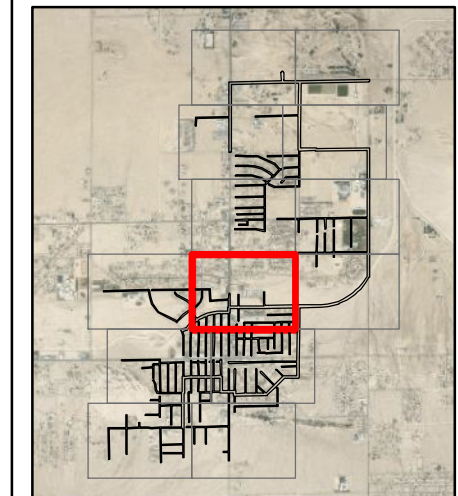
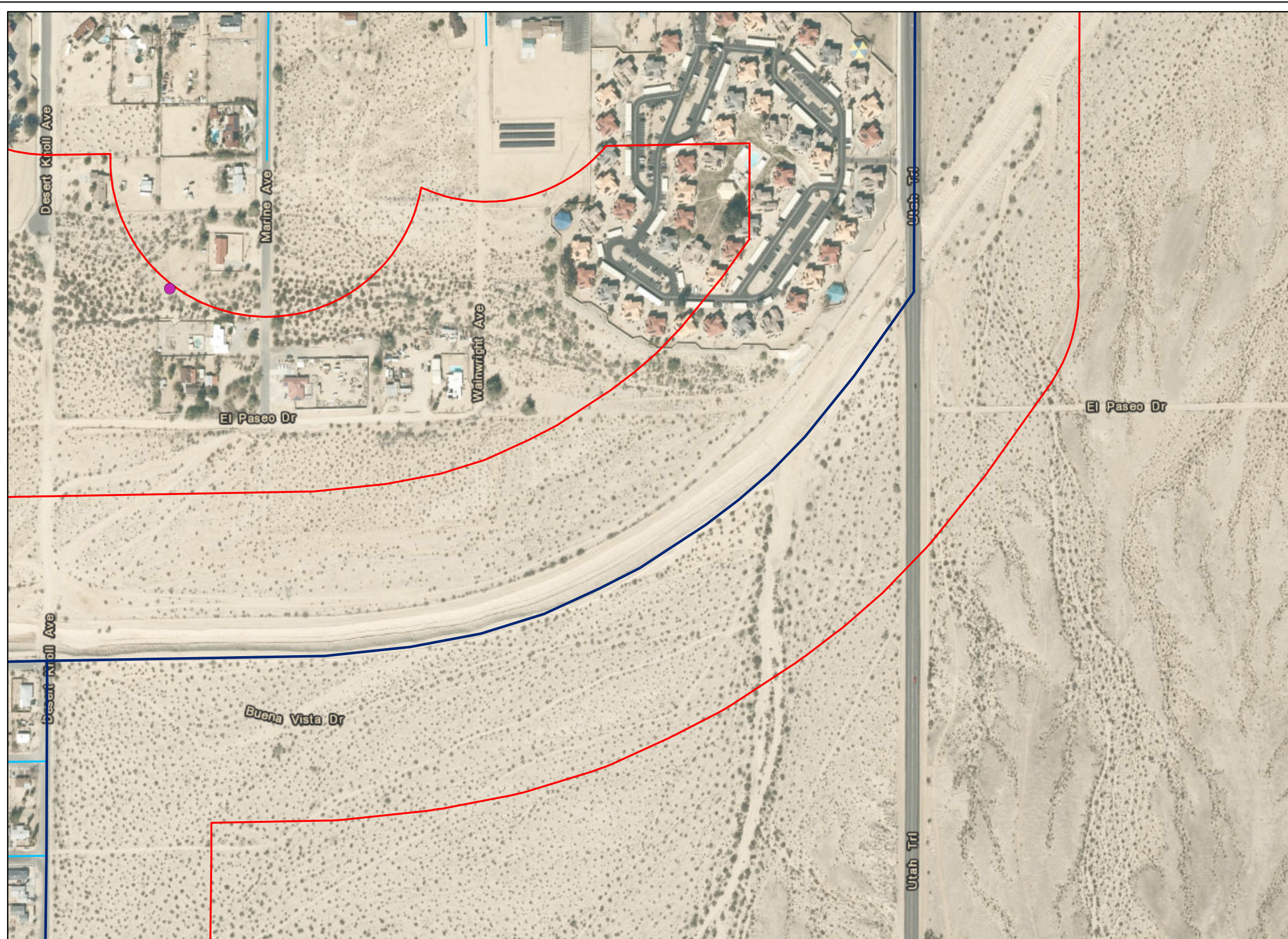


FIGURE 4f
 Burrowing Owl Focused Survey
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



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- Survey Area
- Proposed Trunk Sewer - Phase 1
- Proposed Collector Sewer
- potential burrowing owl burrow

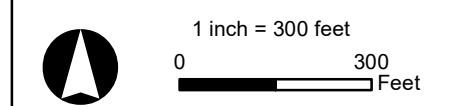
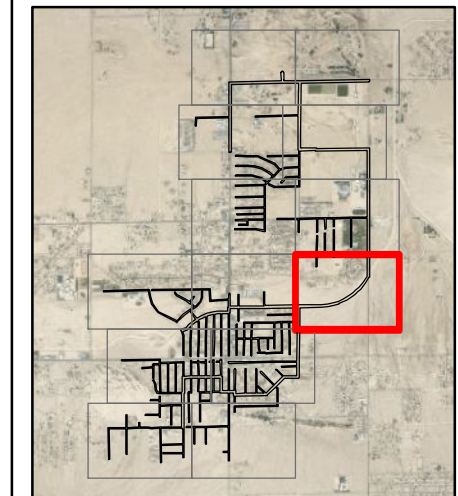
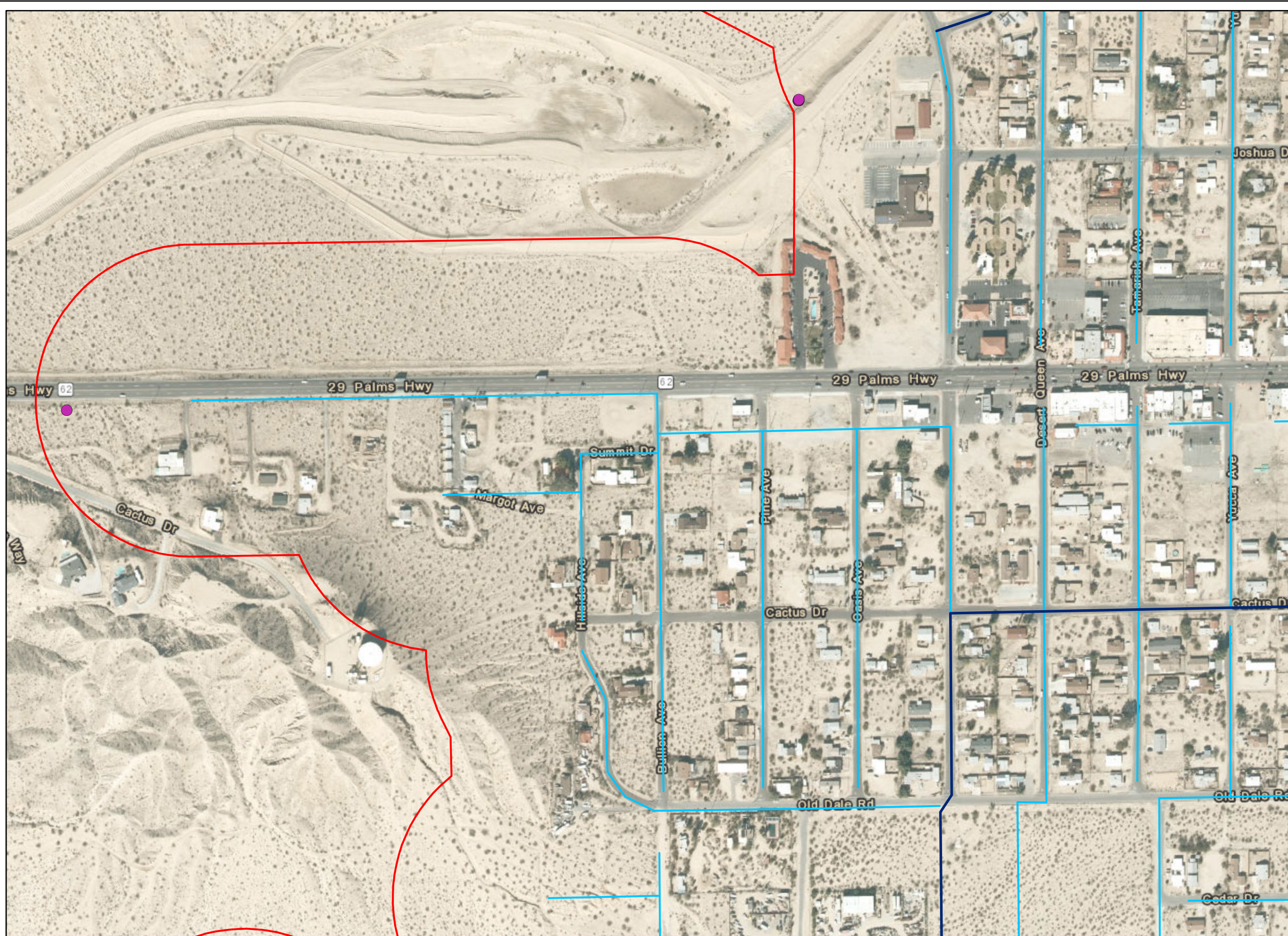


FIGURE 4g
 Burrowing Owl Focused Survey
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



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- Survey Area
- Proposed Trunk Sewer - Phase 1
- Proposed Collector Sewer
- potential burrowing owl burrow

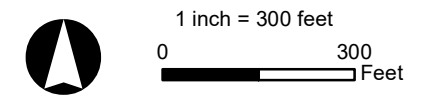
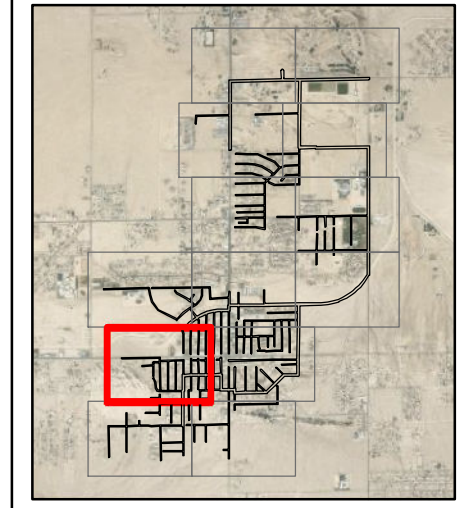
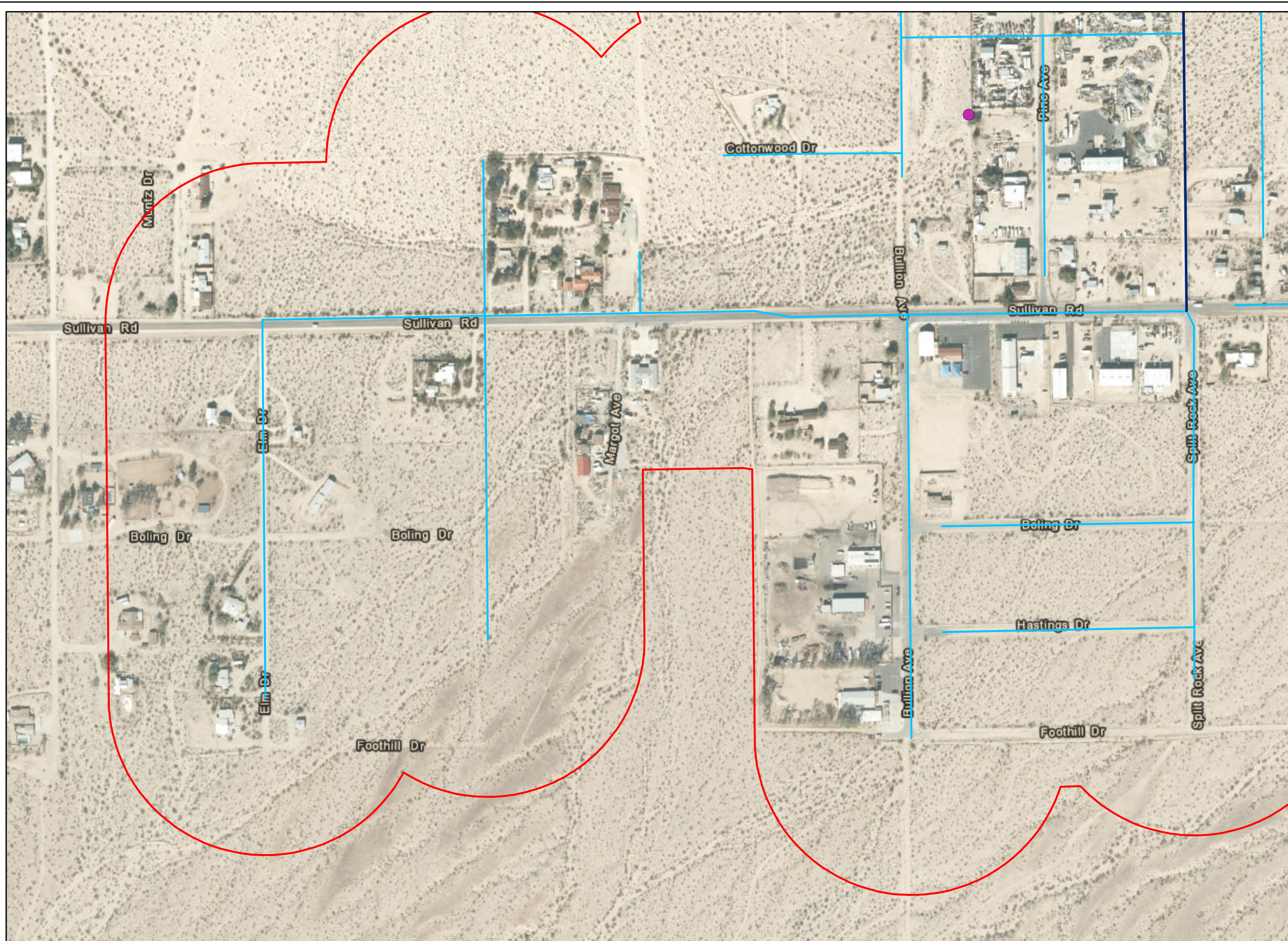


FIGURE 4c
 Burrowing Owl Focused Survey
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



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- Survey Area
- Proposed Trunk Sewer - Phase 1
- Proposed Collector Sewer
- potential burrowing owl burrow

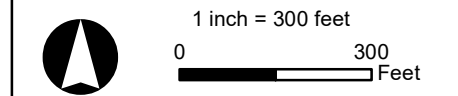
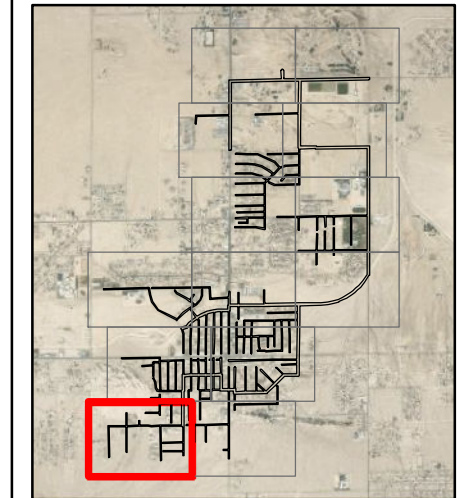
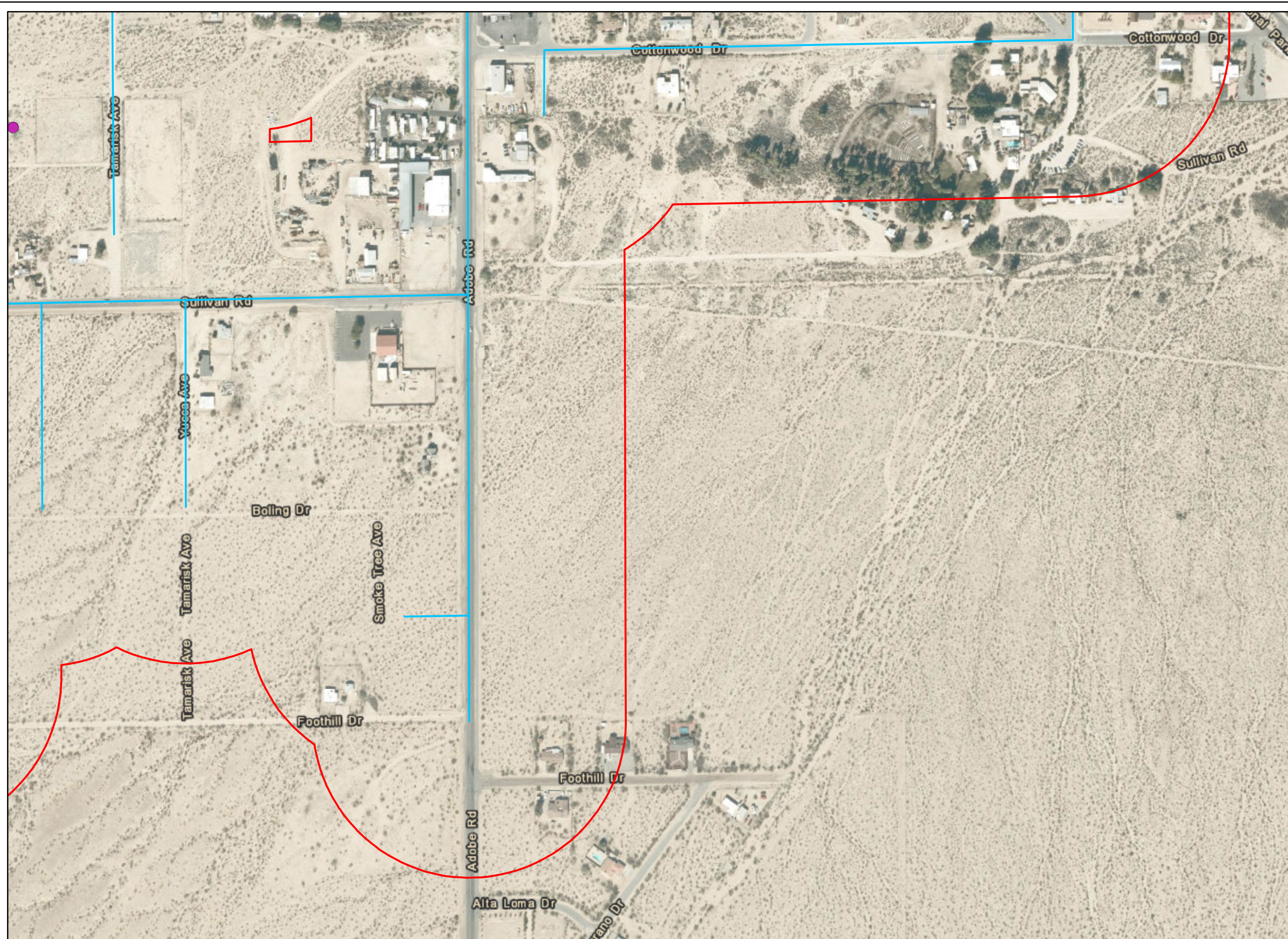


FIGURE 4d
 Burrowing Owl Focused Survey
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA





- Survey Area
- Proposed Collector Sewer
- potential burrowing owl burrow

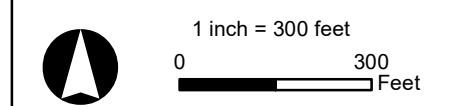
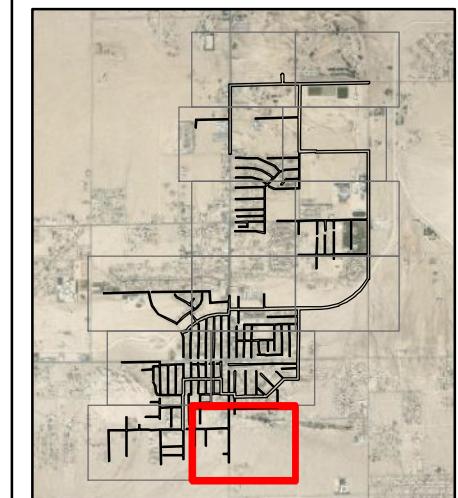


FIGURE 4j
 Burrowing Owl Focused Survey
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



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6.0 DISCUSSION

Focused surveys did not detect burrowing owls or their sign, but suitable habitat is present and widespread. Therefore, although burrowing owls are absent at this time, the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) requires preconstruction take avoidance surveys for burrowing owls in case the site has been occupied in the interim between the focused surveys and initiation of construction:

“Field experience from 1995 to present supports the conclusion that it would be effective to complete an initial take avoidance survey no less than 14 days prior to initiating ground disturbance activities using the recommended methods described in the Detection Surveys section above. Implementation of avoidance and minimization measures would be triggered by positive owl presence on the site where project activities will occur. The development of avoidance and minimization approaches would be informed by monitoring the burrowing owls. Burrowing owls may re-colonize a site after only a few days. Time lapses between project activities trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance.”

If burrowing owls are found during take avoidance surveys and are unavoidable, guidelines in CDFG (2012) will need to be followed and consultation with the CDFW may be required.

7.0 REFERENCES

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Appendix A Vertebrate Species Detected

REPTILIA

Eublepharidae

Coleonyx variegatus

Iguanidae

Dipsosaurus dorsalis

Phrynosomatidae

Uta stansburiana

Callisaurus draconoides

Sceloporus uniformis

Teiidae

Aspidoscelis tigris

Colubridae

Pituophis catenifer

Chionactis occipitalis

Viperidae

Crotalus cerastes

AVES

Odontophoridae

Callipepla gambelii

Columbidae

**Columba livia*

**Streptopelia decaocto*

Zenaida asiatica

Zenaida macroura

Cuculidae

Geococcyx californianus

Caprimulgidae

Chordeiles acutipennis

Trochilidae

Calypte anna

***Calypte costae*

***Selasphorus rufus*

Charadriidae

Charadrius vociferus

Cathartidae

Cathartes aura

Accipitridae

***Accipiter cooperii*

Buteo jamaicensis

REPTILES

Eyelid Geckos

western banded gecko

Iguanas

desert iguana

Spiny Lizards

common side-blotched lizard

zebra-tailed lizard

yellow-backed spiny lizard

Whiptails and Relatives

tiger whiptail

Colubrid Snakes

gopher snake

western shovel-nosed snake

Vipers

sidewinder

BIRDS

New World Quail

Gambel's quail

Pigeons and Doves

rock pigeon

Eurasian collared dove

white-winged dove

mourning dove

Cuckoos, Roadrunners, and Anis

greater roadrunner

Nightjars

lesser nighthawk

Hummingbirds

Anna's hummingbird

Costa's hummingbird

rufous hummingbird

Plovers

killdeer

New World Vultures

turkey vulture

Hawks and Eagles

Cooper's hawk

red-tailed hawk

Picidae

Colaptes auratus
Dryobates scalaris

Falconidae

Falco sparverius

Tyrannidae

Myiarchus cinerascens
Tyrannus verticalis
Contopus sordidulus
Sayornis nigricans
Sayornis saya
****Pyrocephalus rubinus**

Corvidae

Corvus corax

Remizidae

Auriparus flaviceps

Alaudidae

Eremophila alpestris

Hirundinidae

Tachycineta bicolor

Regulidae

Corthylio calendula

Ptilonotidae

Phainopepla nitens

Poliophtidae

Poliophtila caerulea
****Poliophtila melanura**

Troglodytidae

Thryomanes bewickii
Campylorhynchus brunneicapillus

Mimidae

****Toxostoma lecontei**
Mimus polyglottos

Sturnidae

**Sturnus vulgaris*

Turdidae

Catharus ustulatus
Turdus migratorius

Passeridae

**Passer domesticus*

Woodpeckers

northern flicker
ladder-backed woodpecker

Falcons

American kestrel

Tyrant Flycatchers

ash-throated flycatcher
western kingbird
western wood-pewee
black phoebe
Say's phoebe
vermillion flycatcher

Crows and Jays

common raven

Penduline Tits and Verdins

verdin

Larks

horned lark

Swallows

tree swallow

Kinglets

ruby-crowned kinglet

Silky-flycatchers

phainopepla

Gnatcatchers and Gnatwrens

blue-gray gnatcatcher
black-tailed gnatcatcher

Wrens

Bewick's wren
cactus wren

Mockingbirds and Thrashers

LeConte's thrasher
northern mockingbird

Starlings

European starling

Thrushes

Swainson's thrush
American robin

Old World Sparrows

house sparrow

Fringillidae

Haemorhous mexicanus
Spinus psaltria

Passerellidae

Amphispiza bilineata
***Spizella breweri*
Zonotrichia leucophrys
Passerculus sandwichensis

Icteridae

Icterus bullockii
Agelaius phoeniceus
Molothrus ater
Euphagus cyanocephalus
Quiscalus mexicanus

Parulidae

Leiothlypis celata
Setophaga coronata
Cardellina pusilla

Cardinalidae

Piranga ludoviciana

MAMMALIA

Leporidae

Lepus californicus
Sylvilagus audubonii

Muridae

Neotoma sp.

Sciuridae

Ammospermophilus leucurus
Otospermophilus beecheyi
Xerospermophilus tereticaudus

Canidae

Canis latrans

Rodentia

≥ one fossorial species (includes *Dipodomys sp.*)

Cricetidae

Neotoma sp.

Fringilline & Cardueline Finches & Allies

house finch
lesser goldfinch

New World Sparrows

black-throated sparrow
Brewer's sparrow
white-crowned sparrow
savannah sparrow

Blackbirds

Bullock's oriole
red-winged blackbird
brown-headed cowbird
Brewer's blackbird
great-tailed grackle

Wood-Warblers

orange-crowned warbler
yellow-rumped warbler
Wilson's warbler

Cardinals and Allies

western tanager

MAMMALS

Rabbits

black-tailed jackrabbit
desert cottontail

Mice, Rats, and Voles

wood rat (middens)

Squirrels

white-tailed antelope ground squirrel
California ground squirrel
round-tailed ground squirrel

Coyotes, Dogs and Wolves

coyote

Rodents

burrows

Mice, Rats and Voles

woodrat (middens)

Wastewater Collection System, Phases 1 & 2
Burrowing Owl Focused Survey
July 2022

KEY

- * = non-native species
- ** = special-status species
- cf. = compares favorably with
- sp. = identified to genus only

This list reports only vertebrate animals observed on the site by this study. Other species may have been overlooked or undetectable due to their activity patterns and/or subterranean habitats. Nomenclature and taxonomy for fauna follows California Bird Records Committee (2022) for avifauna and California Department of Fish and Wildlife (2016) for herpetofauna and mammals.

Appendix B Photographs



Photo 1. Example of potential burrowing owl habitat (mammal burrow).



Photo 2. Example of potential burrowing owl habitat (concrete rubble, abandoned pipes).



Photo 3. Examples of potential burrowing owl habitat (riprap, concrete slab with cavities beneath).



Photo 4. Example of potential burrowing owl habitat (construction debris).

**WASTEWATER COLLECTION SYSTEM, PHASES 1 AND 2
DESERT TORTOISE FOCUSED SURVEY**



CITY OF TWENTYNINE PALMS, SAN BERNARDINO COUNTY, CALIFORNIA

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12 May 2022

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TABLE OF APPENDICES

Appendix A Survey Forms

1.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, Inc. (Wood) was contracted by Terra Nova Planning and Research to conduct a focused survey for the desert tortoise (*Gopherus agassizii*) at the site of Phases 1 and 2 of a proposed wastewater collection system project (project) in Twentynine Palms, San Bernardino County, California. This report provides methods, results, and discussion of the survey.

1.1 Project Location and Topography

The project is entirely within the City of Twentynine Palms, San Bernardino County, California (see Figure 1). It is located primarily on the 7.5-minute Twentynine Palms, Calif. United States Geological Survey (USGS) quadrangle extending slightly south into the Queen Mountain, Calif. USGS quadrangle. It is in Township 1 North, Range 9 East, in portions of Sections 15, 16, 20-22, 27-29, 32 and 33 (see Figure 2). Project topography is roughly level overall, with some low hills in the southwestern area. Elevations range from approximately 1,795 feet (547 meters) in the northeast to 2,140 feet (652 meters) in the southwest. The land within the study area generally slopes from the southwest to the northeast (NV5 2022).

1.2 Project Description

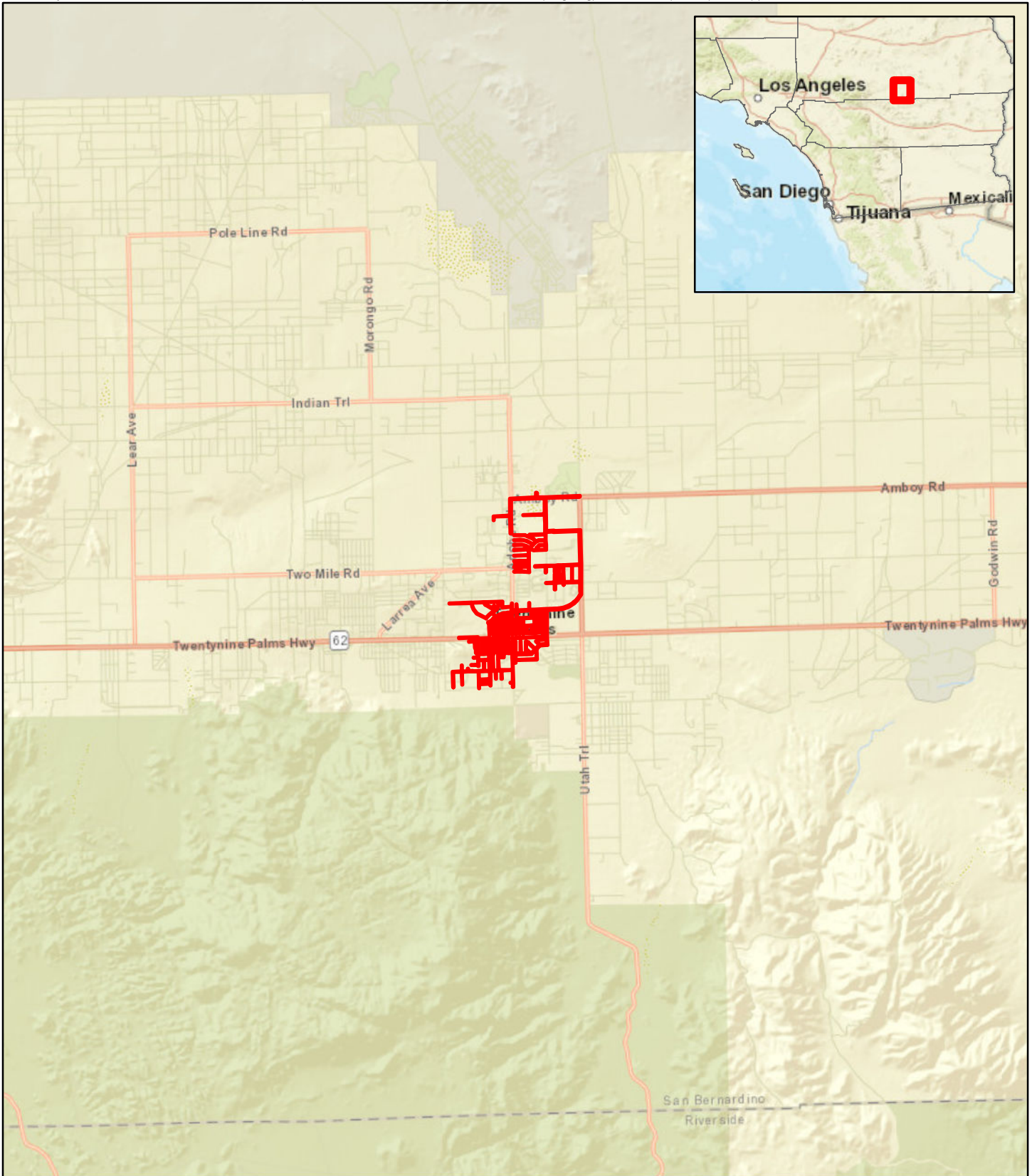
Phase 1 includes:

- Trunk sewers for Phase 1.
- Collector sewers for Phase 1.
- Two existing package treatment plants for the Turtle Rock and Desert Knoll Developments.
- The two large dense military housing developments on Two Mile Road and Joe Davis Drive.
- The residential area northeast of the Adobe Road – Two Mile Road intersection.
- The commercial area on Adobe Road and Amboy Road north of Samarkand Drive.

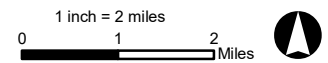
Phase 2 includes:

- Trunk sewers for Phase 2.
- Collector sewers for Phase 2.
- Two planned package treatment plants for project Phoenix and the Wander Hotel.
- The dense downtown area east of Donnell Hill. This area has a balanced mix of both residential and commercial land use.

See Figure 3 for a project overview.



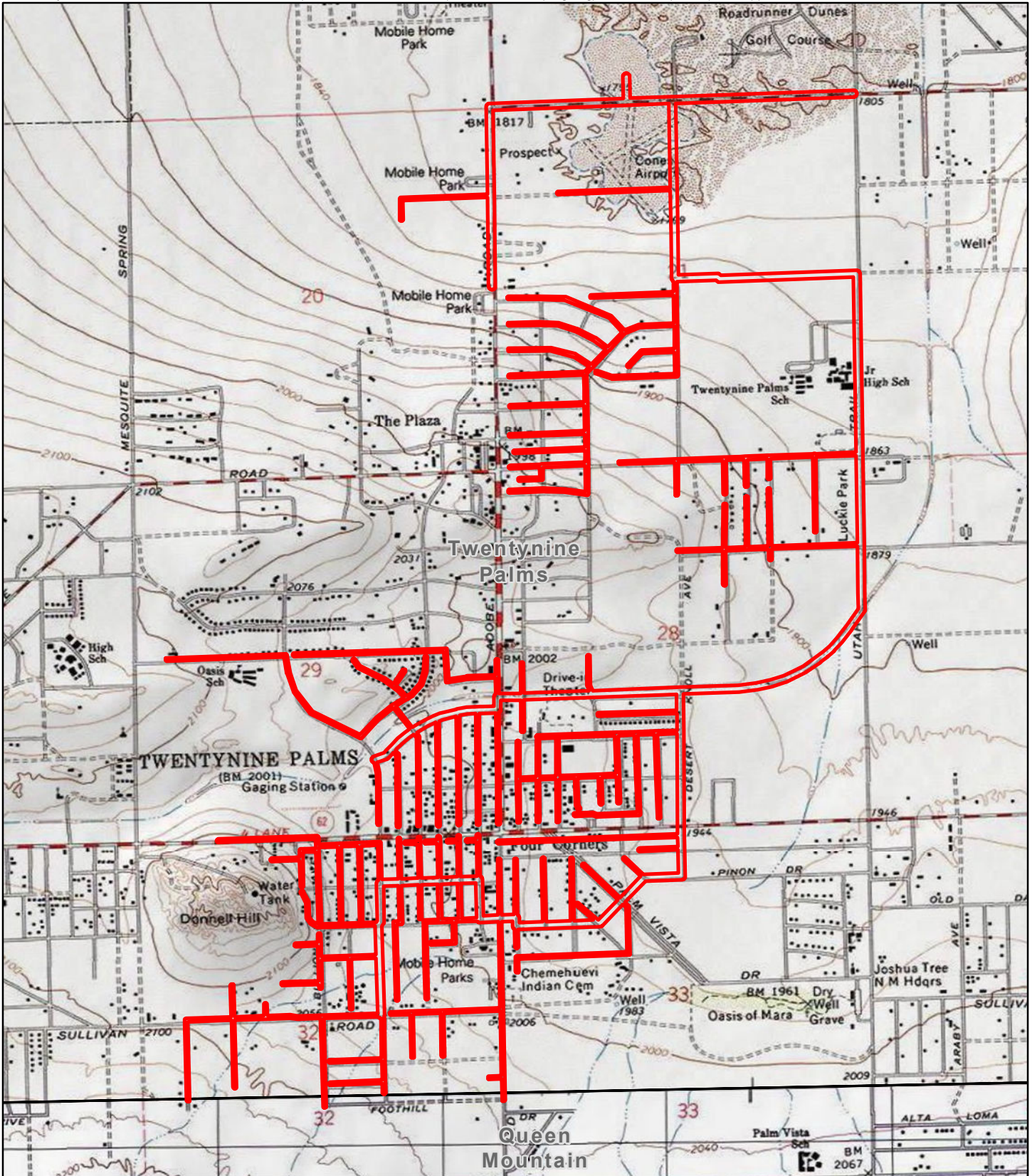
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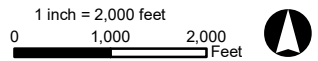
 Project Area

FIGURE 1
Regional Vicinity
Twentynine Palms Wastewater
Collection System, Phases 1 and 2
Twentynine Palms, CA

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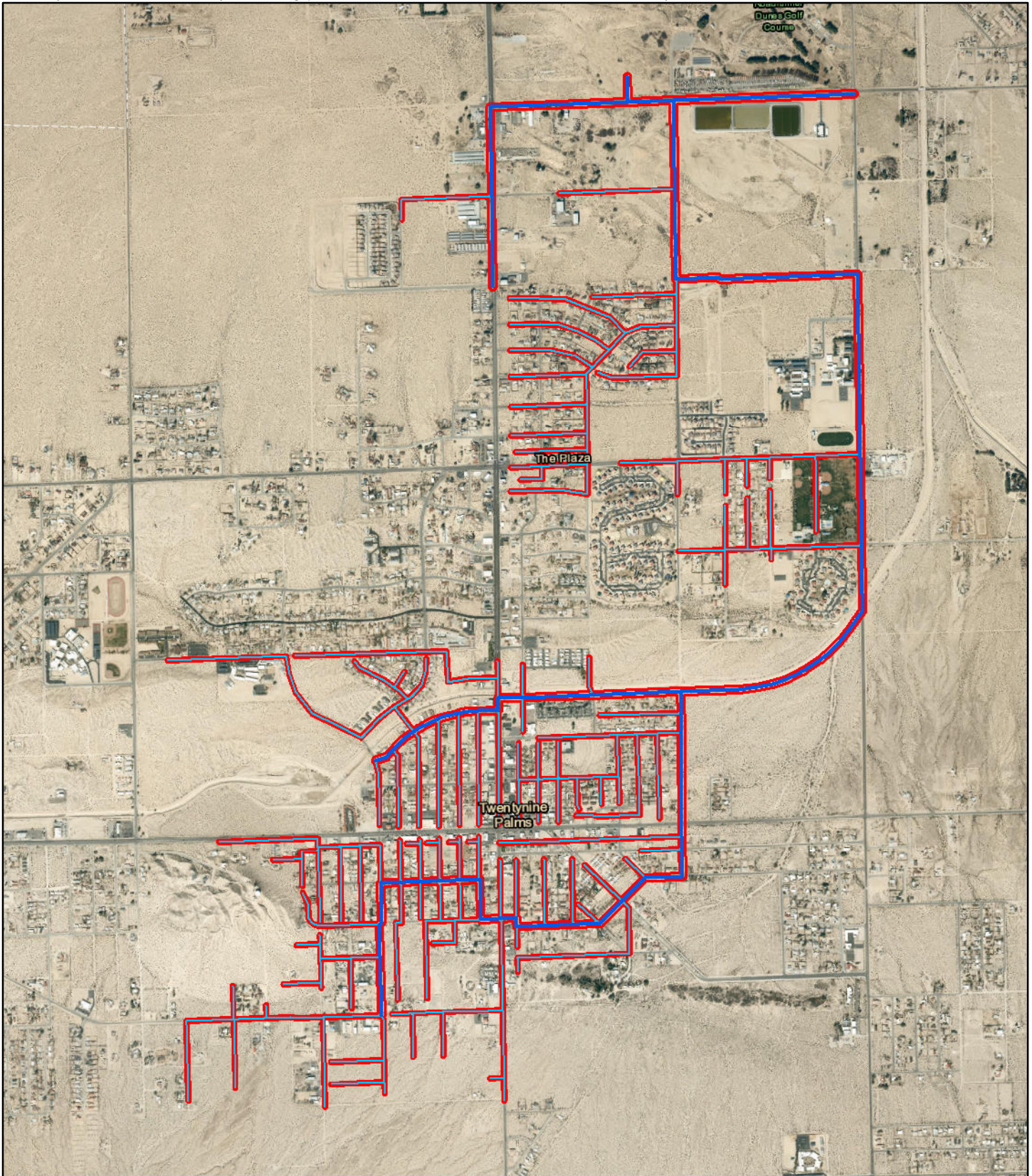
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 Project Area

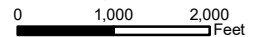
FIGURE 2
USGS 7.5" Topo Quads: 29 Palms & Queen Mountain
Twentynine Palms Wastewater
Collection System, Phases 1 and 2
Twentynine Palms, CA

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1 inch = 2,000 feet






-  Proposed Trunk Sewer
-  Proposed Collector Sewer
-  Project Area

FIGURE 3
Project Overview
Twenty-nine Palms Wastewater
Collection System, Phases 1 and 2
Twenty-nine Palms, CA

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2.0 BACKGROUND ON THE DESERT TORTOISE

The desert tortoise is a long-lived, terrestrial turtle, with a domed carapace (upper shell) and rounded, stumpy elephantine hind limbs. The front limbs are flattened and heavily scaled for digging and without webbed toes. The carapace is oblong with rounded sides due to the joining of the carapace to the plastron (lower shell). The scutes are often yellowish in the middle and have grooved, parallel, concentric growth rings that form outward with age toward the scute margins. The plastron is typically yellowish, becoming brown around the scute margins. The head is relatively small and rounded in front with reddish-tan coloring and the iris being greenish-yellow. The front and hind feet are about equal in size and the tail is of short length.

Desert tortoises in the Mojave and Colorado deserts west and north of the Colorado River were listed by the U.S. Fish and Wildlife Service (USFWS) as threatened on April 2, 1990 (USFWS 1990). They are also listed as threatened by the State of California. Proposed actions within the range of the Mojave desert tortoise fall under purview of the federal Endangered Species Act 1973, as amended (ESA), in addition to State regulations. These tortoises have since been named as a full species, still *G. agassizii*, no longer conspecific with tortoises south and east of the Colorado River that were reclassified as *G. morafkai* (Murphy et al. 2011). USFWS (2019). For purposes of the ESA, desert tortoise habitat is defined as 1) areas with presence of desert tortoises or desert tortoise sign, 2) dispersal areas (i.e., habitat corridors), or 3) areas suitable for desert tortoises as identified by the USFWS or in the most recent approved recovery plan for the Mojave population of the desert tortoise (USFWS 2011).

The desert tortoise is most common in desert scrub, desert wash, and Joshua tree habitats in a variety of terrain types, including alluvial fans, valleys, rocky hillsides, and washes. They require friable soil for burrow and nest construction. Burrows are typically found at the base of shrubs, in the interspaces between shrubs, and occasionally in caliche soil bank areas or underneath boulders/rocks. They are herbivores and feed on a variety of plants including annual herbs and perennial grasses.

Tortoise activity is greatest during the spring and early summer, and to a lesser extent during the fall; however, tortoises can be active at any time of the year during appropriate weather conditions. Although tortoises hibernate during the winter and typically emerge in late February or early March, hatchlings and juveniles can be fairly active during the winter months. Adults will also emerge from their burrows to drink if water resources have been limited during the previous activity season and/or winter precipitation has provided standing water. Their activity is usually much reduced during hot summer months, but they may be active following summer rains or if temperatures are moderate (Boarman 2003). They retreat into their horizontal burrow to avoid surface temperature extremes and to escape from predators. Desert tortoises are known to utilize an average of 7-12 burrows at any given time. Multiple tortoises are also known to occasionally share a single burrow (Bureau of Land Management "BLM" 2006).

Threats to desert tortoises include loss or degradation of habitat, vandalism, poaching, intentional killing, predation on young tortoises by the common raven (*Corvus corax*) and other predators (e.g. kit fox, snakes, etc.), and disease (e.g. Mycoplasmosis). Off-road vehicles, military training maneuvers, mining, and livestock grazing also affect tortoise habitat by collapsing burrows, eroding soils, reducing availability of food plants, eliminating shrubs which would provide shade for tortoises and support for their burrows, and ultimately results in surface disturbance that promotes conditions more conducive to invasion by exotic plant species, which provide less nutritional value to tortoises than the native species that were replaced. Human activities, including garbage dumping, landfills, roads, increased nesting opportunities, irrigation, and increased vehicle use have also led to increased numbers of common ravens in California deserts. Ultimately, the increased predation on young tortoises by common ravens reduces recruitment into breeding populations (Boarman 2003).

Tortoises are most often detected by scat, sign, and burrows/pallets. Tortoises themselves can sometimes be detected aboveground foraging or moving about or in burrows by shining a light within. Tortoise sign includes scat, tracks, eggshell fragments, courtship rings, drinking depressions, carcasses, or fragments thereof. Presence of sign is an indication that tortoises either occur, or have recently occurred, at a particular location that is likely to be part or all of a lifetime home range. Sign can be detected at any time of the year and always indicates suitable habitat, if not occupied habitat.

3.0 METHODS

3.1 Literature Review and Records Search

A literature review and record search were conducted to identify occurrences of desert tortoise, critical habitat for desert tortoise, or any designated desert tortoise management areas within the project footprint. The review included:

- A report from the California Department of Fish and Wildlife' (CDFW's) California Natural Diversity Data Base (CNDDDB) for a five-mile radius of the project site (CDFW 2022a),
- The USFWS (2022) Environmental Conservation Online System (ECOS) including critical habitat mapping and an Information for Planning and Consultation (IPaC) report.
- Aerial photographs, and
- Pertinent documents from the Wood library and project files (*e.g.*, other biological surveys from the general vicinity).

3.2 Focused Survey

Wood biologists conducted desert tortoise focused surveys daily from 5 April 2022 through 11 April 2022 (see Appendix A). The surveys followed guidance for linear projects in the protocol: *Preparing for Any Action that May Occur Within the Range of the Mojave Desert Tortoise* (USFWS 2019). The survey included the trunk lines and the 50-foot action area on either side of them plus the collector lines and a 25-foot action area on either side of them. Except where fully developed, all relatively natural lands in the project footprint, including bare ground next to such lands was surveyed.

4.0 RESULTS

4.1 Focused Survey

As reported in the biological resources assessment for the project (Wood 2022), much of the alignment is surrounded by the homes, businesses, and public facilities that will be served by the proposed system. The remaining habitat is a patchwork of varying sizes of undeveloped vacant lots and lands. Most undeveloped lands are not pristine, but instead show signs of anthropogenic disturbance, such as mechanical disturbance of soil, vegetation removal, off road vehicle tracks, and trash dumping. Nevertheless, the undeveloped lands provide potential habitat and corridors for desert tortoise between developed/disturbed areas.

No specific soil mapping was available for most of the project site (United States Department of Agriculture, Natural Resources Conservation Service 2019.). The only mapped soil is near the southeast site corner: "Pintobasin gravelly sand, 1 to 3 percent slopes." In general, most observed soils appeared consistent with gravelly sands, but some soils in the northeast project area included apparent alkali sinks, fine sands, and even dunes.








Where not developed, the primary vegetation community present throughout the project area is Creosote Bush Scrub dominated by creosote bush (*Larrea tridentata*) with various co-dominants including white bur-sage (*Ambrosia dumosa*), white rhatany (*Krameria bicolor*), allscale saltbush (*Atriplex polycarpa*) and cheesebush (*Ambrosia salsola*). In the northern project area there are stand of Saltbush Scrub dominated by allscale saltbush (*Atriplex polycarpa*) and/or four-wing saltbush (*Atriplex canescens*) and Desert Sink Scrub dominated by bush seepweed (*Suaeda nigra*). A major flood control channel which originates from Fortynine Palms Canyon to the southwest is present onsite, as well as other unnamed drainages. These are mapped as Desert Wash Systems and where plants have not been removed by flood control agencies, they are vegetated with species such as smoke tree (*Psoralea argyrea*) and catclaw (*Senecalia greggii*). Vegetation communities in the project footprint are mapped on Figure 4) and are based on those in USGS (2004). A full list of plant and vertebrate wildlife species detected onsite is included in Wood (2022).

4.2 Literature Review

The closest desert tortoise records within the CNDDDB (CDFW 2022) are within a polygon present immediately west of the project area. Tortoise densities within that polygon were estimated at 20 - 50 per square mile in 1990-1991.

The proposed project site is within the Western Mojave Recovery Unit (USFWS 2011). It is not within designated critical habitat for the desert tortoise (see Figure 5).



-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Desert Sink Scrub
-  Desert Wash System
-  Developed/Disturbed
-  Saltbush Scrub

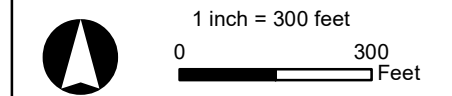
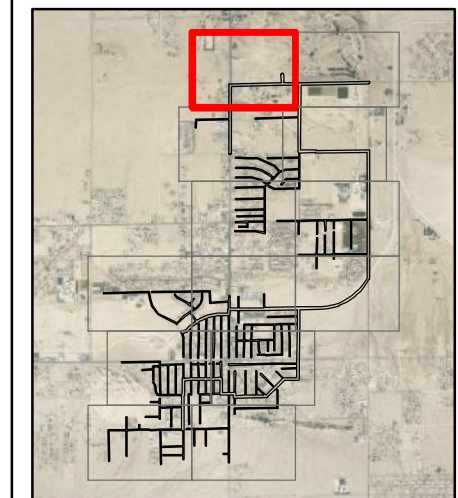









FIGURE 4a
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA





-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Desert Sink Scrub
-  Desert Wash System
-  Developed/Disturbed
-  Saltbush Scrub

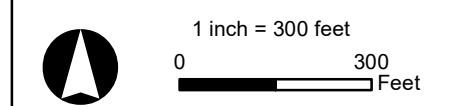
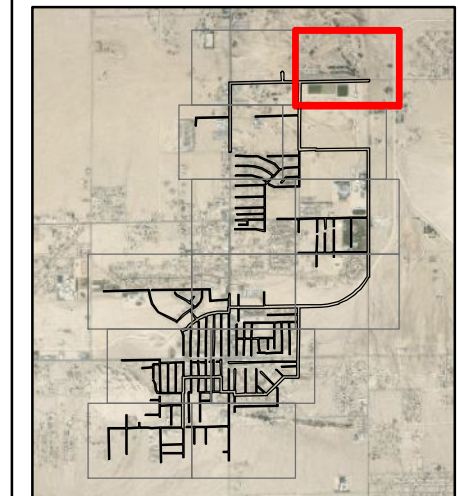









FIGURE 4b
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA





-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Desert Sink Scrub
-  Desert Wash System
-  Developed/Disturbed
-  Saltbush Scrub

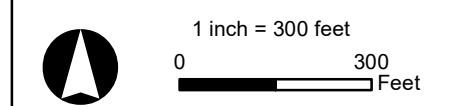
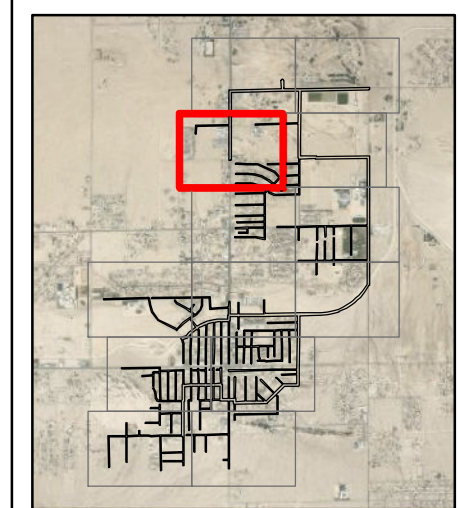
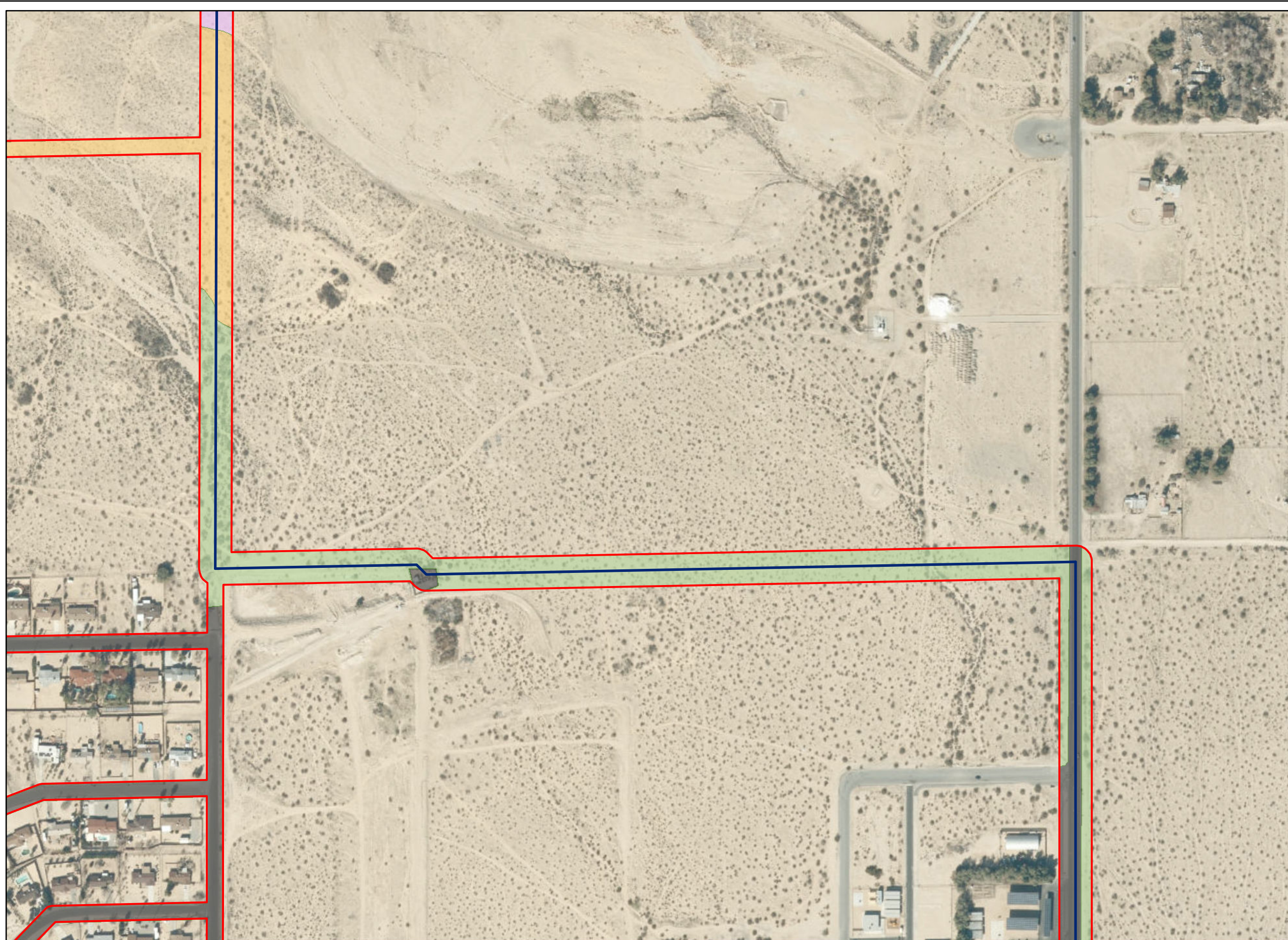









FIGURE 4c
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



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 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Desert Sink Scrub
-  Desert Wash System
-  Developed/Disturbed
-  Saltbush Scrub

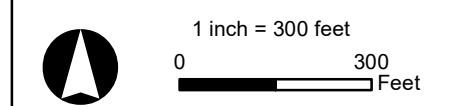
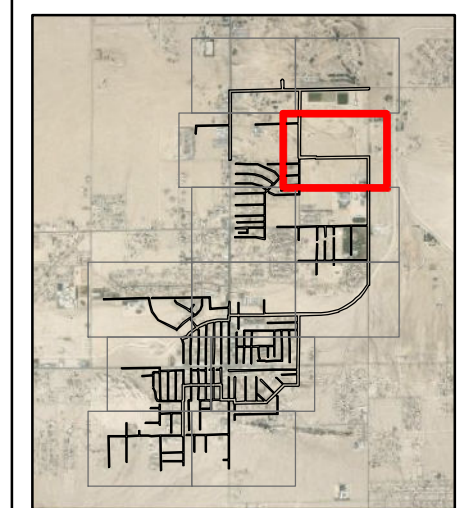









FIGURE 4d
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



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 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Desert Sink Scrub
-  Desert Wash System
-  Developed/Disturbed
-  Saltbush Scrub

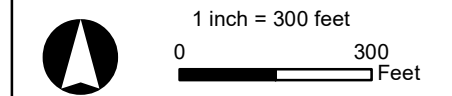
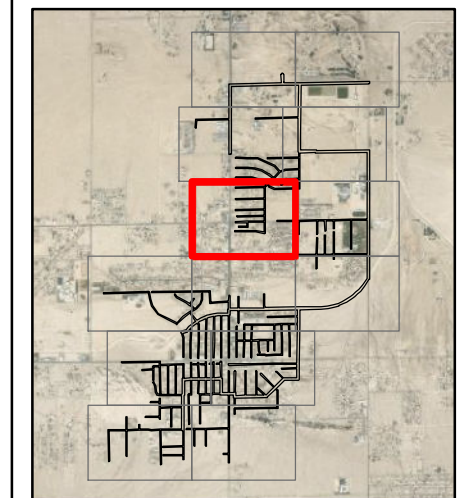
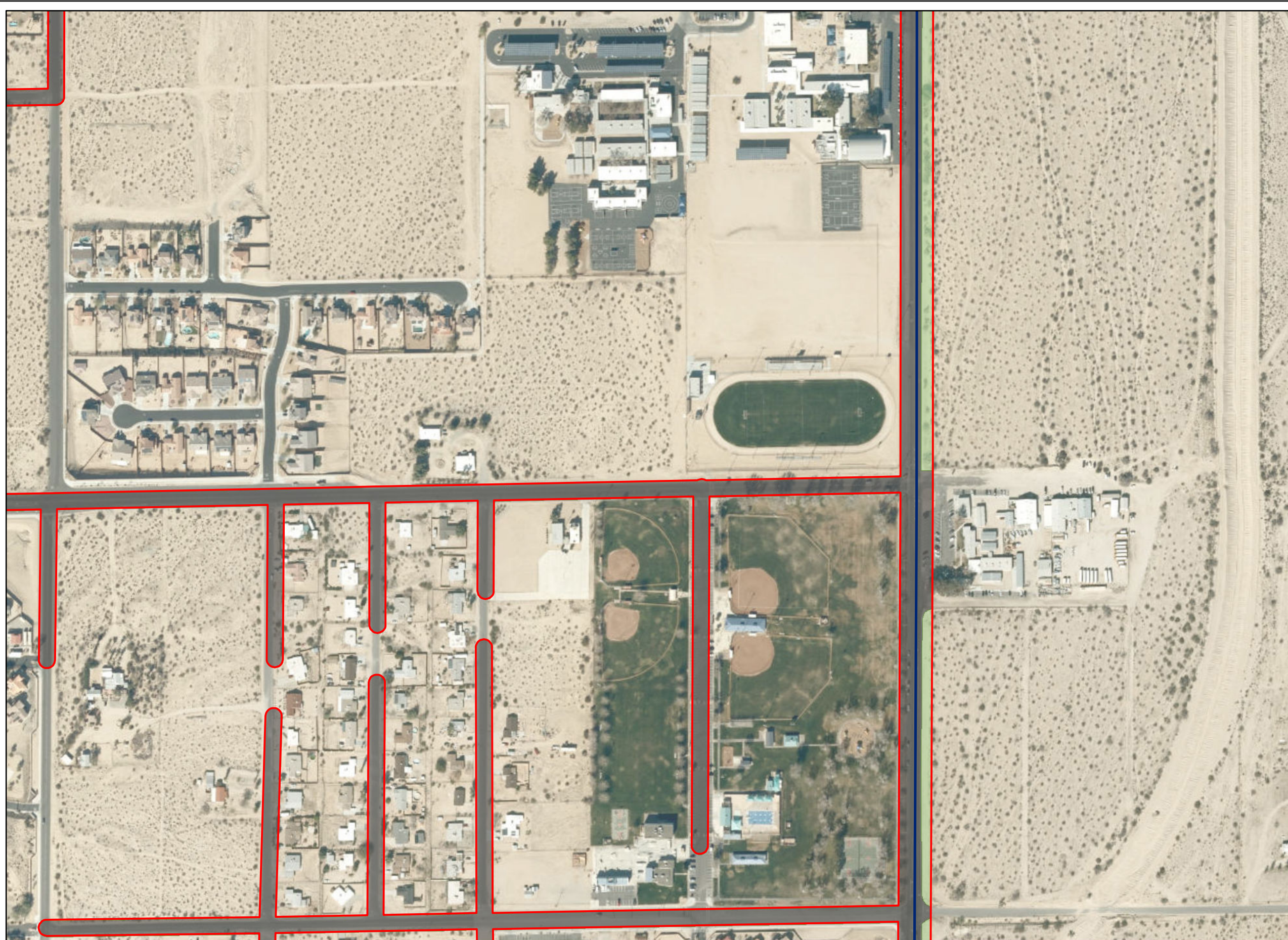









FIGURE 4e
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



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-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Desert Sink Scrub
-  Desert Wash System
-  Developed/Disturbed
-  Saltbush Scrub

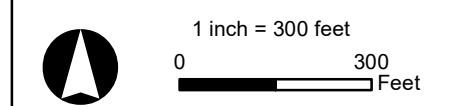
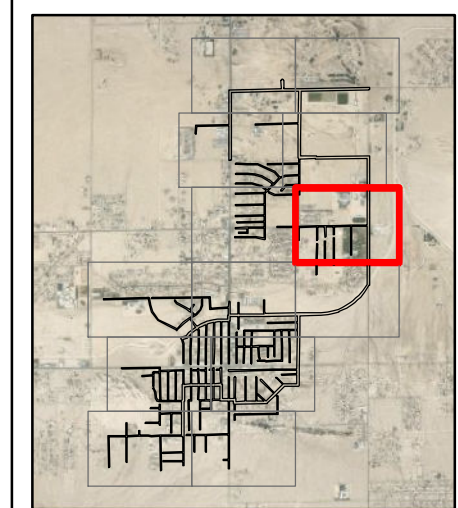









FIGURE 4f
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA





-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Desert Sink Scrub
-  Desert Wash System
-  Developed/Disturbed
-  Saltbush Scrub

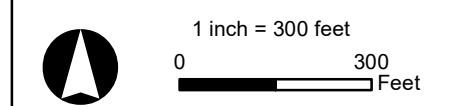
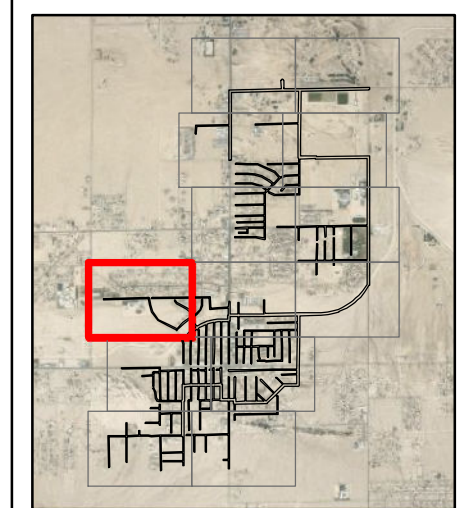
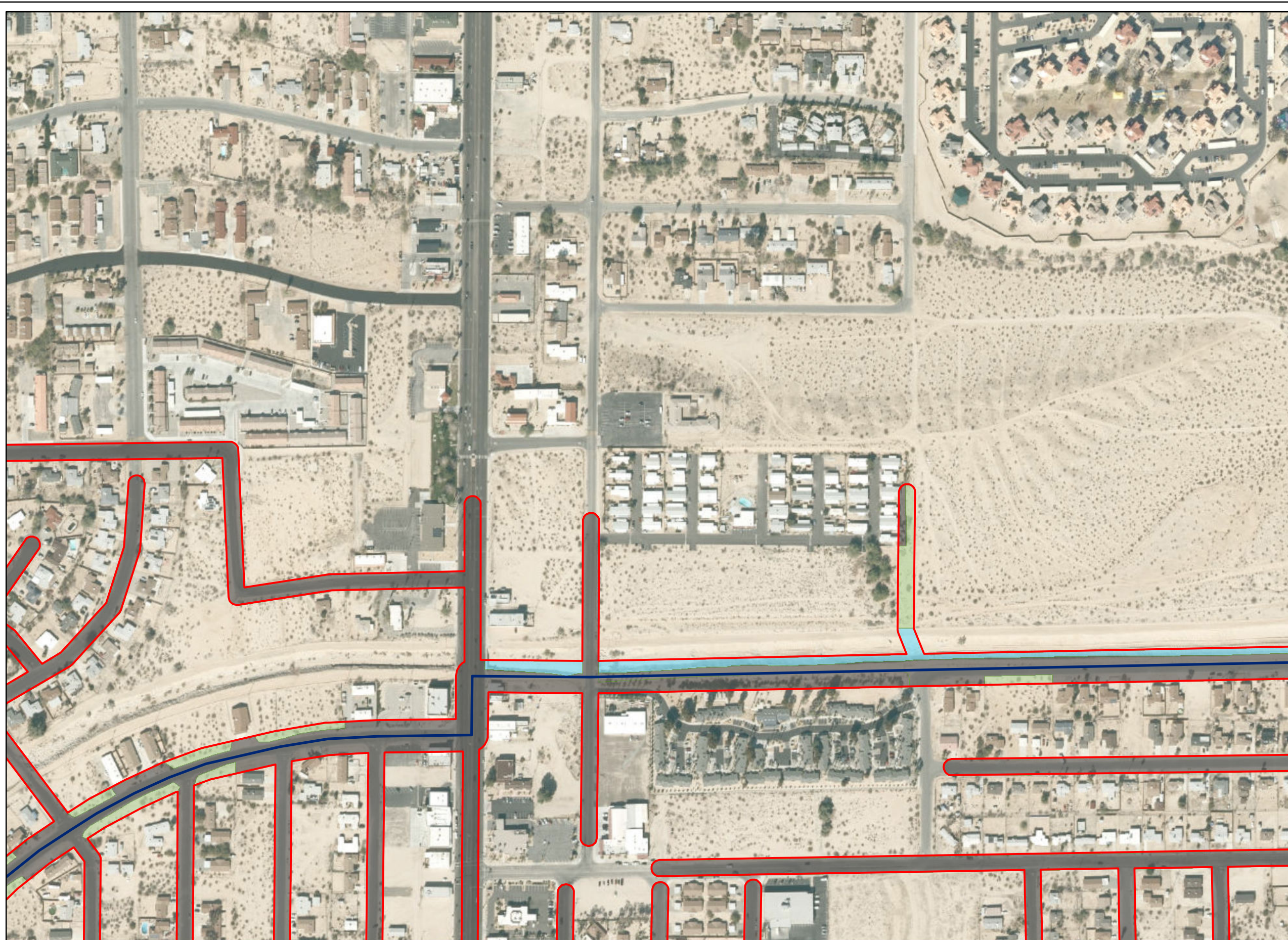









FIGURE 4g
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



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 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Desert Sink Scrub
-  Desert Wash System
-  Developed/Disturbed
-  Saltbush Scrub

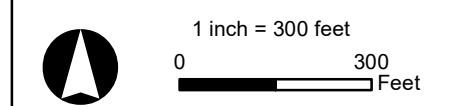
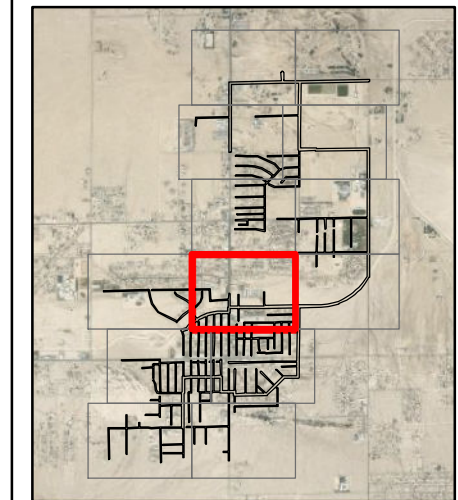
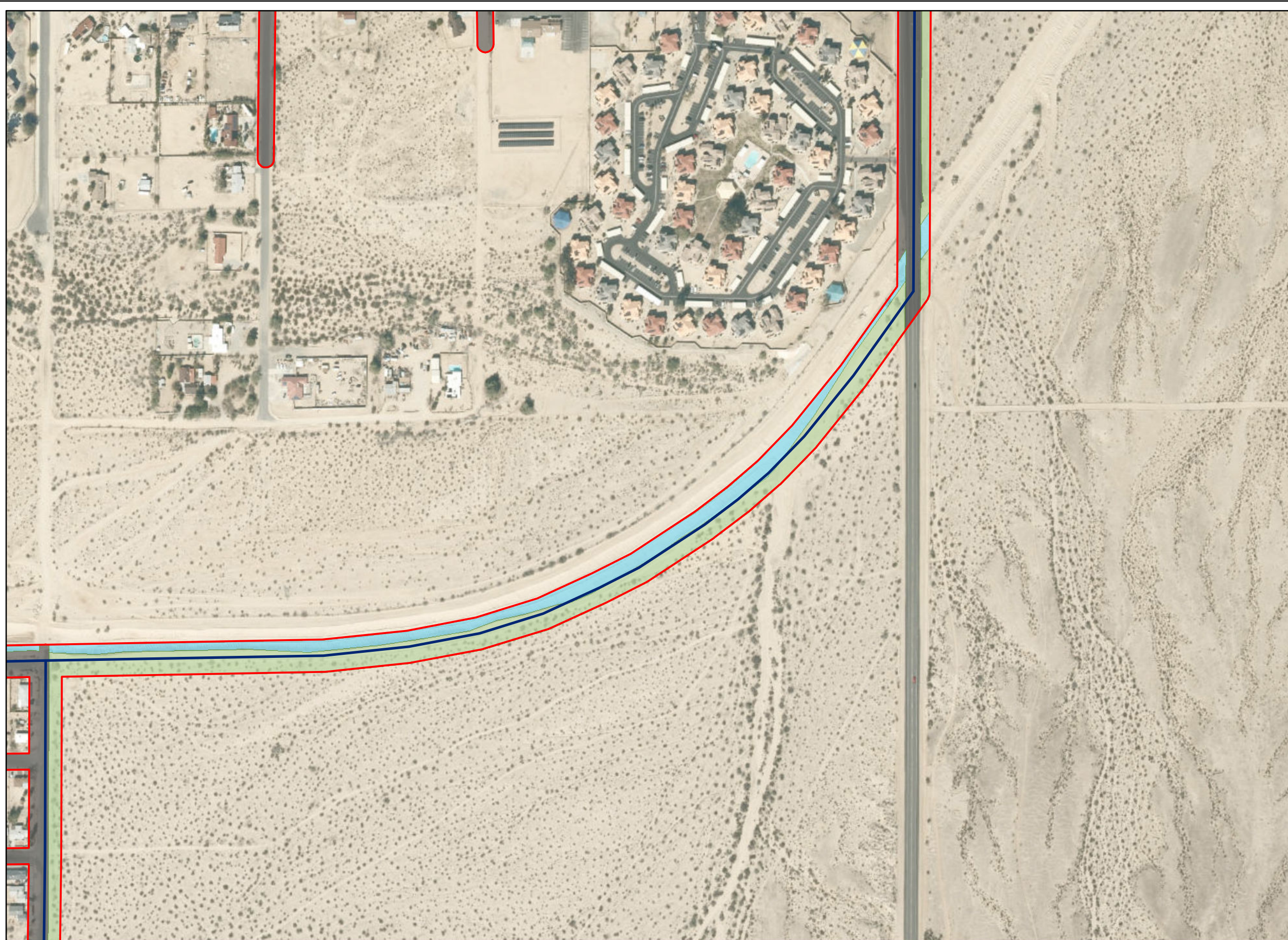









FIGURE 4h
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA





-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Desert Sink Scrub
-  Desert Wash System
-  Developed/Disturbed
-  Saltbush Scrub

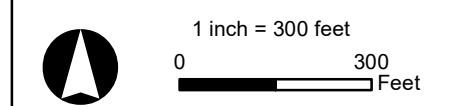
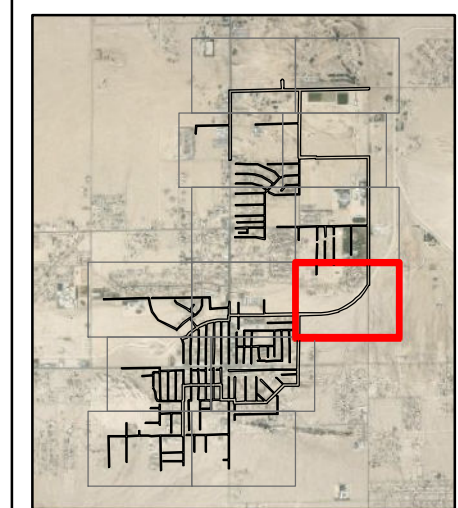
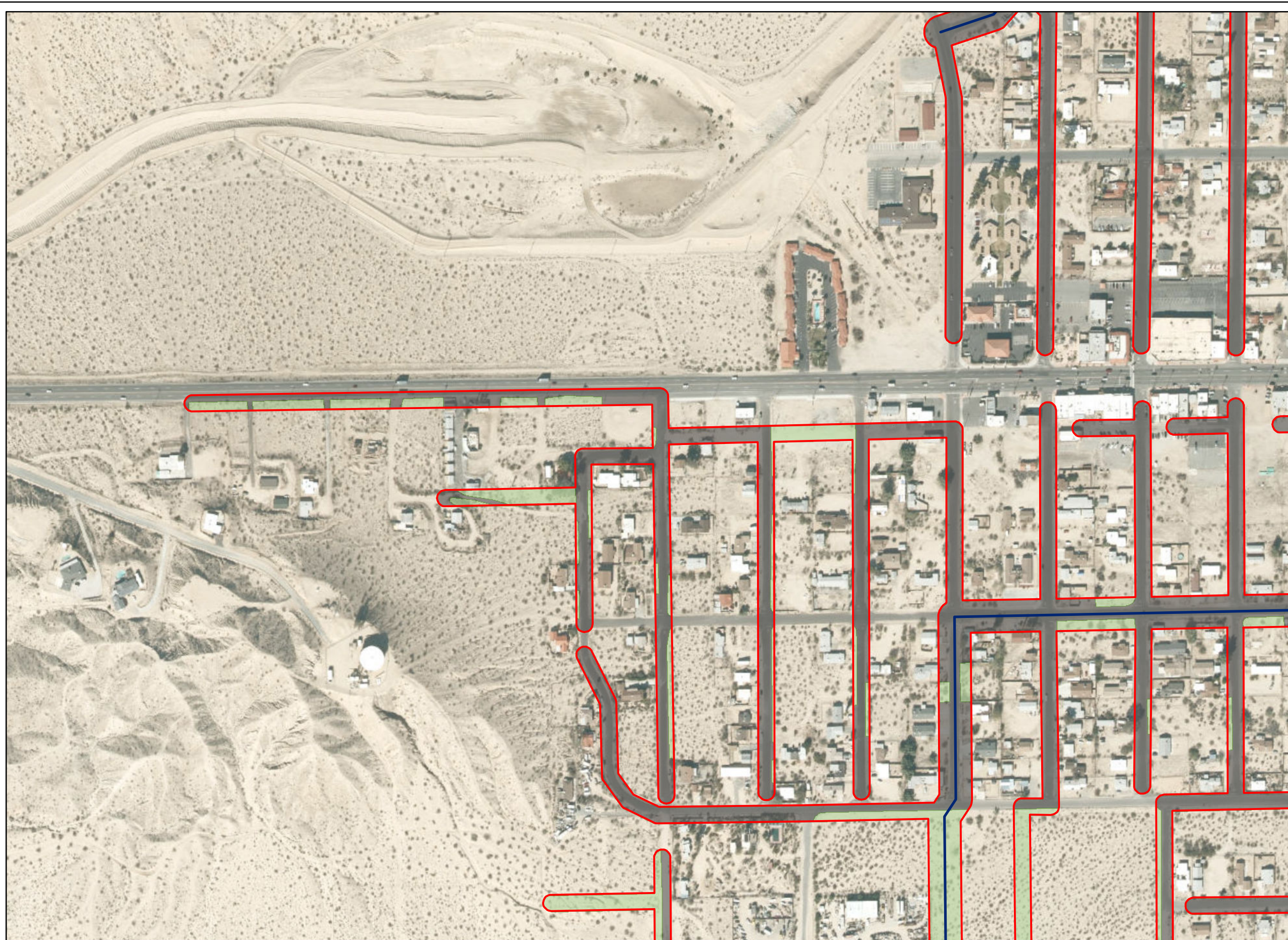









FIGURE 4i
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



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 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Desert Sink Scrub
-  Desert Wash System
-  Developed/Disturbed
-  Saltbush Scrub

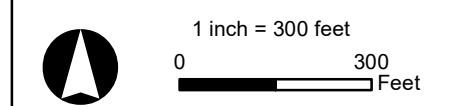
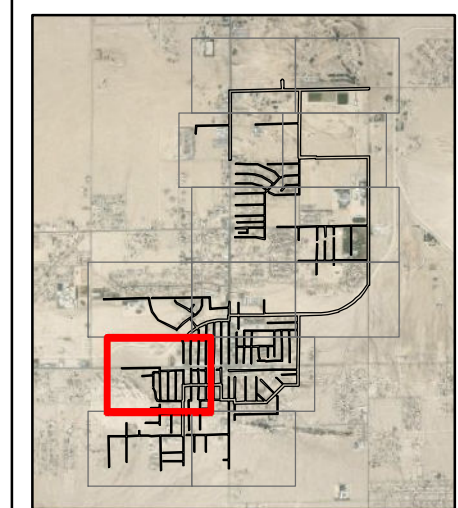
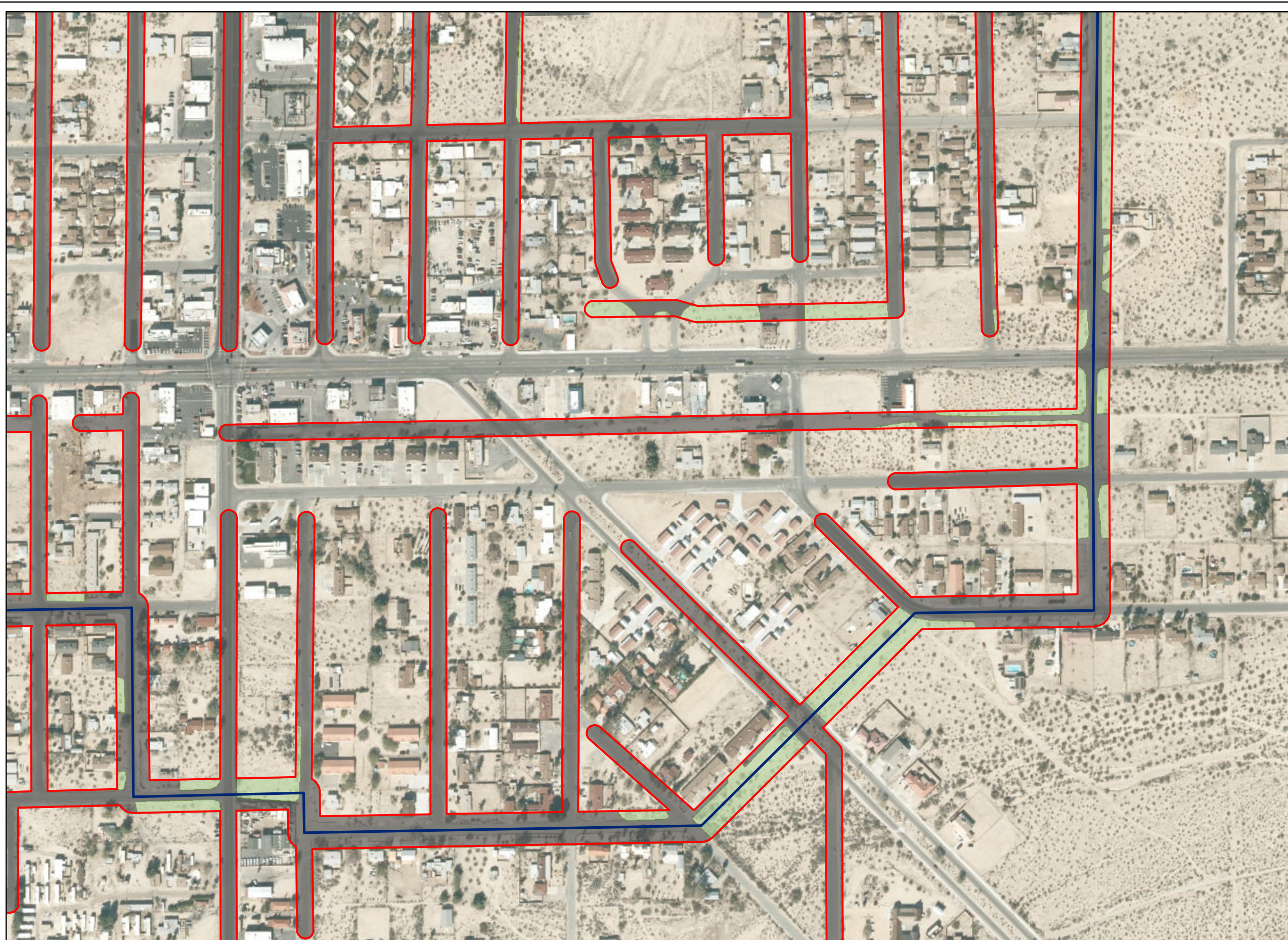


FIGURE 4j
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



- Proposed Trunk Sewer - Phase 1
- Survey Area
- Vegetation Communities**
- Creosote Bush Scrub
- Desert Sink Scrub
- Desert Wash System
- Developed/Disturbed
- Saltbush Scrub

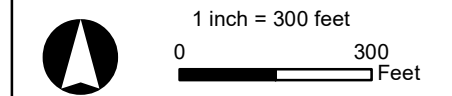
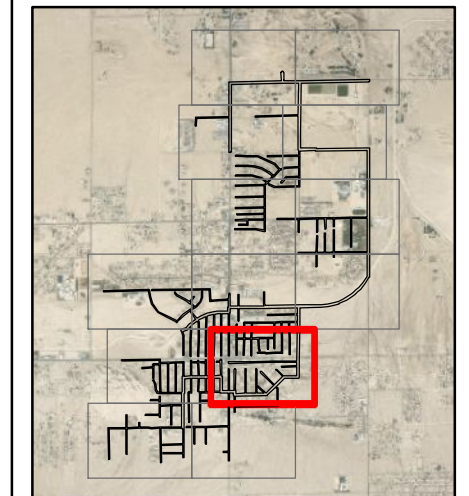
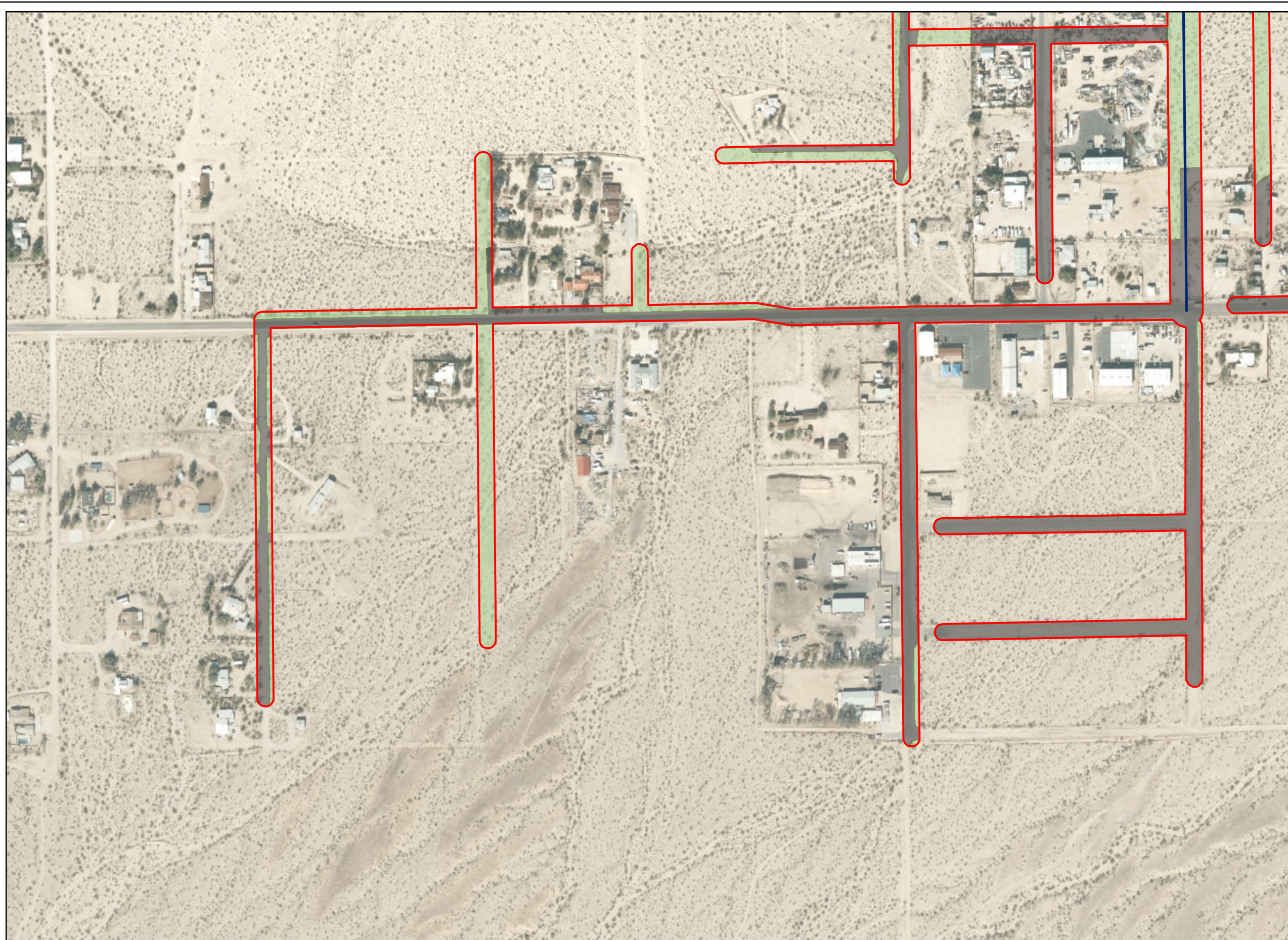


FIGURE 4k
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



- Proposed Trunk Sewer - Phase 1
- Survey Area
- Vegetation Communities**
- Creosote Bush Scrub
- Desert Sink Scrub
- Desert Wash System
- Developed/Disturbed
- Saltbush Scrub

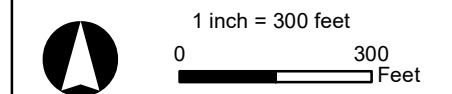
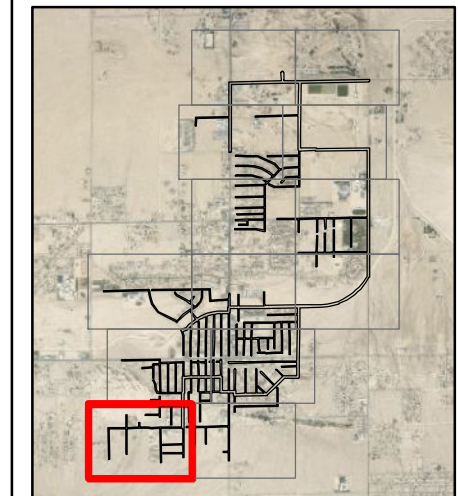
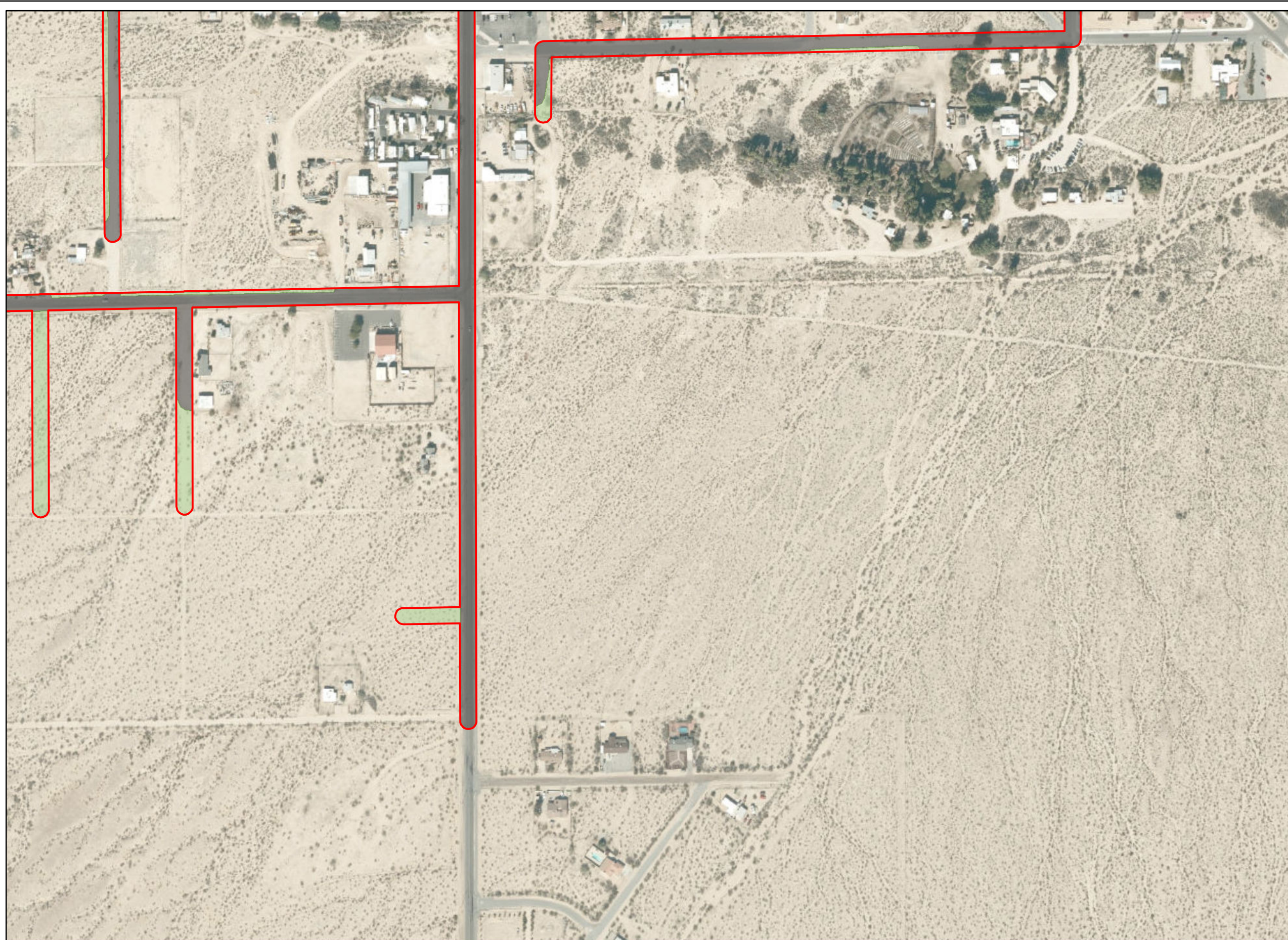


FIGURE 4I
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



- Proposed Trunk Sewer - Phase 1
- Survey Area
- Vegetation Communities**
- Creosote Bush Scrub
- Desert Sink Scrub
- Desert Wash System
- Developed/Disturbed
- Saltbush Scrub

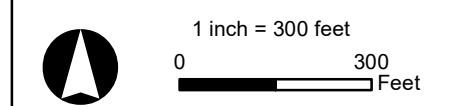
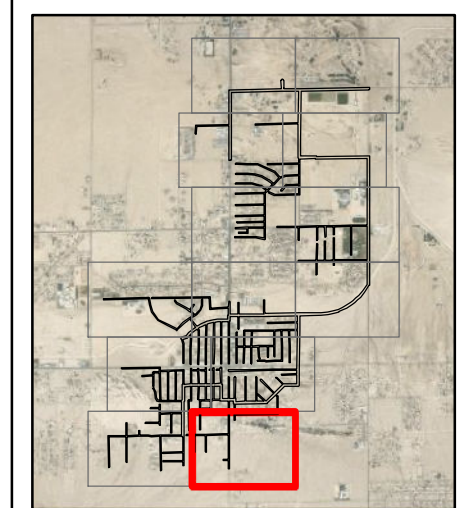
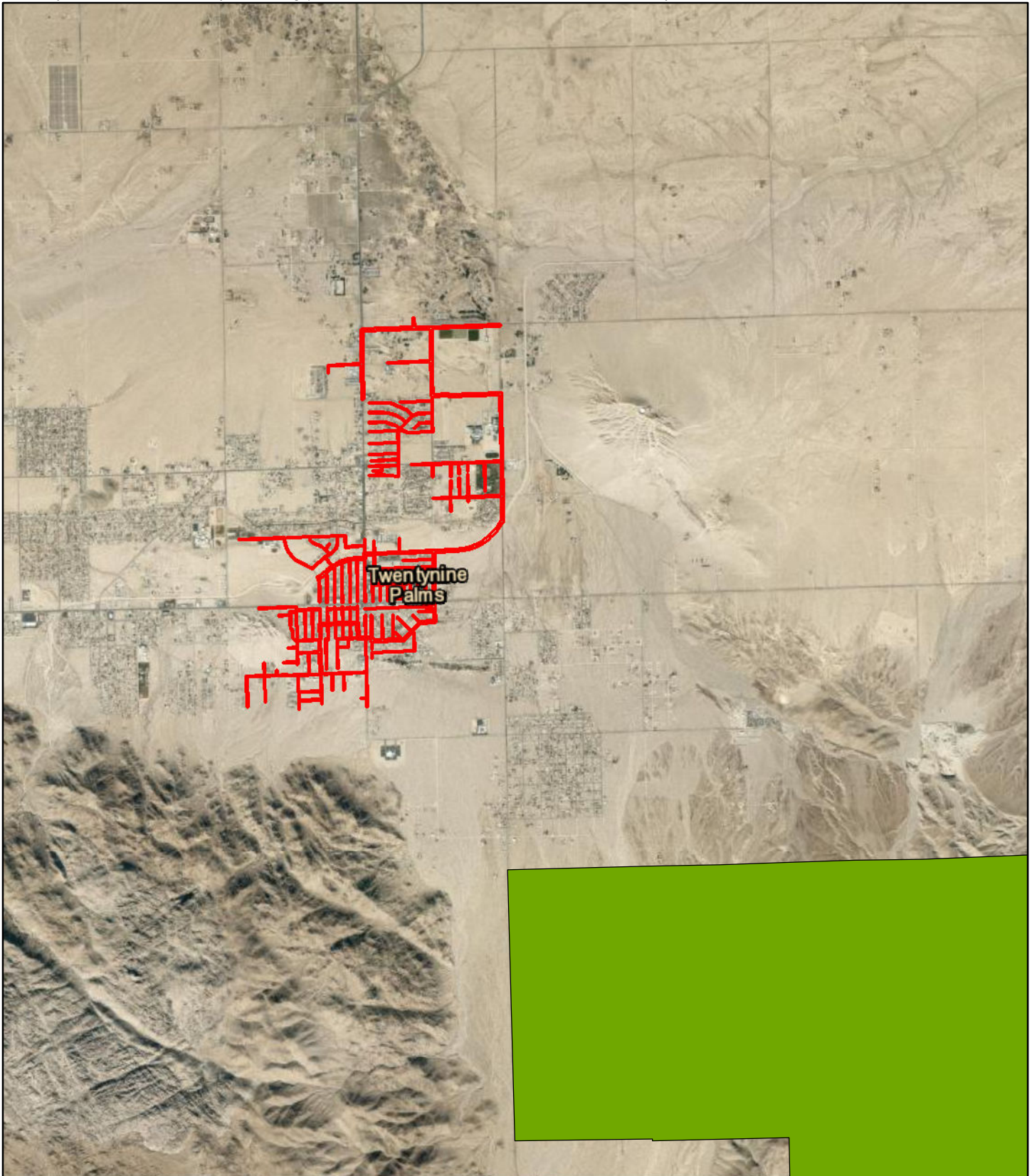


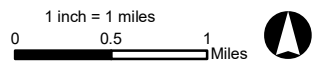
FIGURE 4m
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



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-  Project Area
-  Desert Tortoise Critical Habitat

FIGURE 5
Desert Tortoise Critical Habitat
Twentynine Palms Wastewater
Collection System, Phases 1 & 2
Twentynine Palms, CA

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5.0 DISCUSSION

Although there is no desert tortoise critical habitat designated on the project site, it is present approximately 1.5 miles to the southeast. Further, the vegetation communities occurring on the project site (*e.g.* Creosote Bush Scrub, Saltbush Scrub) are habitats typically utilized by desert tortoises, and the CNDDDB reported populations immediately to the west in 1990-1991. During the focused survey, Wood biologists were provided an anecdotal report by a local resident who stated that they had observed a mating pair of desert tortoises in the southern project area last year.

Despite all that, the focused survey detected no desert tortoises or desert tortoise sign within the project footprint and action area. Further, although desert tortoise was not the primary target, focused surveys for the burrowing owl were conducted in a 150-meter buffer around the project footprint and action area. No desert tortoises or desert tortoise sign were detected within that buffer either.

Despite the absence of desert tortoise and sign, the project area is surrounded by potential habitat with past occupied habitat and designated critical habitat nearby. For these reasons desert tortoises may enter the project area in the future. The following mitigation and minimization measures are recommended to ensure that any potential impacts to the desert tortoise are avoided:

- 1) A worker's environmental awareness program (WEAP) would be implemented to educate the construction crew of potential special status species present on the project site.
- 2) Construction and maintenance personnel would be required to inspect for desert tortoises under vehicles prior to moving the vehicle. If a desert tortoise is found beneath a vehicle, it would not be moved until the desert tortoise had left of its own accord. All desert tortoise observations would be reported to a qualified biologist and the wildlife agencies.
- 3) A qualified biologist should monitor construction when it is occurring adjacent to undeveloped lands to ensure that tortoises do not enter the work area and that they are not disturbed if present.
- 4) Any open trenches adjacent to habitat should be monitored by a qualified biologist daily. If left open overnight or at any time when not monitored, they should be fenced and/or covered to prevent entry by desert tortoises. Exit ramps should be present within open trenches.

Desert tortoises cannot be taken (harmed, harassed) under state and federal law. This report and any recommended mitigation measures do not constitute authorization for incidental take of the desert tortoise.

6.0 REFERENCES

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Wastewater Collection System, Phases 1 & 2
Desert Tortoise Focused Survey
May 2022

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Wastewater Collection System, Phases 1 & 2
Desert Tortoise Focused Survey
May 2022

Appendix A Survey Forms

Date of survey: 5 4 22 Survey biologist(s): Tim Humley
(day, month, year) (name, email, and phone number)
 Site description: Elm Dr, Sullivan Dr., Bullion Ave., Spit Rock Ave, Boling Dr., Hastings Dr.
(project name and size, general location)
 County: SB Quad: 29 Palms Location: Twenty nine Palms
(UTM coordinates, lat-long, and/or TRS; map datum)
 Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: 142 Transect length: 251.5
 GPS Start-point: 34.128048, -116.069727 Start time: 11:00 am/pm
(easting, northing, elevation in meters)
 GPS End-point: 34.125113, -116.060079 End time: 13:58 am/pm
(easting, northing, elevation in meters)
 Start Temp: 82° °C F End Temp: 89° °C F

Live Tortoises

Detection number	GPS location Easting Northing		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting Northing		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

Date of survey: 5 4 22 Survey biologist(s): Jim Chumley
(day, month, year) (name, email, and phone number)

Site description: Sullivan Rd., Yucca Ave, Adobe Rd
(project name and size, general location)

County: SB Quad: 29 Palms Location: Twenty nine Palms
(UTM coordinates, lat-long, and/or TRS, map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: _____ Transect length: 1.0

GPS Start-point: 34.129215, -116.059746 Start time: 1405 am/pm
(easting, northing, elevation in meters)

GPS End-point: 34.124746, -116.054485 End time: 16:15 am/pm
(easting, northing, elevation in meters)

Start Temp: 89° °F End Temp: 91 °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

TWC 4/5/22

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

TWC 4/5/22

Date of survey: 6 4 22 Survey biologist(s): Tim Cheney, Lauryn Duato
(day, month, year) (name, email, and phone number)

Site description: Old Dale Rd, Pactus Ave, Cholla Ave, Smoke Tree Ave, Yucca Ave, Tamarisk Ave
(project name and size; general location)

County: SB Quad: 29 palms Location: Twenty nine Palms
(UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: 1/2 Transect length: 1.1

GPS Start-point: 34.135145 -116.051264 Start time: 12:10 am/pm
(easting, northing, elevation in meters)

GPS End-point: 34.133469 -116.045491 End time: 16:50 am/pm
(easting, northing, elevation in meters)

Start Temp: 81° °C F End Temp: 86 °C

②
 Desert Quercus
 Split Rock
 Pine
 Bullion
 Hillside

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

Date of survey: 7 4 22 Survey biologist(s): Lauryn Duto
(day, month, year) (name, email, and phone number)
 Site description: Cottonwood Dr, Inn Dr, Nat'l Park Dr, Old Dale Rd, Mesquite Ave, Palo Verde Ave
(project name and size, general location)
 County: SB Quad: 29 Palms Location: Twenty Palms
(UTM coordinates, lat-long, and/or TRS; map datum)
 Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: 1 Transect length: 450
 GPS Start-point: 34.131992 - 116.054424 Start time: 7:30 am
(easting, northing, elevation in meters)
 GPS End-point: 34.130217 - 116.064512 End time: 11:00 am
(easting, northing, elevation in meters)
 Start Temp: 66 °C End Temp: 81 °C

30
 octo 11, 10 Dr.
 Adobe R

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

Date of survey: 7 4 22 Survey biologist(s): Tim CUMLEY, Lauryn Duoto
(day, month, year) (name, email, and phone number)

Site description: Holly Ave, Piñon Dr, Desert Knoll Ave, Cactus Dr, alley
(project name and size, general location)

County: SB Quad: 29 Palms Location: Twenty nine Palms
(UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: 1 & 2 Transect length: 1.0

GPS Start-point: 34.131846 -116.049635 Start time: 11:00 am/pm
(easting, northing, elevation in meters)

GPS End-point: 34.135100 -116.045598 End time: 12:15 am/pm
(easting, northing, elevation in meters)

Start Temp: 79° °C/F End Temp: 80° °C/F

3b

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

TWC 4/7/22

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

TWC 4/7/22

Date of survey: 7 4 22 Survey biologist(s): Tim Chumley, Lauryn Donto sc
(day, month, year) (name, email, and phone number)
 Site description: Buena Vista Dr, Split Rock Ave, Desert Queen Ave, Tamarisk Ave, Yucca Ave, Smoke Tree Ave
(project name and size; general location)
 County: SB Quad: 29 Palms Location: Twenty-nine Palms
(UTM coordinates, lat-long, and/or TRS: map datum)
 Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: 1+2 Transect length: 2.0 mi
 GPS Start-point: 34.140424 -116.054544 Start time: 13:00 am/pm
(easting, northing, elevation in meters)
 GPS End-point: 34.135796 -116.13576 End time: 14:45 am/pm
(easting, northing, elevation in meters)
 Start Temp: 85° °F End Temp: 88° °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4			TWC	4/7/22		
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

3d

Date of survey: 7 4 22 Survey biologist(s): Tim CHUMLET
(day, month, year) (name, email, and phone number)
 Site description: Civic Center Dr, El Paseo Drive, Split Rock Ave, Bagley Ave, Yucca Ave, Sun Court
(project name and size, general location)
 County: SB Quad: 29 Palms Location: Twenty-nine Palms
(UTM coordinates, lat-long, and/or TRS; map datum)
 Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: 1-2 Transect length: 1.9
 GPS Start-point: 34.141734 -116.054367 Start time: 15:00 am/pm
(easting, northing, elevation in meters)
 GPS End-point: 34.142702 -116.070243 End time: 17:30 am/pm
(easting, northing, elevation in meters)
 Start Temp: 87° °F End Temp: 88° °F

Live Tortoises

Detection number	GPS location Easting Northing		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Handwritten notes: TWC 4/7/22

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting Northing		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

Handwritten notes: TWC 4/7/22

BTJR, COYOTE, ASPIDU. TIG, CORA, UTA STANS, COHU, CRY. CEZASITES SAPY
 GRRO, SAVS, DIPODOMYS SP., TWU, CHIONACTIS OCCIPITALIS (T), R.T. GROUND SQUAME
 WESP, HOSP, HOFI

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 8 APR 22 Survey biologist(s): M. WILCOX, N. MOORHATCH, T. CHUMLEY, L. DUOTO

Site description: TERRA NOVA 29 PALMS SEWER

County: SB Quad: 29 Palms Location: Utah Trail to Desert Knoll, N to Aubrey Rd, E to Utah Tr

Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: 1-4 Transect length: _____

GPS Start-point: 34.15764804, -116.03673600 Start time: 0750 am/pm

GPS End-point: 34.16480656, -116.03671663 End time: 0945 am/pm

Start Temp: 63 °F End Temp: 87 °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL >160-mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

VERP, COHA, GTGR, COFU, TUVU, NEOTOMA SP, BGGN, COLEONYX VAR., VERD, WREKI, MOPU

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 8 APR 22 Survey biologist(s): M WILCOX, N MASONHATCHER, T CHUMLEY, L. DUOTO
(day, month, year) (name, email, and phone number)

Site description: TERRA NOVA 29 PALMS SEWER
(project name and size; general location)

County: _____ Quad: _____ Location: Utah Tr to Desert Knoll (WD canal)
(UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect # 5-8 Transect length: _____

GPS Start-point: 34.14661573, -116.03644925 Start time: 10:46 am/pm
(easting, northing, elevation in meters)

GPS End-point: 34.14085200, -116.04541965 End time: 11:14 am/pm
(easting, northing, elevation in meters)

Start Temp: 85 F End Temp: 86 F

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL >160-mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

CACW, ANHU, DIPLOSAURUS DON., RTGS, COHU, ROPC, ANMMO LEO,
PHAI, LBWO, CAGS

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 8 APR 22 Survey biologist(s): M. WILCOX, N. MOORHEAD
(day, month, year) (name, email, and phone number)

Site description: TERRA NOVA 29 PALMS SEWER
(project name and size; general location)

County: _____ Quad: _____ Location: Desert Kull (62 to Buena Vista)
(UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: 9-10 transect length: _____

GPS Start-point: 34.14083708° -116.04532870° Start time: 1300 am/pm
(easting, northing, elevation in meters)

GPS End-point: 34.13719322° -116.04536919° End time: 1336 am/pm
(easting, northing, elevation in meters)

Start Temp: 91 °F End Temp: 91 °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL >160-mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

Date of survey: 8 4 22 Survey biologist(s): Tim CUMLEY Lauryn Duoto
(day, month, year) (name, email, and phone number)

Site description: Amboy Rd
(project name and size, general location)

County: SB Quad: 29 Palms Location: Twenty Palms
(UTM coordinates, lat-long, and/or TRS, map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: 142 Transect length: 0.25 mi

GPS Start-point: 34.150173 -116.054237 Start time: 1300 am/pm
(easting, northing, elevation in meters)

GPS End-point: 34.150212 -116.049761 End time: 14:00 am/pm
(easting, northing, elevation in meters)

Start Temp: 91 °C/F End Temp: 91 °C/F

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

TWC 4/8/22

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

TWC 4/8/22

Date of survey: 9 4 22 Survey biologist(s): Tim Chumley Melanie Buckovac
(day, month, year) (name/ email, and phone number)
 Site description: "Buena Vista Dr." (ditch), Casita Dr., Gorgonio Dr., Joshua Dr., Palm View Ave, Athol Ave,
(project name and size, general location) Cienega Dr
 County: _____ Quad: _____ Location: _____
(UTM coordinates, lat-long, and/or TRS, map datum)
 Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: _____ Transect length: _____
(eastings, northing, elevation in meters) (eastings, northing, elevation in meters) Start time: 0744 am/pm
 GPS Start-point: 34,139,316, -116,045,706 End time: 1050 am/pm
(eastings, northing, elevation in meters) (eastings, northing, elevation in meters)
 GPS End-point: _____
 Start Temp: 71° °F End Temp: 88° °F

Athol Ave,
Cienega Dr
E & W Ct,
Mesquite Av
Palo Verde Av,
Ocotillo Ave

Live Tortoises

Detection number	GPS location		Time	Tortoise location	Approx MCL	Existing tag #
	Easting	Northing		<small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	<small>≥180 mm?</small>	<small>and color, if present</small>
					<small>(Yes, No or Unknown)</small>	
1						
2						
3						
4						
5						
6						
7						
8						

TWC 4/9/22

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign	Description and comments
	Easting	Northing	<small>(burrows, scats, carcass, etc)</small>	
1				
2				
3				
4				
5				
6				
7				
8				

TWC 4/9/22

Date of survey: 9 4 22 Survey biologist(s): Tim CHUMLET Melanie Buckovac
(day, month, year) (name, email, and phone number)
 Site description: Two Mile Road, Wainwright Ave, Halsey Ave, Desert Knoll, Marine Ave, Joe Davis Rd
(project name and size; general location)
 County: SB Quad: 29 Palms Location: Twenty-nine Palms
(UTM coordinates, lat-long, and/or TRS; map datum)
 Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: 1#2 Transect length: 1.5 mi
 GPS Start-point: 34.150483 -116.036705 Start time: 11:00 am/pm
(easting, northing, elevation in meters)
 GPS End-point: 34.146673 -116.045525 End time: 12:35 am/pm
(easting, northing, elevation in meters)
 Start Temp: 88° °F End Temp: 93 °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

TWC 9/4/22

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

TWC 9/4/22

Date of survey: 10 4 22 Survey biologist(s): Tim CHUMLEY EMILY URQUIDI
(day, month, year) (name, email, and phone number)
 Site description: 29 Palm Hwy (Hwy 62)
(project name and size; general location)
 County: SB Quad: 29 Palms Location: Twentynine Palms
(UTM coordinates, lat-long, and/or TRS; map datum)
 Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: 1 #2 Transect length: 0.3 mi
 GPS Start-point: 34.135376 -116.063409 Start time: 07:19 am/pm
(easting, northing, elevation in meters)
 GPS End-point: 34.135376 -116.068088 End time: 8:00 am/pm
(easting, northing, elevation in meters)
 Start Temp: 62° °F End Temp: 65 °C °F

Live Tortoises

Detection number	GPS location Easting Northing		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

TWC 4/10/22

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting Northing		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

TWC 4/10/22

Date of survey: 10 4 22 Survey biologist(s): Tim CHUMLEY EMILY URQUIDI
(day, month, year) (name, email, and phone number)
 Site description: Two Mile Rd (Desert Knoll to Aztec)
(project name and size, general location)
 County: SB Quad: 29 Palms Location: Twenty-nine Palms
(UTM coordinates, lat-long, and/or TRS, map datum)
 Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: 142 Transect length: 0.2 mi
 GPS Start-point: 34.150381 -116.045539 Start time: 8:20 am/pm
(easting, northing, elevation in meters)
 GPS End-point: 34.150345 -116.048570 End time: 8:49 am/pm
(easting, northing, elevation in meters)
 Start Temp: 64° °C End Temp: 67° °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow, all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

Date of survey: 10 4 22 Survey biologist(s): Tim CHUMLEY EMILY URQUOI
(day, month, year) (name, email, and phone number)
 Site description: Aztec Ave, Siesta Cr., Plaza Rd, Homestead Dr, Alley, 2 Mile Rd, Crestview Dr
(project name and size, general location)
 County: SB Quad: 29 Palms Location: Twenty-nine Palms
(UTM coordinates, lat-long, and/or TRS; map datum)
 Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: 1+2 Transect length: 2.2 mi
 GPS Start-point: 34.153833 -116.049895 Start time: 0922 @am/pm
(easting, northing, elevation in meters)
 GPS End-point: 34.149167 -116.053653 End time: 11:50 @am/pm
(easting, northing, elevation in meters)
 Start Temp: 69° °C/F End Temp: 76° °C/F

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

TWC 4/10/22

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

TWC 4/10/22

Date of survey: 10 4 22 Survey biologist(s): Tim CHUMLEY EMILY URQUIDI
(day, month, year) (name, email, and phone number)

Site description: Desert Knoll Ave, Playa Vista Dr, White Sands Drive, Aztec Ave, Desert Dunes Dr
(project name and size, general location) Samuel Knoll Dr.

County: SB Quad: 29 Palms Location: Twenty nine Palms
(UTM coordinates, lat-long, and/or TRS, map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: 1#2 Transect length: 1.8 mi

GPS Start-point: 34.157481 -116.045313 Start time: 13:15 am/pm
(easting, northing, elevation in meters)

GPS End-point: 34.154875 -116.053457 End time: 14:40 am/pm
(easting, northing, elevation in meters)

Start Temp: 18° °C End Temp: 80° °C

Live Tortoises

Detection number	GPS location Easting Northing		Time	Tortoise location <small>(in burrow, all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

4/10/22 TWC

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting Northing		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

TWC 4/10/22

Date of survey: 10 4 22 Survey biologist(s): Tim Chumley Emily Urquidi
(day, month, year) (name, email, and phone number)
 Site description: Colle Todd
(project name and size, general location)
 County: SB Quad: 29 Palms Location: Twenty-nine Palms
(UTM coordinates, lat-long, and/or TRS; map datum)
 Circle one: coverage or Sampling Area size to be surveyed: _____ Transect #: 142 Transect length: 330 ft
 GPS Start-point: 34.161171 -116.050963 Start time: 14:50 am/pm
(easting, northing, elevation in meters)
 GPS End-point: 34.161154 -116.049977 End time: 15:00 am/pm
(easting, northing, elevation in meters)
 Start Temp: 79° °C F End Temp: 79° °C F

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Two 4/10/22

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

4/10/22 Tail

Date of survey: 11 4 22 Survey biologist(s): Tim CHUMLEY, NATHAN MOORHATCH, KEVIN SALGADO
(day, month, year) (name, email, and phone number)
 Site description: "Colle Todd" east end
(project name and size; general location)
 County: SB Quad: 29 Palms Location: Twenty-nine Palms
(UTM coordinates, lat-long, and/or TRS; map datum)
 Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: 1/2 Transect length: 0.20
 GPS Start-point: 34.161249 -116.045333 Start time: 08:01 am/pm
(easting, northing, elevation in meters)
 GPS End-point: 34.161216 -116.048803 End time: 08:30 am/pm
(easting, northing, elevation in meters)
 Start Temp: 60° F End Temp: 65° F

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

**WASTEWATER COLLECTION SYSTEM, PHASES 1 AND 2
RESULTS OF SENSITIVE PLANT SURVEYS**



CITY OF TWENTYNINE PALMS, SAN BERNARDINO COUNTY, CALIFORNIA

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20 July 2022

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1.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, Inc. (Wood) was contracted by Terra Nova Planning and Research to conduct a biological resources assessment at the site of Phases 1 and 2 of a proposed wastewater collection system project (project) in Twentynine Palms, San Bernardino County, California. The assessment (Wood 2022) identified twenty special status (sensitive) plant species which are known from the project area and at project elevations. Therefore, focused surveys were conducted for those species. The results of those surveys are presented here.

1.1 Project Location and Topography

The project is entirely within the City of Twentynine Palms, San Bernardino County, California (see Figure 1). It is located primarily on the 7.5-minute Twentynine Palms, Calif. United States Geological Survey (USGS) quadrangle extending slightly south into the Queen Mountain, Calif. USGS quadrangle. It is in Township 1 North, Range 9 East, in portions of Sections 15, 16, 20-22, 27-29, 32 and 33 (see Figure 2). Project topography is roughly level overall, with some low hills in the southwestern area. Elevations range from approximately 1,795 feet (547 meters) in the northeast to 2,140 feet (652 meters) in the southwest. The land within the study area generally slopes from the southwest to the northeast (NV5 2022).

1.2 Project Description

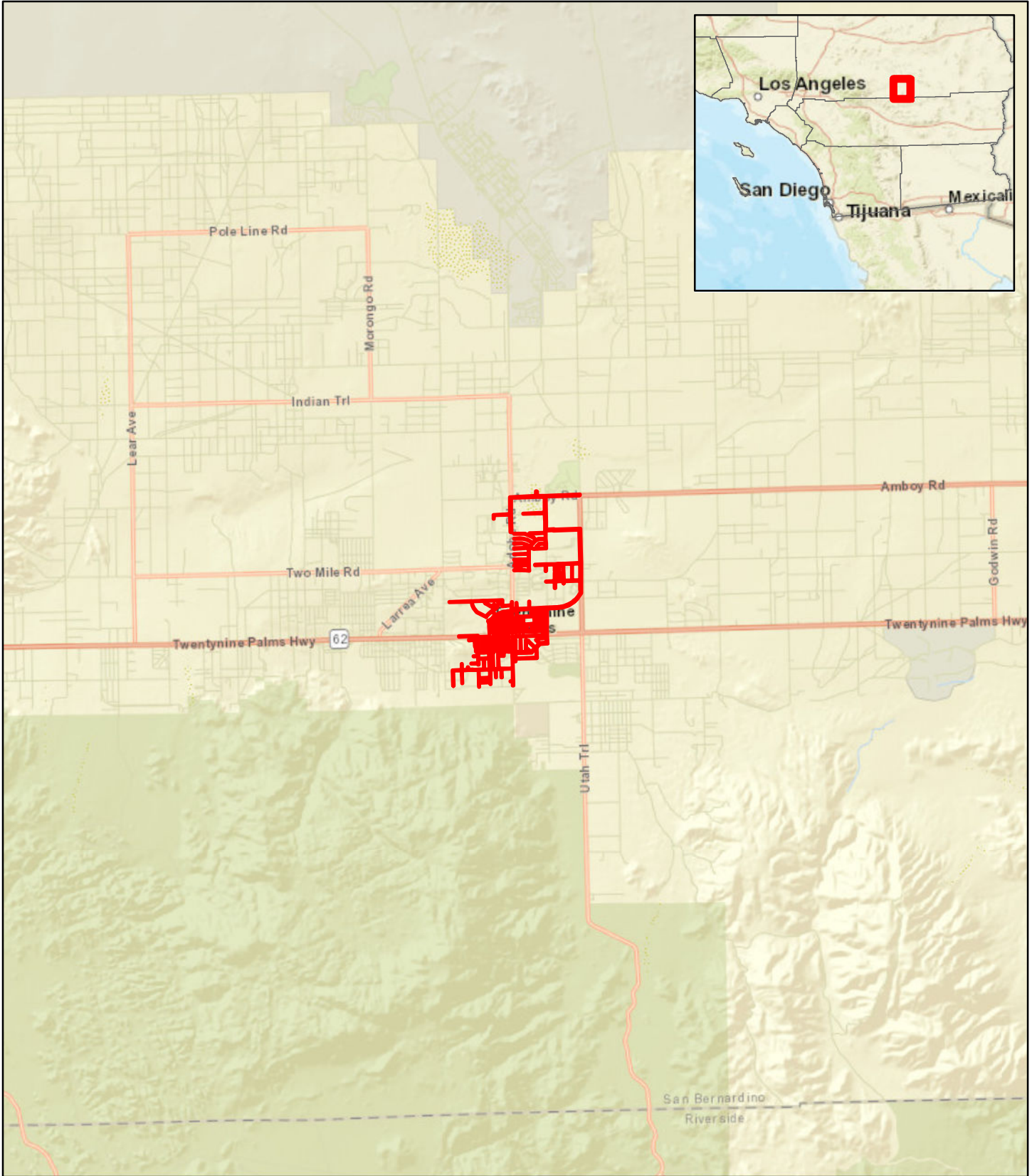
Phase 1 includes:

- Trunk sewers for Phase 1.
- Collector sewers for Phase 1.
- Two existing package treatment plants for the Turtle Rock and Desert Knoll Developments.
- The two large dense military housing developments on Two Mile Road and Joe Davis Drive.
- The residential area northeast of the Adobe Road – Two Mile Road intersection.
- The commercial area on Adobe Road and Amboy Road north of Samarkand Drive.

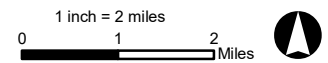
Phase 2 includes:

- Trunk sewers for Phase 2.
- Collector sewers for Phase 2.
- Two planned package treatment plants for project Phoenix and the Wander Hotel.
- The dense downtown area east of Donnell Hill. This area has a balanced mix of both residential and commercial land use.

See Figure 3 for a project overview.



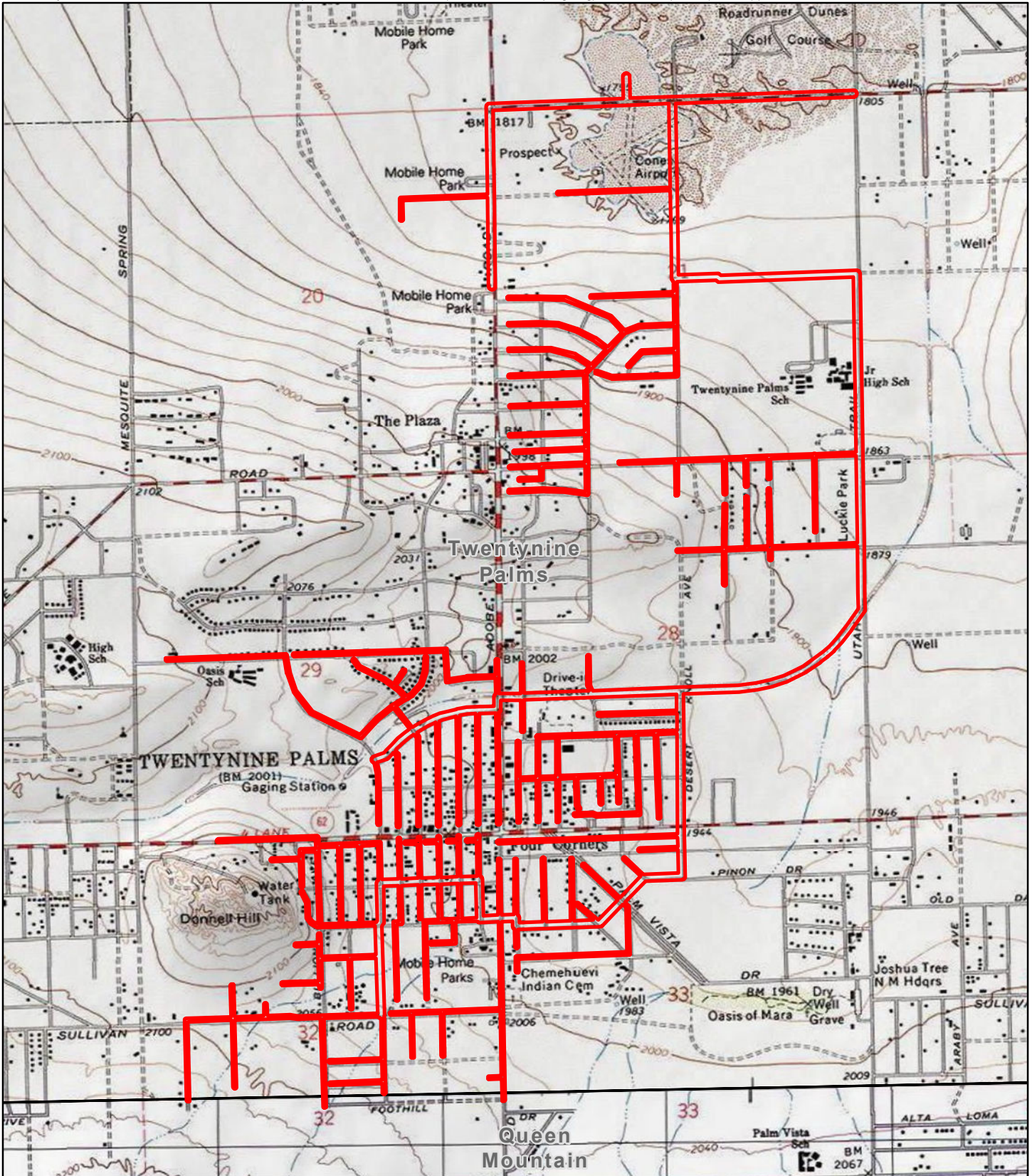
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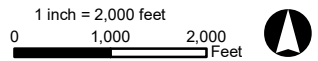
 Project Area

FIGURE 1
Regional Vicinity
Twentynine Palms Wastewater Collection System
Phases 1 and 2
Sensitive Plant Surveys
Twentynine Palms, CA

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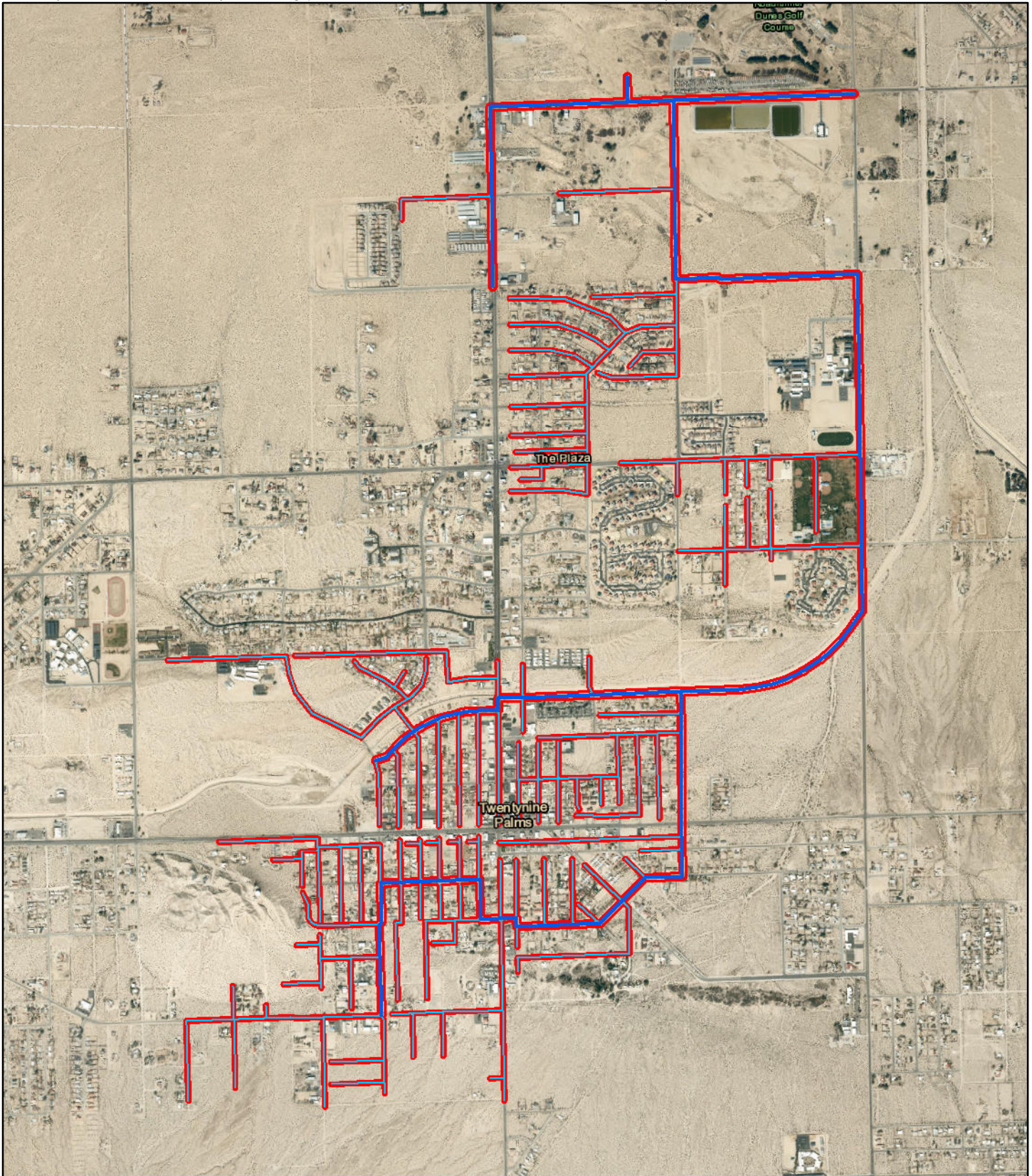
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 Project Area

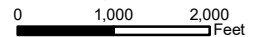
FIGURE 2
USGS 7.5" Topo Quad: Twentynine Palms
Twentynine Palms Sanitation
Sewer Trunk Line Project
Sensitive Plant Surveys
Twentynine Palms, CA

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1 inch = 2,000 feet






-  Proposed Trunk Sewer
-  Proposed Collector Sewer
-  Project Area



FIGURE 3
Project Overview
Twentynine Palms Sanitation
Sewer Trunk Line Project
Sensitive Plant Surveys
Twentynine Palms, CA

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2.0 REGULATORY FRAMEWORK

2.1 Federal

National Environmental Policy Act (NEPA) – Portions of the proposed project could fall under the jurisdiction of a federal agency (i.e., U.S. Army Corps of Engineers). The NEPA establishes certain criteria that must be adhered to for any project that is “financed, assisted, conducted or approved by a federal agency. The federal lead agency is required to “determine whether the proposed action will significantly affect the quality of the human environment.”

2.2 State of California

California Endangered Species Act (CESA) – This legislation is similar to the federal ESA, however it is administered by the CDFW. The CDFW is authorized to enter into “memoranda of understanding” with individuals, public agencies, and other institutions to import, export, take, or possess state-listed species for scientific, educational, or management purposes. The CESA prohibits the take of state-listed species except as otherwise provided in state law. Unlike the federal ESA, the CESA applies the take prohibitions to species currently petitioned for state-listing status (candidate species). State lead agencies are required to consult with the CDFW to ensure that actions are not likely to jeopardize the continued existence of any state-listed species or result in the destruction or degradation of occupied habitat.

Section 2081 of the State Fish and Game Code – Under Section 2081 of the California Fish and Game Code, the CDFW authorizes individuals or public agencies to import, export, take, or possess state endangered, threatened, or candidate species in California through permits or memoranda of understanding. These acts, which are otherwise prohibited, may be authorized through permits or “memoranda of understanding” if (1) the take is incidental to otherwise lawful activities, (2) impacts of the take are minimized and fully mitigated, (3) the permit is consistent with regulations adopted in accordance with any recovery plan for the species in question, and (4) the applicant ensures suitable funding to implement the measures required by the CDFW. The CDFW shall make this determination based on the best scientific information available and shall include consideration of the species’ capability to survive and reproduce.

California Environmental Quality Act (CEQA) – The basic goal of the CEQA is to retain a high-quality environment now and in the future. The specific goals are for California’s public agencies to:

- Identify the significant environmental effects of their actions; and, either
- Avoid those significant environmental effects, where feasible; or
- Mitigate those significant environmental effects, where feasible.

The CEQA applies to “projects” proposed to be undertaken or requiring approval by State and/or local governmental agencies. projects are activities which have the potential to have a physical

impact on the environment and may include the enactment of zoning ordinances, the issuance of conditional use permits and the approval of tentative subdivision maps. Where a project requires approvals from more than one public agency, the CEQA requires one of these public agencies to serve as the "lead agency."

A "lead agency" must complete the environmental review process required by the CEQA. The most basic steps of the environmental review process are:

- Determine if the activity is a "project" subject to the CEQA;
- Determine if the "project" is exempt from the CEQA;
- Perform an Initial Study to identify the environmental impacts of the project and determine whether the identified impacts are "significant". Based on its findings of "significance", the lead agency prepares one of the following environmental review documents:
 - Negative Declaration if it finds no "significant" impacts;
 - Mitigated Negative Declaration if it finds "significant" impacts but revises the project to avoid or mitigate those significant impacts;
 - Environmental Impact Report (EIR) if it finds "significant" impacts.

While there is no ironclad definition of "significance", Article 5 of the CEQA Guidelines provides criteria to lead agencies in determining whether a project may have significant effects.

The purpose of an EIR is to provide state and local agencies and the public with detailed information on the potentially significant environmental effects which a proposed project is likely to have and to provide ways in which those effects may be minimized and indicate alternatives to the project.

The Native Plant Protection Act (NPPA) – The NPPA includes measures to preserve, protect, and enhance rare and endangered native plant species. Definitions for "rare and endangered" are different from those contained in the CESA. However, the list of species afforded protection in accordance with the NPPA includes those listed as rare and endangered under the CESA. The NPPA provides limitations on take as follows: "no person will import into this state, or take, possess, or sell within this state" any rare or endangered native plants, except in accordance with the provisions outlined in the act. If a landowner is notified by the CDFW, pursuant to section 1903.5 that a rare or endangered plant species is growing on their property, the landowner shall notify the CDFW at least 10 days prior to the changing of land uses to allow the CDFW to salvage the plants.

3.0 METHODS

3.1 Literature Review and Records Search

A literature review and record search were conducted to identify occurrences of special status biological resources in the project vicinity. The review included:

- A report from the CDFW's California Natural Diversity Data Base (CNDDDB) for a five-mile radius of the project site (CDFW 2022),
- The California Native Plant Society (CNPS) including records from the following California USGS 7.5-minute topographic quadrangles within five miles of the project: 29 Palms, Queen Mountain, Sunfair, Indian Cove, 29 Palms Mountain, and Valley Mountain (CNPS 2022),
- Pertinent documents from the Wood library and project files (*e.g.*, other biological surveys from the general vicinity).

3.2 Sensitive Plant Surveys

Field reconnaissance surveys were conducted by Wood Senior Biologist John F. Green on 22 and 28 March 2022 to evaluate the suitability of existing habitat onsite to support special status biological resources. The areas identified as being suitable for the detection of rare plants were then surveyed by a team of Wood biologists from 5 through 12 April 2022 and from 13 through 15 June 2022. Wood PhD botanist Timothy Chumley led the effort and was in the field on all survey days. Other Wood biologists conducting focused surveys during that time period included John F. Green, Nathan Moorhatch, Michael Wilcox, Alec Williams, Phil Clevinger, Lauryn Duoto, Emily Urquidi, Kevin Salgado, and Melanie Bukovac. Survey methodology was guided by CDFW (2018), CNPS (2001), and USFWS (2000). All plant species observations were recorded in field notes and special status species locations were recorded using Global Positioning System (GPS) technology. Representative photos were taken (see cover page).

4.0 RESULTS

4.1 Literature Review

The results of the literature review and focused surveys are presented in Table 1.

Table 1. Special Status Plants & Vegetation Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status ¹			Habitat (for plants includes elevational range in meters & blooming period)	Occurrence Probability ²
		Federal	State	CRPR		
<i>Ayenia compacta</i>	California ayenia	None	S3	2B.3	Mojavean & Sonoran desert scrub, rocky. 150 - 1095 meters (m). Blooms (B): March - April.	Absent Not found during any survey.
<i>Calochortus striatus</i>	alkali mariposa-lily	None	S2S3	1B.2	Chaparral, chenopod scrub, meadows and seeps, Mojavean desert scrub, alkaline, mesic. 70 - 1595 m. B: April - June.	Absent CNDDDB records on project site, but not found during any survey.
<i>Coryphantha alversonii</i>	Alverson's foxtail cactus	None	S3	4.3	Mojavean and Sonoran desert scrub, usually in granitic areas, sometimes rocky or sandy. 75 - 1525 m. B: April - June (September -October).	Occurs Found during April and June focused surveys.
<i>Eschscholzia androuxii</i>	Joshua tree poppy	None	S3	4.3	Joshua tree "woodland", Mojavean desert scrub on flats, gravelly, rocky, sandy, slopes, washes. 585 - 1685 m. B: February -May (June).	Absent Not found during any survey.
<i>Funastrum utahense</i>	Utah vine milkweed	None	S4	4.2	Mojavean and Sonoran desert scrub, sometimes in gravelly or sandy. 100 - 1435 m. B: (March) April - June (September - October).	Occurs Found during April and June focused surveys.
<i>Galium angustifolium ssp. gracillimum</i>	slender bedstraw	None	S4	4.2	Joshua tree "woodland" and Sonoran desert scrub in granitic or rocky places. 130 - 1550 m. B: April -June (July).	Absent Not found during any survey.

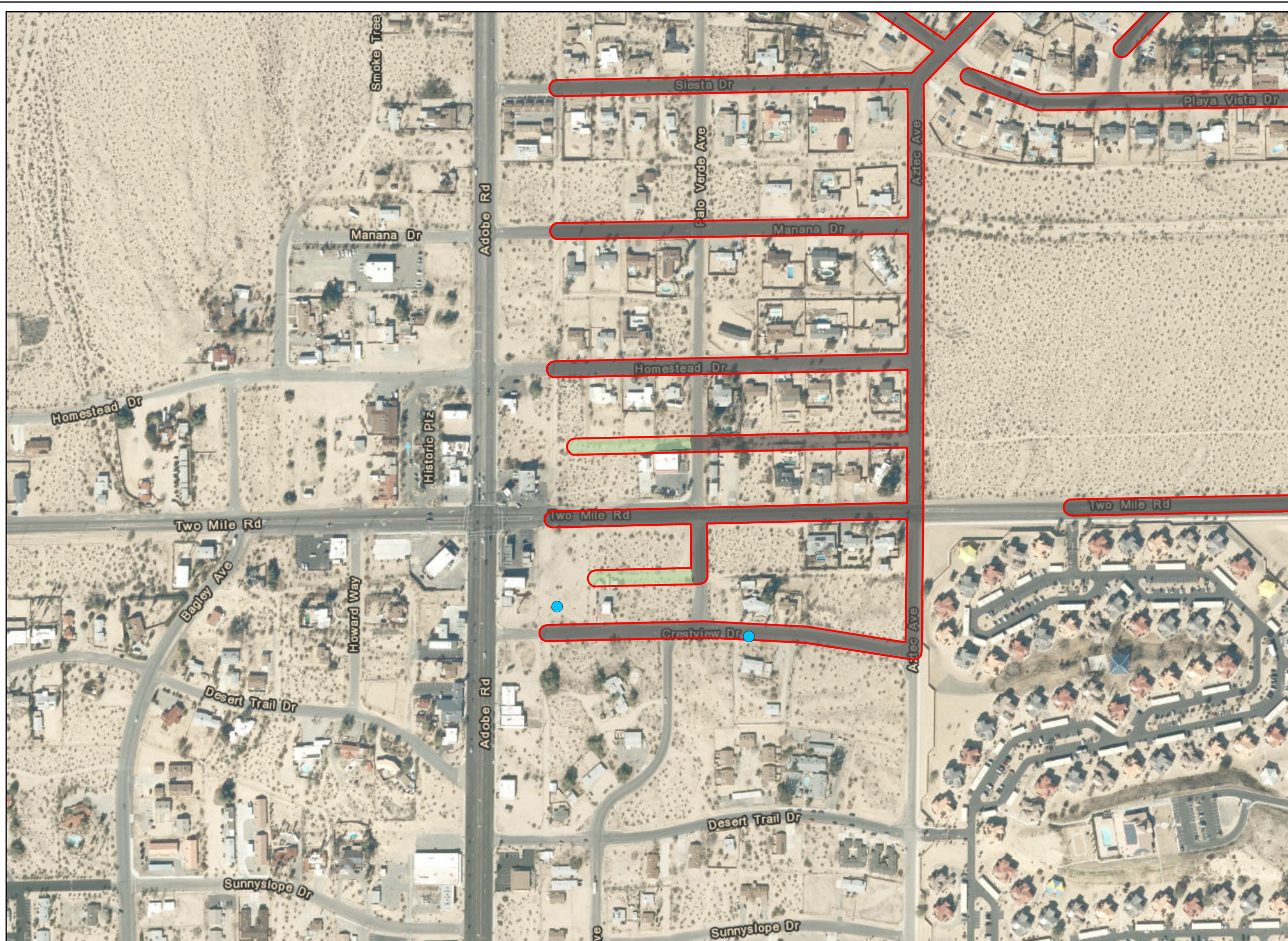
Table 1. Special Status Plants & Vegetation Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status ¹			Habitat (for plants includes elevational range in meters & blooming period)	Occurrence Probability ²
		Federal	State	CRPR		
<i>Grusonia parishii</i>	Parish's club-cholla	None	S2	2B2	Mojavean and Sonoran desert scrub, Joshua tree "woodland" in sandy or rocky locations. 300-1524m. B: May-July.	Absent Not found during any survey.
<i>Jaffuelobryum raui</i>	Rau's jaffuelobryum moss	None	S2	2B.3	Alpine dwarf scrub, chaparral, & Mojavean and Sonoran desert scrub. Known from dry places, carbonate, openings, and rock crevices. 490 - 2100 m.	Absent Not found during any survey.
<i>Jaffuelobryum wrightii</i>	Wright's jaffuelobryum moss	None	S2S3	2B.3	Chaparral, Mojavean & Sonoran desert scrub, alpine dwarf scrub. Openings: dry places, rock crevices, carbonate. 160-2500 m.	Absent Not found during any survey.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	None	S2	1B.1	Marshes and swamps, playas, vernal pools. 1 - 1220 m. B: February - June.	Absent CNDDDB records on project site, but not found during any survey.
<i>Linanthus maculatus</i> ssp. <i>maculatus</i>	Little San Bernardino Mountains linanthus	None	S2	1B.2	Desert dunes, Sonoran and Mojavean desert scrub, Joshua tree "woodland." Sandy places. Usually in light-colored quartz sand; often in wash or bajada. 140 - 1220 m. B: March-May	Absent Not found during any survey.
<i>Matelea parvifolia</i>	spear-leaf matelea	None	S3	2B.3	Rocky places in Mojavean and Sonoran desert scrub. 440 - 1095 m. B: March -May (July).	Absent Not found during any survey.
<i>Monardella robisonii</i>	Robison's monardella	None	S3	1B.3	Pinyon-juniper woodland. 610 - 1500 m., B: (February) April - September (October).	Absent. No suitable habitat.
<i>Muhlenbergia appressa</i>	appressed muhly	None	S3	2B.2	Coastal scrub, Mojavean desert scrub, valley and foothill grassland in rocky places. 20 - 1600 m. B: April - May.	Absent Not found during any survey.

Table 1. Special Status Plants & Vegetation Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status¹			Habitat (for plants includes elevational range in meters & blooming period)	Occurrence Probability²
		Federal	State	CRPR		
<i>Penstemon thurberi</i>	Thurber's beardtongue	None	S3	4.2	Chaparral, Joshua tree "woodland", Sonoran desert scrub, pinyon-juniper woodland. 500 - 1220 m. B: May-July.	Absent Not found during any survey.
<i>Saltugilia latimeri</i>	Latimer's woodland-gilia	None	S3	1B.2	Chaparral, Mojavean desert scrub, pinyon-juniper woodland. 400-1900m. B: March-June	Absent Not found during any survey.
<i>Sidalcea neomexicana</i>	salt spring checkerbloom	None	S2	2B.2	Chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, playas. 15 - 1530 m. B: March - June.	Absent CNDDDB records on project site, but not found during any survey.
<i>Tetracoccus hallii</i>	Hall's tetracoccus	None	S4	4.3	Mojavean and Sonoran desert scrub. 30 - 1200 m. B: January - May.	Absent Not found during any survey.
<i>Wislizenia refracta</i> ssp. <i>refracta</i>	jackass-clover	None	S1	2B.2	Desert dunes, playas, Mojavean and Sonoran desert scrub. 600 - 800 m. B: April - November.	Absent Not found during any survey.
<i>Yucca brevifolia</i>	western Joshua tree	None	SCT	None	Mojavean desert scrub, Joshua tree "woodland."	Absent Not found during any survey.

<p>¹Status Codes:</p> <p><u>Federal</u> FE = Federal Endangered FT = Federal Threatened FC = Federal Candidate</p> <p><u>State</u> SE = State Endangered ST = State Threatened SCT=State Candidate FP = Fully Protected</p> <p>The California Natural Diversity Database program is a member of the NatureServe Network of natural heritage programs, & uses the same conservation status methodology as other network programs. Elements are ranked using standard criteria & definitions. This standardization makes the ranks comparable between organisms & across political boundaries.</p> <p>The three main categories that are taken into consideration when assigning an element rank are rarity, threats, & trends. Within these three categories, various factors are considered, including:</p> <ul style="list-style-type: none"> • Range extent, area of occupancy, population size, total number of occurrences, & number of good occurrences (ranked A or B). Environmental specificity can also be used if other information is lacking. 	<ul style="list-style-type: none"> • Overall threat impact as well as intrinsic vulnerability (if threats are unknown). • Long-term & short-term trends. <p>S1 = Critically Imperiled – At very high risk of extirpation in the state due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors</p> <p>S2 = Imperiled – At high risk of extirpation in the state due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.</p> <p>S3 = Vulnerable – At moderate risk of extirpation in the state due to a fairly restricted range, relatively few populations or occurrences, recent & widespread declines, threats, or other factors.</p> <p>S4 = Apparently Secure – At a fairly low risk of extirpation in the state due to an extensive range &/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.</p> <p>S5 = Secure – At very low or no risk of extirpation in the</p>	<p>state due to a very extensive range, abundant populations or occurrences, & little to no concern from declines or threats.</p> <p>SX = Presumed Extirpated – Species is believed to be extirpated from the state Not located despite intensive searches of historical sites & other appropriate habitat, & virtually no likelihood that it will be rediscovered</p> <p>SH = Possibly Extirpated – Known from only historical records but still some hope of rediscovery. There is evidence that the species may no longer be present in the state, but not enough to state this with certainty.</p> <p>SNR = Unranked – State rank not yet assessed.</p> <p><u>California Rare Plant Rank (CRPR)</u> 1A = Presumed extirpated in California & either rare or extinct elsewhere 1B = Rare or Endangered in California & elsewhere 2A = Presumed extirpated in California, but more common elsewhere 2B = Rare or Endangered in California, more common elsewhere 3 = Plants for which we need more information – Review list 4 = Plants of limited distribution – Watch list</p> <p>²Occurrence Probability</p> <p><i>Occurs</i> = Observed on the site by Wood personnel or recorded there by other qualified biologists.</p> <p><i>High</i> = Observed in similar habitat in region by qualified biologists, or habitat on the site is a type often utilized by the species & the site is within the known range of the species.</p> <p><i>Moderate</i> = Reported sightings in surrounding region, or site is within the known range of the species & habitat on the site is a type occasionally used by the species.</p> <p><i>Low</i> = Site is within the known range of the species but habitat on the site is rarely used by the species.</p> <p><i>Absent</i> = A focused study failed to detect the species, or no suitable habitat is present.</p> <p><i>Unknown</i> = Distribution & habitat use has not been clearly determined.</p>
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4.2 Field Visits

Weather conditions during the focused surveys were favorable for the detection of plant species. All plant species detected (excluding obvious horticultural plantings) are included in Appendix A. Two sensitive plant species were detected: Alverson's foxtail cactus and Utah vine milkweed (see Figure 4 and the photographs on the cover page).



- Survey Area
- Vegetation Communities**
- Creosote Bush Scrub
- Developed/Disturbed
- Sensitive Plant Species**
- Utah vine milkweed

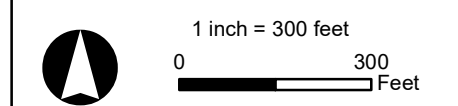
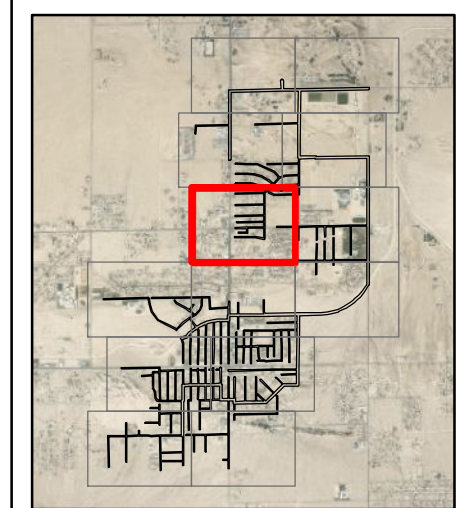
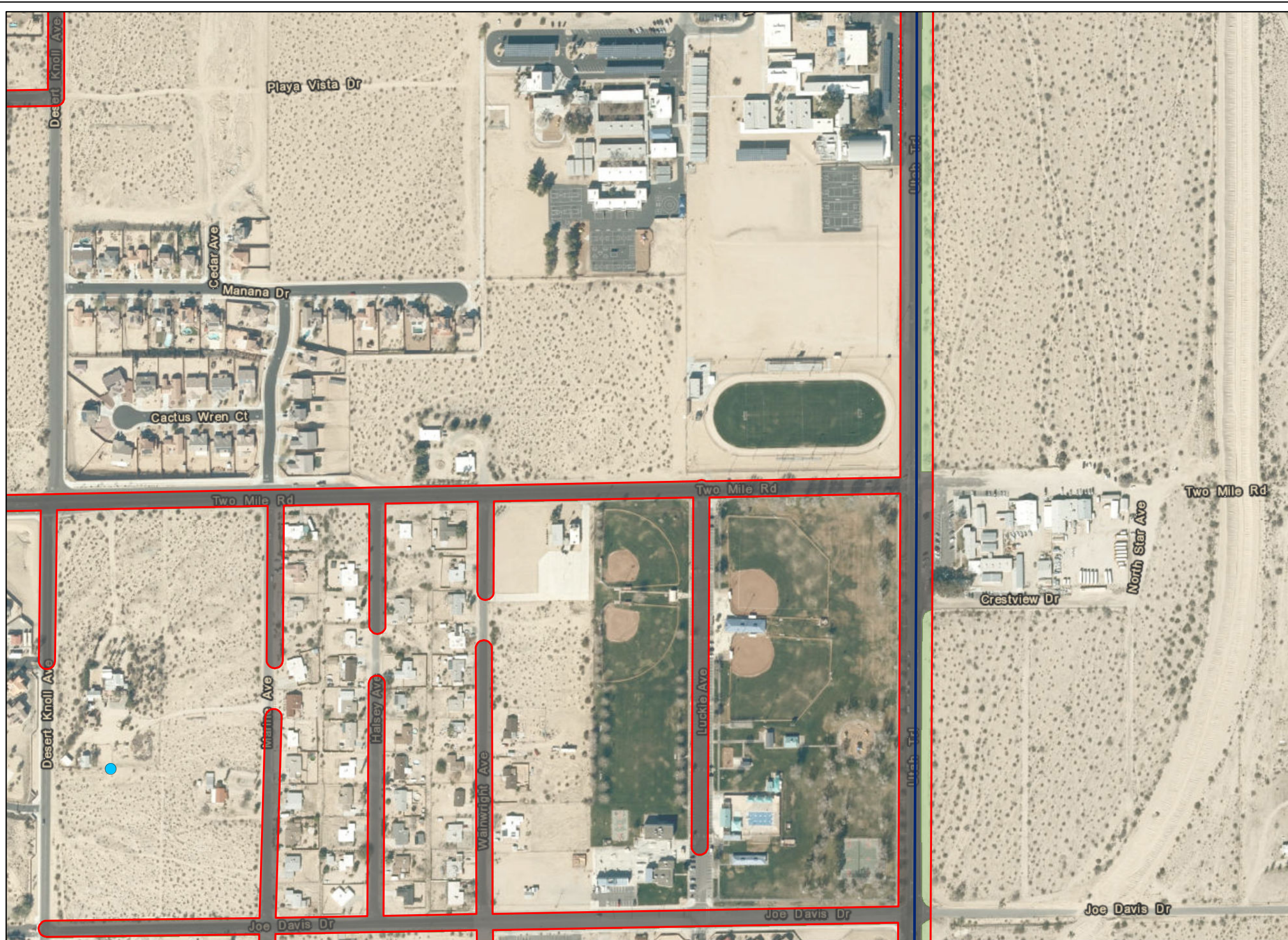







FIGURE 4a
 Sensitive Plant Detections
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Developed/Disturbed
- Sensitive Plant Species**
-  Utah vine milkweed

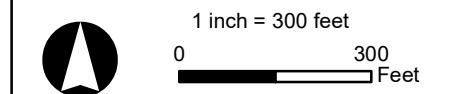
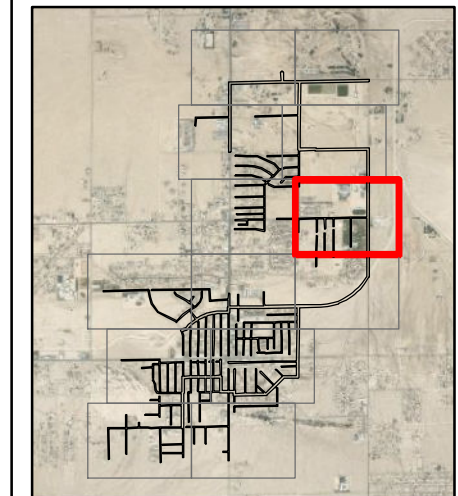
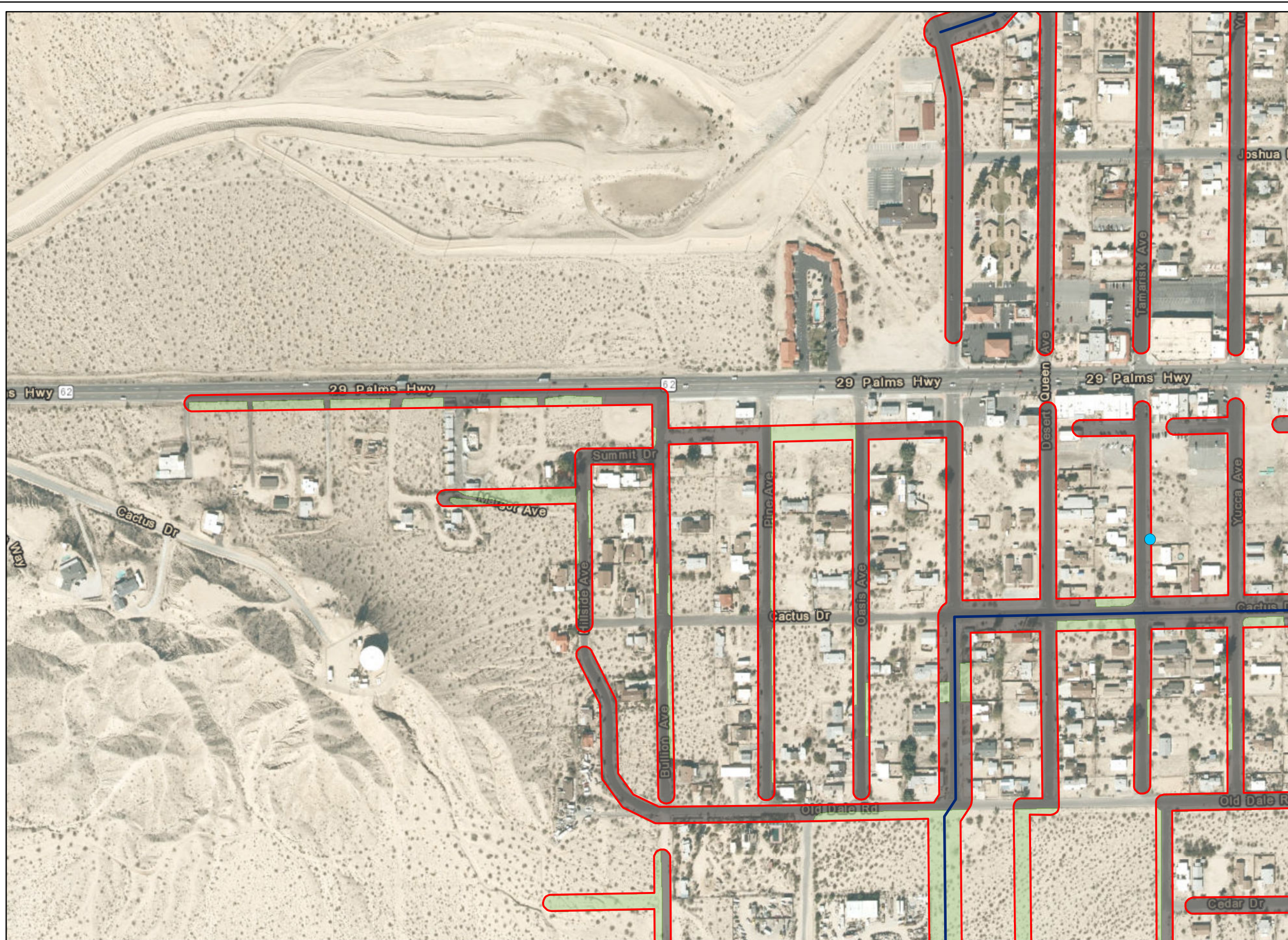







FIGURE 4b
 Sensitive Plant Detections
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Developed/Disturbed
- Sensitive Plant Species**
-  Utah vine milkweed

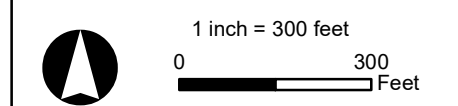
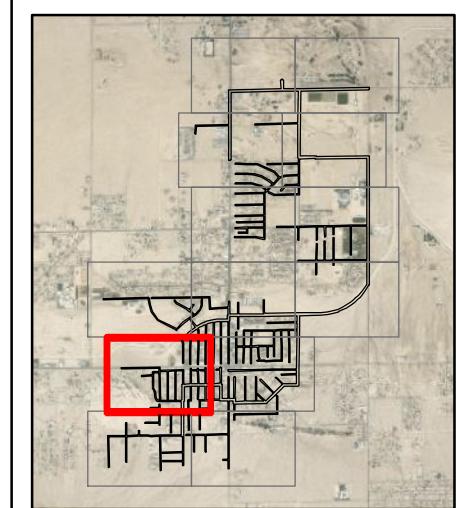
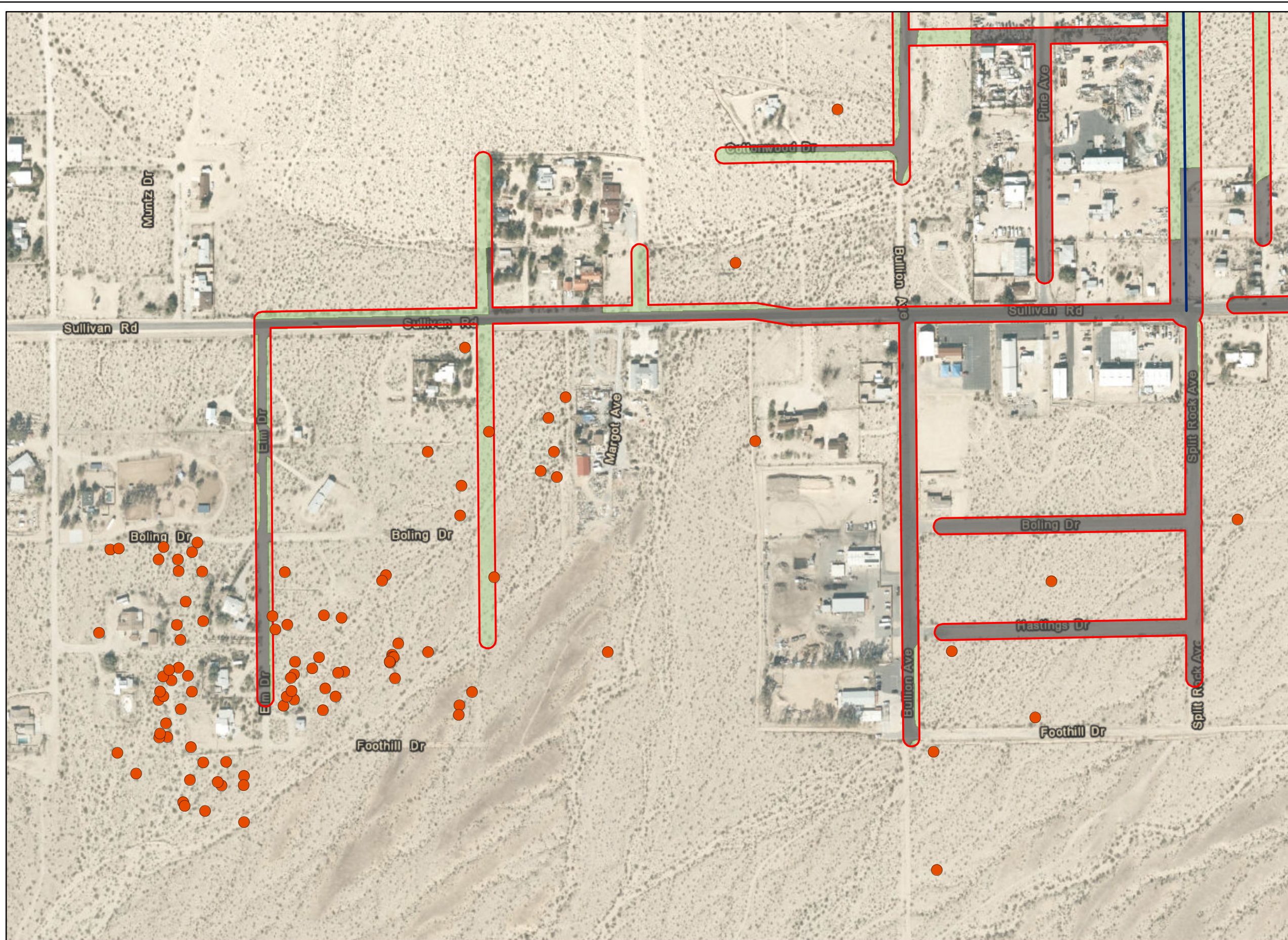


FIGURE 4c
 Sensitive Plant Detections
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA





- Proposed Trunk Sewer - Phase 1
- Survey Area
- Vegetation Communities**
- Creosote Bush Scrub
- Developed/Disturbed
- Sensitive Plant Species**
- Alverson's foxtail cactus

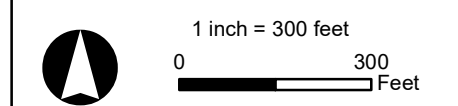
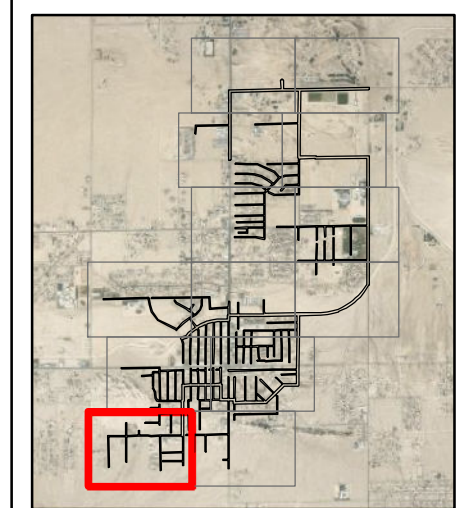


FIGURE 4d
 Sensitive Plant Detections
 Twentynine Palms Wastewater
 Collection System, Phases 1 & 2
 Twentynine Palms, CA



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5.0 DISCUSSION

Twenty special status plant species are known from project area habitats and elevations. Two do not occur: the Joshua tree (not detected by focused surveys) and Robison's monardella (no suitable habitat). Two were detected by focused surveys: Alverson's foxtail cactus and Utah vine milkweed. The remaining 16 species were not found by the focused surveys. We have marked them absent based on the focused survey results, however it is a drought year, and it is possible that some of these species failed to germinate and/or bloom at all this year.

Although the two sensitive plant species known to occur on site are not state or federally listed as threatened or endangered, impacts could be considered significant under the CEQA. Alverson's foxtail cactus and Utah vine milkweed should be avoided. A worker's environmental awareness program (WEAP) should be implemented to educate the construction crew of the special status plant species present on the project site. Biological monitoring should be conducted near their populations. If unavoidable, these plant species should be transplanted and/or have seeds and/or the topsoil around the plants (which contains the seed bank) collected with guidance from the CDFW. If additional special status plants are detected in the future due to a more favorable rainfall year, these same recommendations would apply.

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Appendix A Plant Species Detected

Plant Species Detected

GNETAEE (GNETOPHYTA)

Ephedraceae

Ephedra californica

Ephedra Family

desert tea

EUDICOTS (EUDICOTIDAE)

Amaranthaceae

Amaranthus blitoides

Tidestromia suffruticosa var. *oblongifolia*

Amaranth Family

procumbent pigweed

honeysweet

Apocynaceae

Asclepias erosa

Asclepias subulata

***Funastrum utahense*

Dogbane and Milkweed Family

desert milkweed

rush milkweed

Utah vine milkweed

Asteraceae

Ambrosia acanthicarpa

Ambrosia dumosa

Ambrosia salsola

Baileya multiradiata

Bebbia juncea var. *aspera*

Chaenactis fremontii

Chaenactis stevioides

Dicoria canescens

Encelia farinosa

Encelia frutescens

Geraea canescens

Isocoma acradenia

**Lactuca serriola*

Laennecia coulteri

Malacothrix glabrata

Palafoxia arida

Rafinesquia neomexicana

**Sonchus asper* ssp. *asper*

Stephanomeria pauciflora

Sunflower Family

annual bur-sage

white bur-sage

cheesebush

desert marigold

sweetbush

Fremont pincushion

desert pincushion

desert twinbugs

brittlebush

button brittlebush

desert-sunflower

alkali goldenbush

prickly lettuce

Coulter's horseweed

desert dandelion

Spanish-needle

desert chicory

prickly sow thistle

wire-lettuce

Bignoniaceae

Chilopsis linearis ssp. *arcuata*

Trumpet-Creeper Family

desert willow

Boraginaceae

Amsinckia tessellata

Cryptantha dumetorum

Greeneocharis circumscissa

Johnstonella angustifolia

Pectocarya platycarpa

Pectocarya recurvata

Borage Family

bristly fiddleneck

scrambling cryptantha

cushion cryptantha

narrow-leaved Johnstonella

wide-toothed pectocarya

arched-nut pectocarya

Brassicaceae

**Brassica tournefortii*
Lepidium densiflorum
Lepidium fremontii
**Sisymbrium irio*
**Sisymbrium orientale*
Streptanthella longirostris

Cactaceae

***Coryphantha alversonii*
Cylindropuntia bigelovii
Cylindropuntia echinocarpa
**Cylindropuntia fulgida*
Cylindropuntia ramosissima
Echinocereus engelmannii
Ferocactus cylindraceus
Opuntia basilaris

Caryophyllaceae

Achyronychia cooperi

Chenopodiaceae

Atriplex canescens
Atriplex polycarpa
**Chenopodium murale*
**Salsola tragus*
Suaeda nigra

Cleomaceae

Peritoma arborea

Cucurbitaceae

Cucurbita palmata

Ehretiaceae

Tiquilia plicata

Euphorbiaceae

Croton californicus
**Euphorbia maculata*
Euphorbia polycarpa

Mustard Family

Sahara mustard
common pepperweed
desert pepperweed
London rocket
Indian hedgemustard
longbeak streptanthella

Cactus Family

(Alverson's) foxtail cactus
teddy-bear cholla
golden/silver cholla
jumping cholla
pencil cactus
Engelmann's hedgehog cactus
California barrel cactus
beavertail pricklypear

Pink Family

frost-mat

Goosefoot Family

four-wing saltbush
allscale saltbush
nettleleaf goosefoot
Russian thistle
bush seepweed

Spiderflower Family

bladderpod

Gourd and Melon Family

coyote melon

Ehretia Family

fan-leaved tiquilia

Spurge Family

California croton
spotted spurge
smallseed sandmat

Fabaceae

Caesalpinia gilliesii
Dalea mollissima
**Parkinsonia aculeata*
Parkinsonia florida
Prosopis glandulosa var. *torreyana*
Psoralea argophylla
Senegalia greggii
Senna armata

Geraniaceae

**Erodium cicutarium*

Hydrophyllaceae

Phacelia crenulata
Phacelia cf. *tanacetifolia*

Krameriaceae

Krameria bicolor

Lamiaceae

Condea emoryi
Salvia columbariae
Scutellaria mexicana

Loasaceae

Mentzelia albicaulis

Malvaceae

Eremalche exilis
**Malva parviflora*
Sphaeralcea ambigua

Nyctaginaceae

Abronia villosa var. *villosa*
Allionia incarnata
Boerhavia coccinea

Onagraceae

Chylismia claviformis
Eremothera boothii ssp. *desertorum*
Oenothera deltooides

Orobanchaceae

Aphyllon cooperi

Papaveraceae

Eschscholzia minutiflora

Legume Family

bird-of-paradise
soft prairie clover
Mexican palo verde
blue palo verde
honey mesquite
smoke tree
catclaw
spiny senna

Geranium Family

redstem filaree

Waterleaf Family

cleftleaf wildheliotrope
lacy phacelia

Rhatany Family

white rhatany

Mint Family

desert lavender
chia
bladder-sage

Loasa Family

whitestem blazingstar

Mallow Family

white mallow
cheeseweed
desert globemallow

Four-o'clock Family

desert sand verbena
trailing windmills
scarlet spiderling

Evening-Primrose Family

browneyes
desert suncup
Devil's lantern

Broom-Rape Family

desert broomrape

Poppy Family

pygmy poppy

Polygonaceae

Chorizanthe brevicornu
Chorizanthe rigida
Eriogonum deflexum
Eriogonum inflatum
Eriogonum reniforme
Eriogonum thomasii

Rosaceae

Petalonyx thurberi

Simmondsiaceae

Simmondsia chinensis

Solanaceae

Datura wrightii
**Nicotiana glauca*
Lycium cooperi

Tamaricaceae

**Tamarix aphylla*
**Tamarix ramosissima*

Viscaceae

Phoradendron californicum

Zygophyllaceae

Larrea tridentata

MONOCOTS (MONOCOTYLEDONAE)

Arecaceae

^*Washingtonia* sp.

Agavaceae

Yucca schidigera

Poaceae

Aristida purpurea
**Bromus rubens*
**Cynodon dactylon*
Dasyochloa pulchella
Festuca octoflora
Hilaria rigida
**Hordeum murinum*
**Pennisetum setaceum*
**Schismus* sp.

Buckwheat Family

brittle spineflower
Devil's spineflower
skeleton weed
desert trumpet
kidney-leaf wild buckwheat
Thomas' wild buckwheat

Loasa Family

sandpaper-plant

Jojoba Family

jojoba

Nightshade Family

sacred thorn-apple
tree tobacco
peach thorn

Tamarisk Family

athel
saltcedar

Mistletoe Family

desert mistletoe

Caltrop Family

creosote bush

Palm Family

fan palm

Century Plant Family

Mojave yucca

Grass Family

purple three-awn
red brome
Bermuda grass
low woollygrass
sixweeks grass
big galleta
wall barley
crimson fountain grass
Mediterranean grass

^Fan palms onsite were seedlings and presumed to have sprouted from the seeds of palms planted as landscaping on surrounding developments. They could potentially be *Washingtonia* native to California, but they are not native at this location.

Wastewater Collection System, Phases 1 & 2

Sensitive Plant Surveys

July 2022

KEY

- * = non-native species
- ** = special-status species
- cf. = compares favorably with
- sp. = plant identified to genus only

This list reports only plants observed on the site by this study. Other species may have been overlooked or undetectable due to their growing season. Plants were identified from keys, descriptions and drawings in the Jepson Flora Project (2022). Plant nomenclature and systematics follows the Jepson Flora Project and/or United States Department of Agriculture, Natural Resources Conservation Service (2022).

WASTEWATER COLLECTION SYSTEM, PHASES 1 AND 2

DELINEATION OF JURISDICTIONAL WATERS



**City of Twentynine Palms
San Bernardino County, California**

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July 2022

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ACRONYMS AND ABBREVIATIONS

AMSL	above mean sea level
CEQA	California Environmental Quality Act
CDFW	California Department of Fish and Wildlife
CWA	Clean Water Act
EPA	Environmental Protection Agency
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
ft.	Feet
GIS	Geographic Information System
HUC	Hydrologic Cataloging Unit
IP	Individual Permit
M	Meters
NEPA	National Environmental Policy Act
NL	not listed
NWI	National Wetlands Inventory
NWP	Nationwide Permit
OBL	obligate
OHWM	ordinary high-water mark
PM	post mile
Rapanos	Rapanos v. U.S. and Carabell v. U.S.
RPW	relatively permanent waterway
RWQCB	Regional Water Quality Control Board
SWANCC	Solid Waste Agency of Northern Cook County v. USACE
TNW	traditionally navigable waterway
UPL	upland
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture, Natural Resources Conservation Service
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey
WSC	Waters of the State of California
WUS	Waters of the United States

1.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, Inc. (Wood) was contracted by Terra Nova Planning and Research to conduct a jurisdictional delineation and report at the site of Phases 1 and 2 of a proposed wastewater collection system project (project) in Twentynine Palms, San Bernardino County, California. This report presents regulatory framework, methods, and results of a delineation of jurisdictional waters, wetlands, and associated riparian habitat potentially impacted by the project.

1.1 Purpose

The purpose of the delineation is to determine the extent of state and federal jurisdiction within the project area potentially subject to regulation by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA), Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA and Porter Cologne Water Quality Control Act, and California Department of Fish and Wildlife (CDFW) under Section 1602 of the California Fish and Game Code.

1.2 Project Description

The installation of the sewer pipeline will be generally trenched within existing roads. Areas where the sewer line crosses drainages will utilize jack and bore method to install the pipe under the drainage without disturbing the surface.

Phase 1 includes:

- Trunk sewers for Phase 1.
- Collector sewers for Phase 1.
- Two existing package treatment plants for the Turtle Rock and Desert Knoll Developments.
- The two large dense military housing developments on Two Mile Road and Joe Davis Drive.
- The residential area northeast of the Adobe Road – Two Mile Road intersection.
- The commercial area on Adobe Road and Amboy Road north of Samarkand Drive.

Phase 2 includes:

- Trunk sewers for Phase 2.
- Collector sewers for Phase 2.
- Two planned package treatment plants for project Phoenix and the Wander Hotel.
- The dense downtown area east of Donnell Hill. This area has a balanced mix of both residential and commercial land use.

1.3 Project Location

The project is entirely within the city of Twentynine Palms, San Bernardino County, California (see Figure 1). It is located primarily on the 7.5-minute *Twentynine Palms*, Calif. United States Geological Survey (USGS) quadrangle extending slightly south into the *Queen Mountain*, Calif. USGS quadrangle. It is in Township 1 North, Range 9 East, in portions of Sections 15, 16, 20-22, 27-29, 32 and 33 (see Figure 2). Project topography is relatively flat, with some low hills in the southwestern area. Elevations range from approximately 1,795 feet (547 meters) in the northeast to 2,140 feet (652 meters) in the southwest. The land within the study area generally slopes from the southwest to the northeast (NV5 2022).

2.0 METHODS

Prior to conducting delineation fieldwork, the following literature and materials were reviewed:

- Aerial photographs (2020) of the survey area at a scale of 1:1800 to determine the potential locations of jurisdictional waters or wetlands
- USGS topographic map (Figure 2-Appendix A) to determine the presence of any “blue line” drainages or other mapped water features
- USDA soil mapping data (Figure 3-Appendix A)
- USFWS National Wetlands Inventory map to identify areas mapped as wetland features (Figure 4-Appendix A)

A field survey of the project site was conducted by Wood Senior Biologist Dale Hameister on 14 April 2022. The survey consisted of all areas where potential drainages were crossing or in the vicinity of the proposed sewer lines within the survey area and identifying potentially jurisdictional water features. All accessible portions of the survey area were walked to determine if the flows associated with the project site meet the minimum criteria to be considered jurisdictional by the USACE, RWQCB, and CDFW. Visual observations of vegetation types and changes in hydrology and soil, as well as culvert locations were used to locate areas for evaluation. Weather conditions during delineation fieldwork was conducive for surveying with clear skies, winds ranging from 2 to 5 miles per hour, and a temperature of 62°-83° Fahrenheit.

USACE regulated Waters of the United States (WUS), including wetlands, and RWQCB Waters of the State of California (WSC) were delineated according to the methods outlined in *A Field Guide to the Identification of the Ordinary High-Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE, 2008a). The extent of WUS was determined based on indicators of an OHWM. The OHWM width was measured at points wherever clear changes in width occurred.

Potential Federally regulated wetlands were identified based on the *Wetlands Delineation Manual* (USACE, 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE, 2008b). Additional data was recorded to determine if an area fulfilled the wetland criteria parameters. Three criteria must be fulfilled to classify an area as a wetland under the jurisdiction of the USACE: 1) a predominance of hydrophytic vegetation, 2) the presence of hydric soils, and 3) the presence of wetland hydrology.

RWQCB jurisdictional areas identified as WSC were determined by the edge of the OHWM, like associated with USACE limits. CDFW jurisdiction is delineated by measuring the elevations of land that confine a stream to a definite course when its waters rise to their highest level and to the extent of associated riparian vegetation. This edge is identified as the clearly defined bed and bank feature and extends further to include any adjacent riparian habitat that clearly receives water resources associated with the drainage feature.

To determine jurisdictional boundaries, the surveyor walked the length of the drainage within the project area and recorded the centerline with a Trimble GeoXH global positioning system. The width of the drainage was determined by the OHWM and bankfull width measurements at locations where transitions were apparent. Other data recorded included bank height and morphology, substrate type, and all vegetation within the streambed and riparian vegetation adjacent to the streambed. Areas that lacked evidence of hydrophytic vegetation, lacked evidence of wetland hydrology, and had no recent disturbance, did not require a soil pit since the other wetland indicators were not present. Upon completion of fieldwork, all data collected in the field were incorporated into a Geographic Information System (GIS) along with basemap data. The GIS was then used to quantify the extent of jurisdictional waters and prepare graphical representations of that data.

3.0 ENVIRONMENTAL SETTING

3.1 Existing Conditions

The proposed project area consists of developed areas associated with the city of Twentynine Palms, CA. The survey area consists of urban areas, mostly non-vegetated flood control channels, creosote scrub habitat and disturbed areas. The elevation of the project site ranges from approximately 1,795 feet (547 meters) in the northeast to 2,140 feet (652 meters) ASML and slopes from west to east.

3.2 Hydrology

The average rainfall for the area is 4.24 inches per year (COOP 049099). Weather data was recorded in the city of Twentynine Palms. The most recent recordable rainfall fell on 16 February 2022 for a total of 0.02 inches. The most recent sizeable storm event occurred on 15 December 15 for a total of 0.29 inches.

The project site is generally located within the Southern Mojave-Salton Sea Subregion (USGS). It is more specifically located within the Mojave hydrologic area within the Southern Mohave hydrologic unit and within the Fortynine Palms/Canyon-Shortz Lake Watershed (Hydrologic Unit Code 1810010021) (Appendix A – Figure 3).

3.3 Vegetation

The dominant vegetation community within the vegetated survey area is *Larrea tridentata* Shrubland Alliance (Creosote bush scrub) (Sawyer et. al 2009). Holland (1986) refers to these vegetation communities as “Mojave creosote bush scrub”. Creosote bush scrub is dominated by creosote bush (*Larrea tridentata*) with various co-dominants including white bur-sage (*Ambrosia dumosa*), white rhatany (*Krameria bicolor*), allscale saltbush (*Atriplex polycarpa*) and cheesebush (*Ambrosia salsola*). In the northern project area there are stand of Saltbush Scrub dominated by allscale saltbush (*Atriplex polycarpa*) and/or four-wing saltbush (*Atriplex canescens*). A major flood control channel which originates from Fortynine Palms Canyon to the southwest is present onsite, as well as other unnamed drainages. These are mapped as Desert Wash Systems and where plants have not been removed by flood control agencies, they are vegetated with species such as smoke tree (*Psoralea argyrea*) and catclaw (*Senegalia greggii*) (FACU). No riparian indicator species were observed and no other hydric vegetation was observed.

3.4 Soils

Soil data is not mapped for the survey area. All soils observed during the field survey were coarse sand and rock. No indicators of wetland soils were observed, and no soil moisture was detected within the survey area.

3.5 National Wetlands Inventory

The United States Fish and Wildlife Service (USFWS) is the principal Federal agency that provides information to the public on the extent and status of the Nation's wetlands. The USFWS has developed a series of maps, known as the National Wetlands Inventory (NWI) to show wetlands and deep-water habitat. This geospatial information is used by Federal, State, and local agencies, academic institutions, and private industry for management, research, policy development, education, and planning activities. The NWI program was neither designed nor intended to produce legal or regulatory products; therefore, wetlands identified by the NWI program are not the same as wetlands defined by the USACE.

The NWI Mapper (USFWS, 2022) was accessed on-line to review mapped wetlands or riverine areas within the project study areas. The NWI mapper shows the flood channel as well as some smaller washes in the southwestern portion of the survey area. All the mapped drainages mapped are classified as riverine, intermittent streambed.

4.0 RESULTS

Based on the field visit, two ephemeral drainages were observed within mostly unvegetated earthen channels (Appendix A – Figure 6). The main flood control channel, Drainage 1 (D1), is an earthen trapezoid engineered. The top of bank width (CDFW) ranges between 65 to 73 feet and the bottom of the channel (RWQCB) ranges between 10-14 feet. There was little to no sign of OHWM within the channel due to routine maintenance of the channel with heavy equipment. The depth of the drainage varies from 6 to 15 feet. The unvegetated drainage feature consists of sandy soils with no hydric soil indicators. Therefore, there are no wetlands present within the drainage feature. Site photos of representative portions of the on-site drainage as well as off-site areas upstream and downstream are included in Appendix B.

The flow pattern of the flood control channel generally flows west to east and originates from the Twentynine Palms Oasis. The channel collects stormwater and urban runoff and connects to a natural dry wash north of the developed area of Twentynine Palms. The wash flows within braided channels to the east and terminated approximately 19.2 miles to the east at Dale Dry Lake.

There is an additional drainage, Drainage 2 (D2), which flows into D1 east of the project area. The drainage is partially an earthen engineered channel and is fed by dry braided washes from the southeast.

Due to the drainages terminating in an isolated dry lake and having no interstate commerce nexus or federal nexus, it was determined that D1 and D2 are not under USACE jurisdiction. This is due to the lack of direct connection to any RPG or TNW.

No other drainages investigated met the criteria to be considered jurisdictional.

Small, braided washes were surveyed within the southern portion of the survey area south of Sullivan Road and were determined to be non-jurisdictional due to lack of OHWM, defined bed and bank, and a total lack of any hydric vegetation.

The playa area south of Amboy Road and north of 2 Mile Road was also investigated. There was some evidence of soil cracking from temporary inundation during storms mixed with mesquite hummocks. Due to the lack of defined bed and bank and no evidence of OHWM or connection to any established drainage, it is not likely under USACE jurisdiction.

The Jurisdictional Delineation Map (Appendix A – Figure 5 and 6) identifies the two jurisdictional drainages observed. Table 1 includes the specific location of the drainages. Table 2 identifies the total jurisdictional area associated with the drainage features. Associated jurisdictional delineation forms can be found in Appendix C.

The USACE, in combination with the Environmental Protection Agency (EPA), when necessary, reserves the ultimate authority in making the final jurisdictional determination of WUS and the RWQCB reserves the ultimate authority in making the final jurisdictional determination of WSC. Additionally, CDFW has ultimate discretion in the determination of their jurisdiction. Based on our delineation, the drainages meet the requirements to be considered

jurisdictional by CDFW and RWQCB. The drainages are considered ephemeral and only conveys flows during and immediately following a storm event.

Table 1. Survey Site Information

Drainage	Latitude	Longitude	Quad	Township	Range	Section
D1	34.140971	-116.054382	Twentynine Palms	1N	9E	15, 16, 20-22, 27-29, 32 and 33
D2	34.148927	-116.028266	Twentynine Palms	1N	9E	22 and 27

Table 2. Summary of Jurisdictional Areas

Drainage ID /Survey Area	Watershed	Waters of the US Length (feet)	Waters of the US (acre)	RWQCB Length (Feet)	RWQCB (acre)	CDFW Length (Feet)	CDFW (acre)	Cowardin Class	Class of Aquatic Resource
D1	Fortynine Palms	0	0	32,012	13.57	32,012	58.57	R4SBJx	non-section10-non wetland
D2	Fortynine Palms	0	0	5,598	2.81	5,598	9.57	R4SBJ	non-section10-non wetland

CDFW – California Department of Fish and Wildlife

R4SBJ – Riverine, Intermittent, Streambed, excavated (Seasonally Flooded) based on Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et. al., 1979).

5.0 IMPACTS TO JURISDICTIONAL AREAS

Based on the proposed site plan that was provided by Terra Nova, the wastewater collection pipes will be installed in trenches within existing roadways. At this time it is assumed that the pipeline will be installed under the drainage utilizing the jack and bore method and will not impact any drainages. Regulatory Framework can be found in Appendix D.

5.1 Permitting Requirements

The proposed project will be avoiding impacts to jurisdictional drainages. If the proposed project requires permanent impacts to the jurisdictional drainage and therefore, authorization from USACE, RWQCB, and CDFW are required as described below.

5.1.1 U.S. Army Corps of Engineers

The drainage feature on-site is classified as an unvegetated ephemeral stream. As of September 7, 2021, a recent Arizona court case vacated the June 22, 2020, Navigable Waters Protection Rule effectively reinstating the definition in effect prior to 2015. U.S. Environmental Protection Agency (EPA) and the USACE are currently rewriting a new Navigable Waters Protection Rule to define “waters of the United States” (WOTUS) and should be submitted for review by early to mid-2022. California has a history of litigation on these such rules, so we will be following the current USACE and EPA requirements and make any necessary changes to maintain the current requirements.

The two most common types of permits issued by USACE under Section 404 of the CWA to authorize the discharge of dredged or fill material into WUS are: a nation-wide permit (NWP) or an individual permit (IP).

NWPs are general permits for specific categories of activities that result in minimal impacts to aquatic resources. To meet the requirements for NWP 29 for residential developments, the project must impact less than 0.5 acre and 300 linear feet. A complete description of qualifications under NWP 29 are at: <https://saw-reg.usace.army.mil/NWP2021/NWP29.pdf>. The currently NWP program will be effect from 15 March 2021 to 15 March 2026.

If any impacts are determined to be necessary for the project, mitigation measures required under the NWP program typically includes replacement of temporary impacts at a 2:1 ratio and replacement of permanent impacts at a 3:1 ratio. Mitigation can be implemented through the purchase of mitigation credits through an approved in-lieu fee program or similar mitigation bank. Other options can include the purchase of off-site habitat and placed into a conservation easement. It should be noted that the mitigation ratios are based on in-kind habitat replacement and ratios may be reduced if higher quality habitat is purchased.

5.1.2 Regional Water Quality Control Board

The project areas occur in the Lahontan RWQCB (Region 6). Under Section 401 of the CWA, the RWQCB must certify that the discharge of dredged or fill material into WUS does not violate state water quality standards.

The RWQCB also regulates impacts to WSC under the Porter Cologne Water Quality Control Act through issuance of a Construction General Permit, State General Waste Discharge Order, or Waste Discharge Requirements, depending upon the level of impact and the properties of the waterway.

The project proponent would need to obtain a Water Quality Certification. In addition to the formal application materials and fee (based on area of impact), a copy of the appropriate California Environmental Quality Act (CEQA) documentation must be included with the application.

5.1.3 California Department of Fish and Wildlife

A 1602 Streambed Alteration Agreement is required for all activities that alter streams and lakes and their associated riparian habitat, regardless of the extent of impacts. In addition to the formal application materials and fee (based on cost of the project), a copy of the appropriate CEQA documentation must be included with the application.

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City of Twentynine Palms Wastewater Collection System, Phase 1 and 2
Jurisdictional Delineation
July 2022

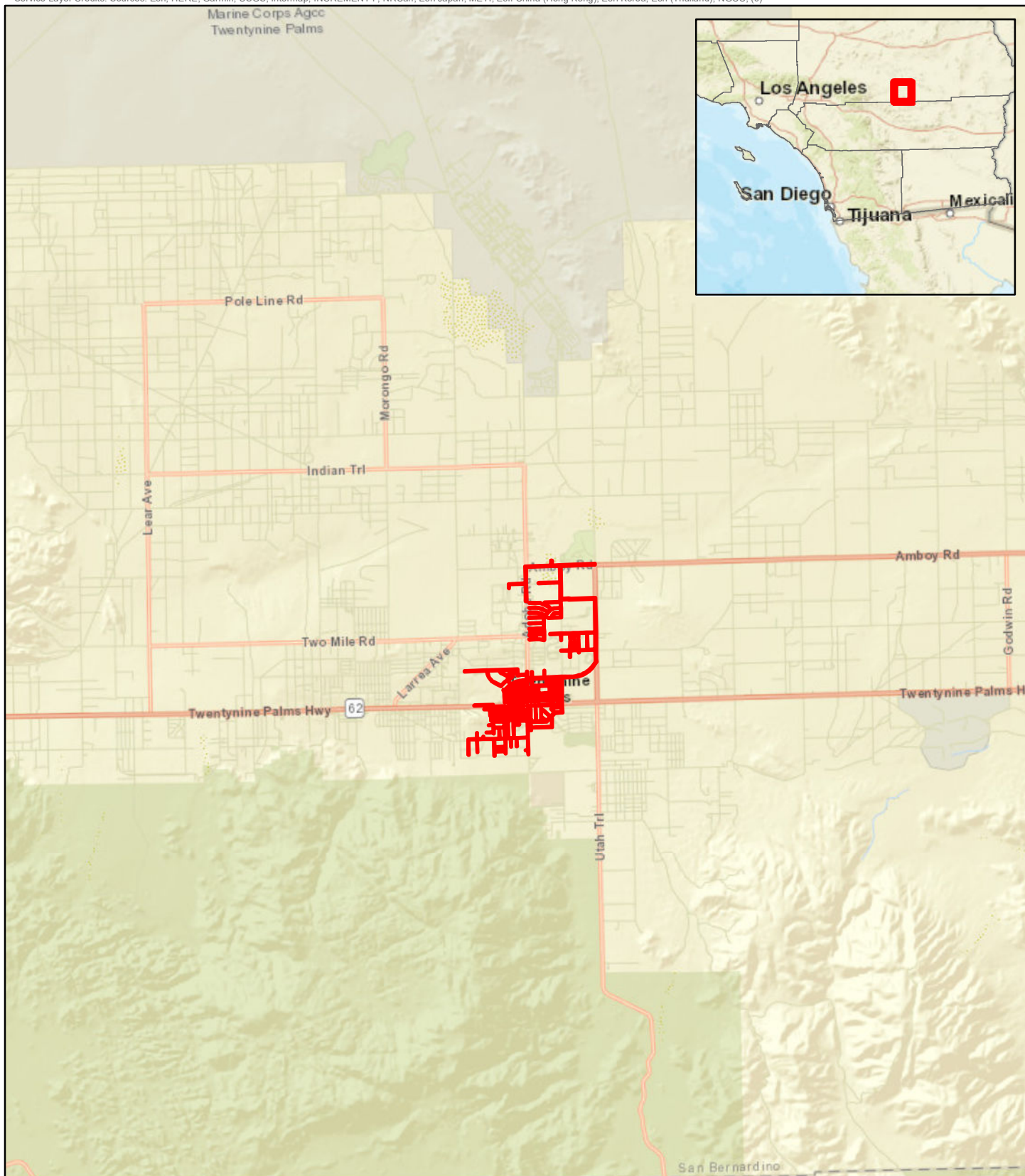
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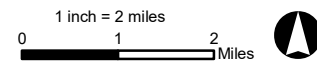
Weather Underground (Accessed 2022): <https://www.wunderground.com/dashboard/pws/KCAVICTO27>

Western Regional Climate Center (Accessed 2022)
<https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca9325>

APPENDIX A – JURISDICTIONAL MAPS

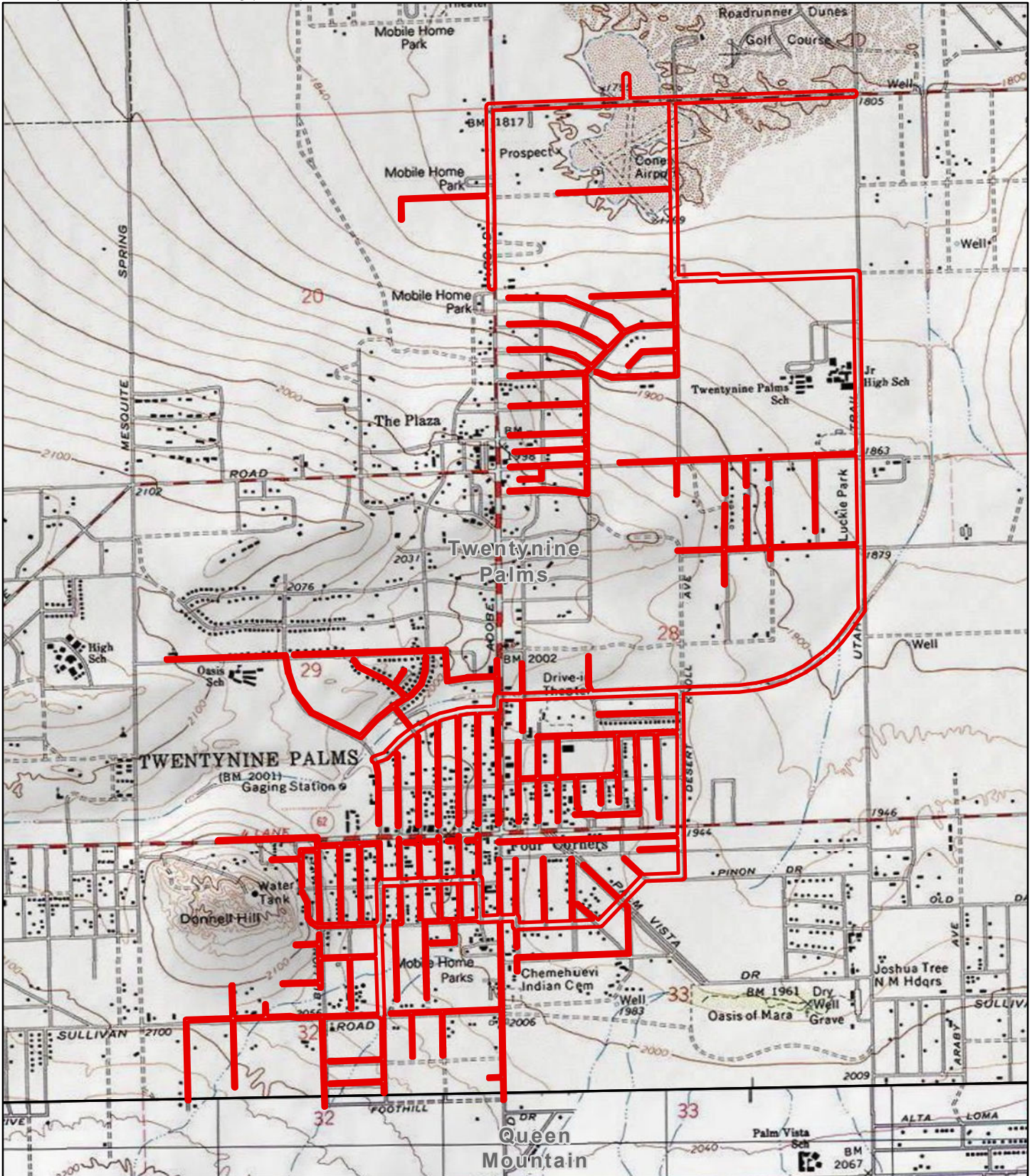


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 Project Area

FIGURE 1
Regional Vicinity
Twentynine Palms Wastewater Collection System
Jurisdictional Delineation
Twentynine Palms, CA



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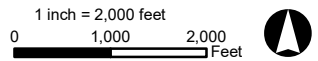
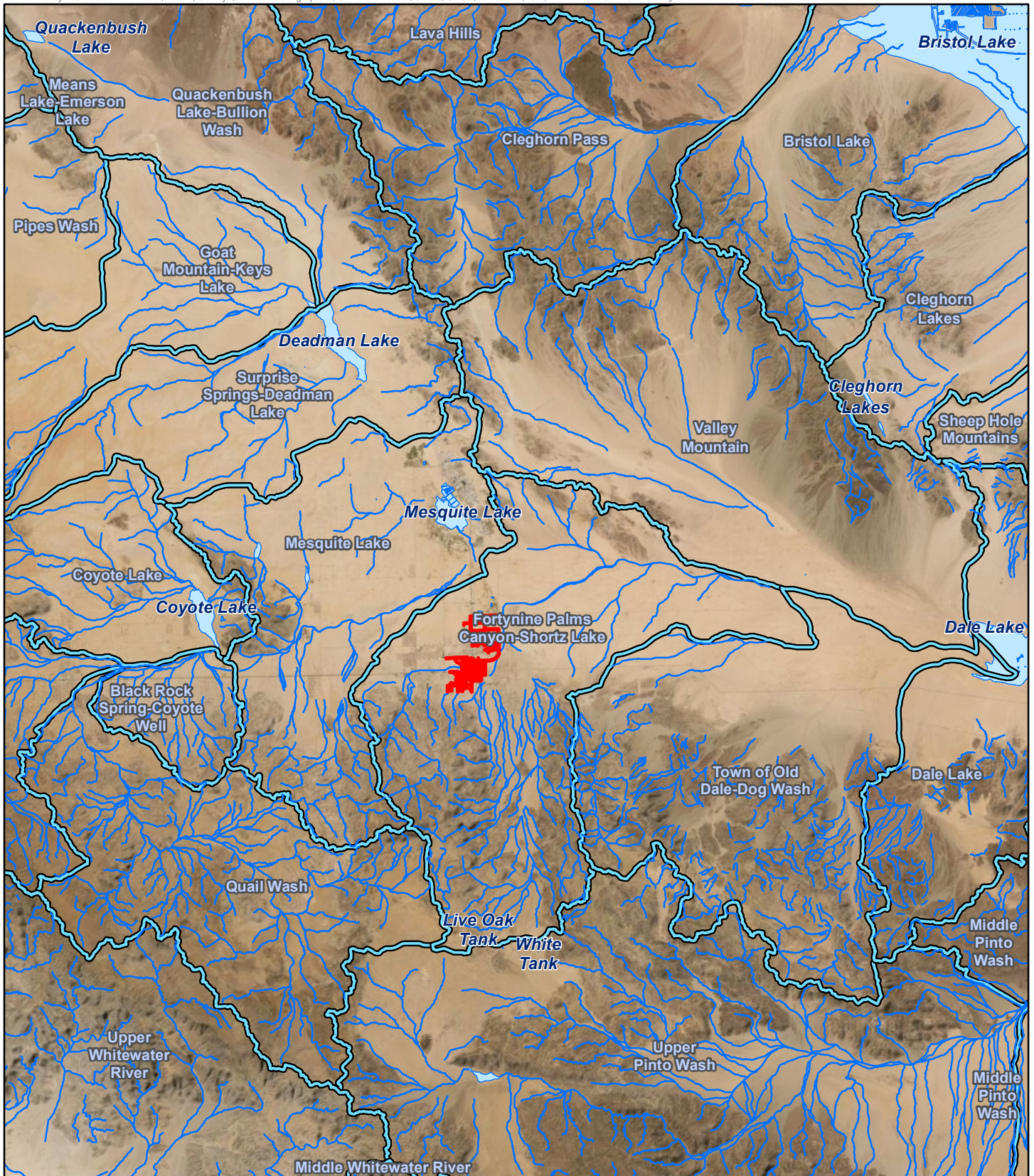


FIGURE 2



 Project Area

USGS 7.5" Topo Quad: Twentynine Palms
Twentynine Palms Wastewater Collection System
Jurisdictional Delineation
Twentynine Palms, CA



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- Project Area
- Stream (NHD)
- Watershed (HU10)
- Waterbody (NHD)

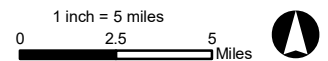
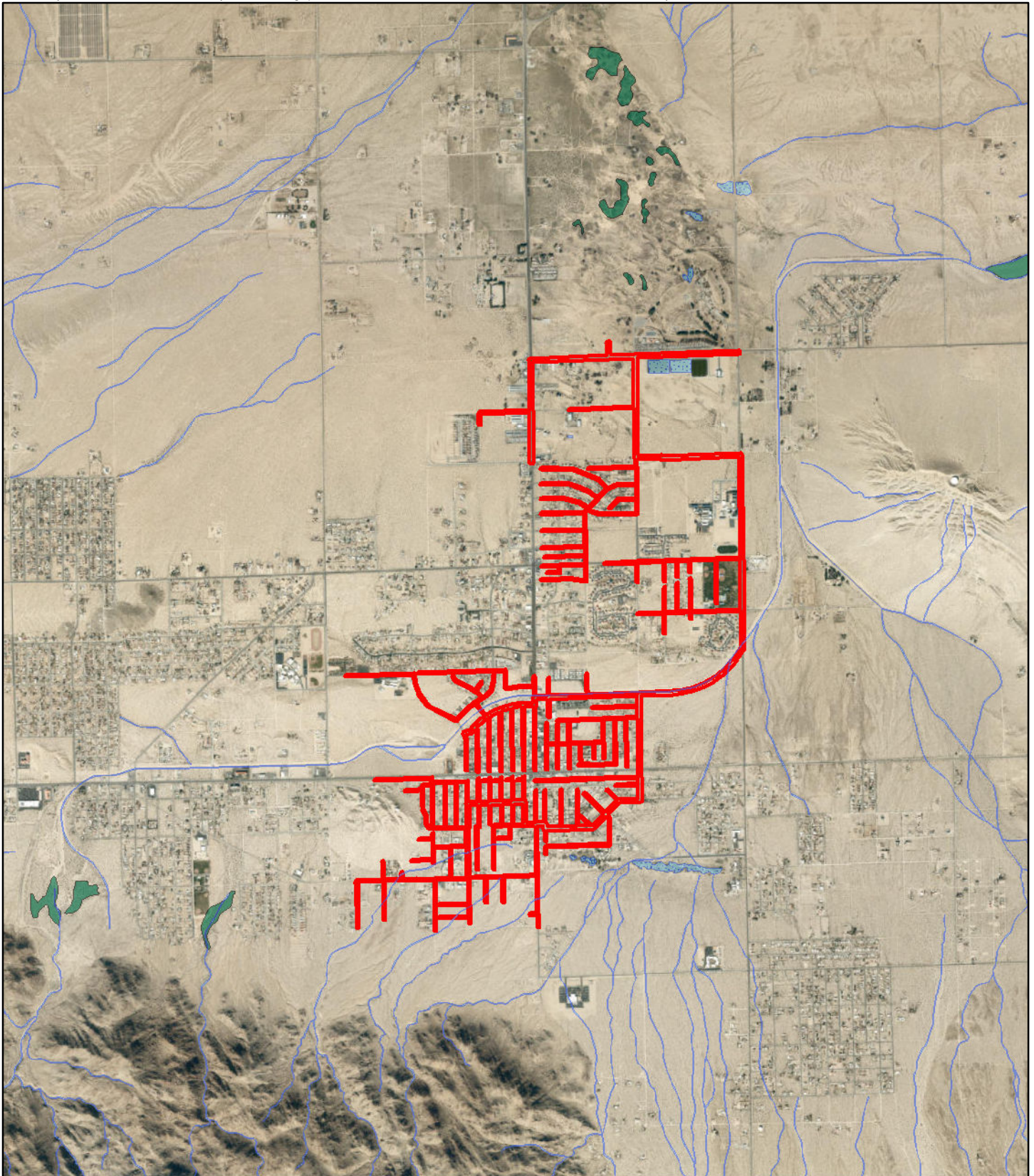
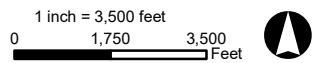


FIGURE 3
Hydrology/Watershed
Jurisdictional Delineation
Twentynine Palms, CA

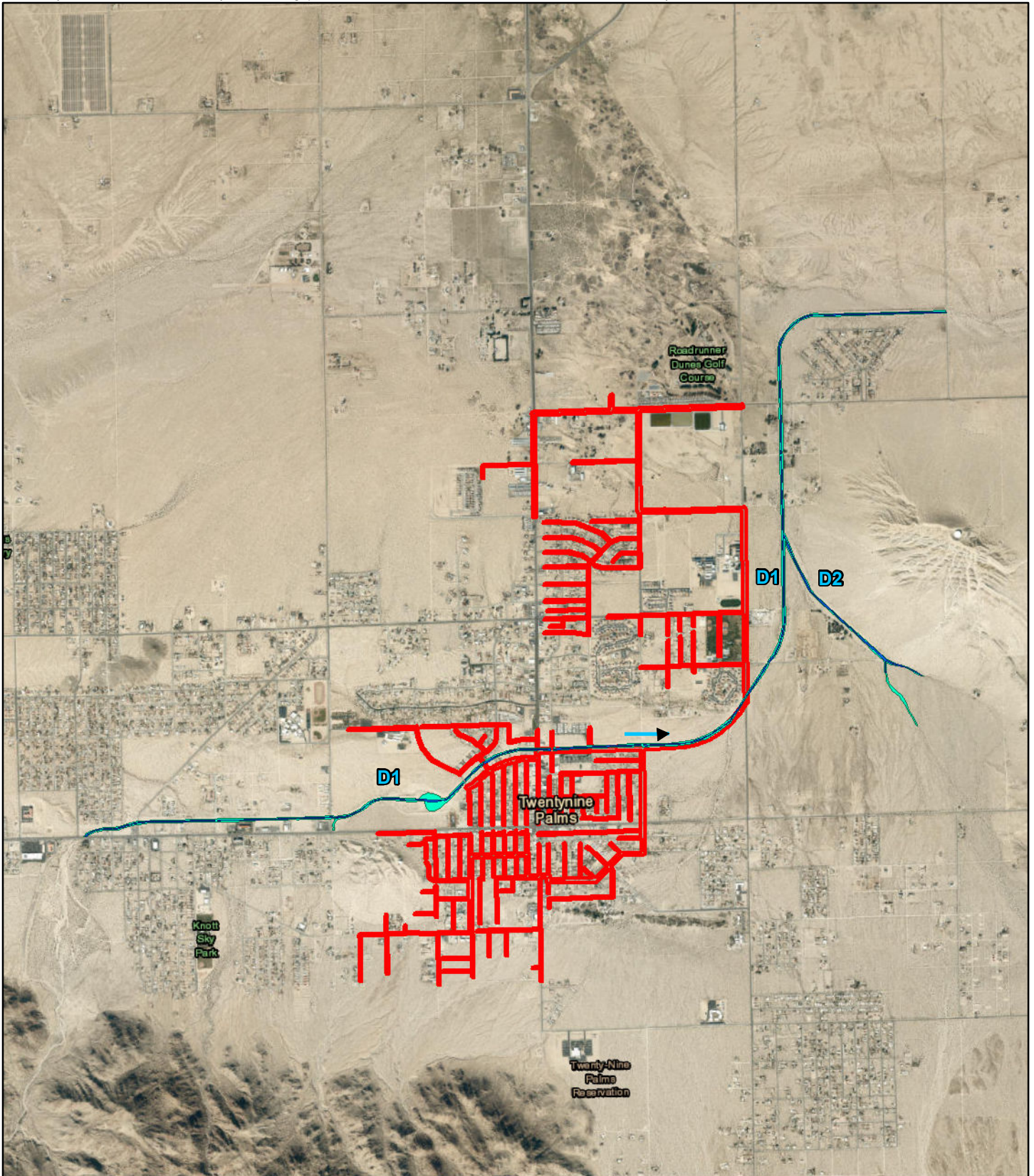


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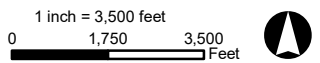


-  Wetlands
-  Riparian
-  Project Area

FIGURE 4
NWI
Twentynine Palms Wastewater Collection System
Jurisdictional Delineation
Twentynine Palms, CA



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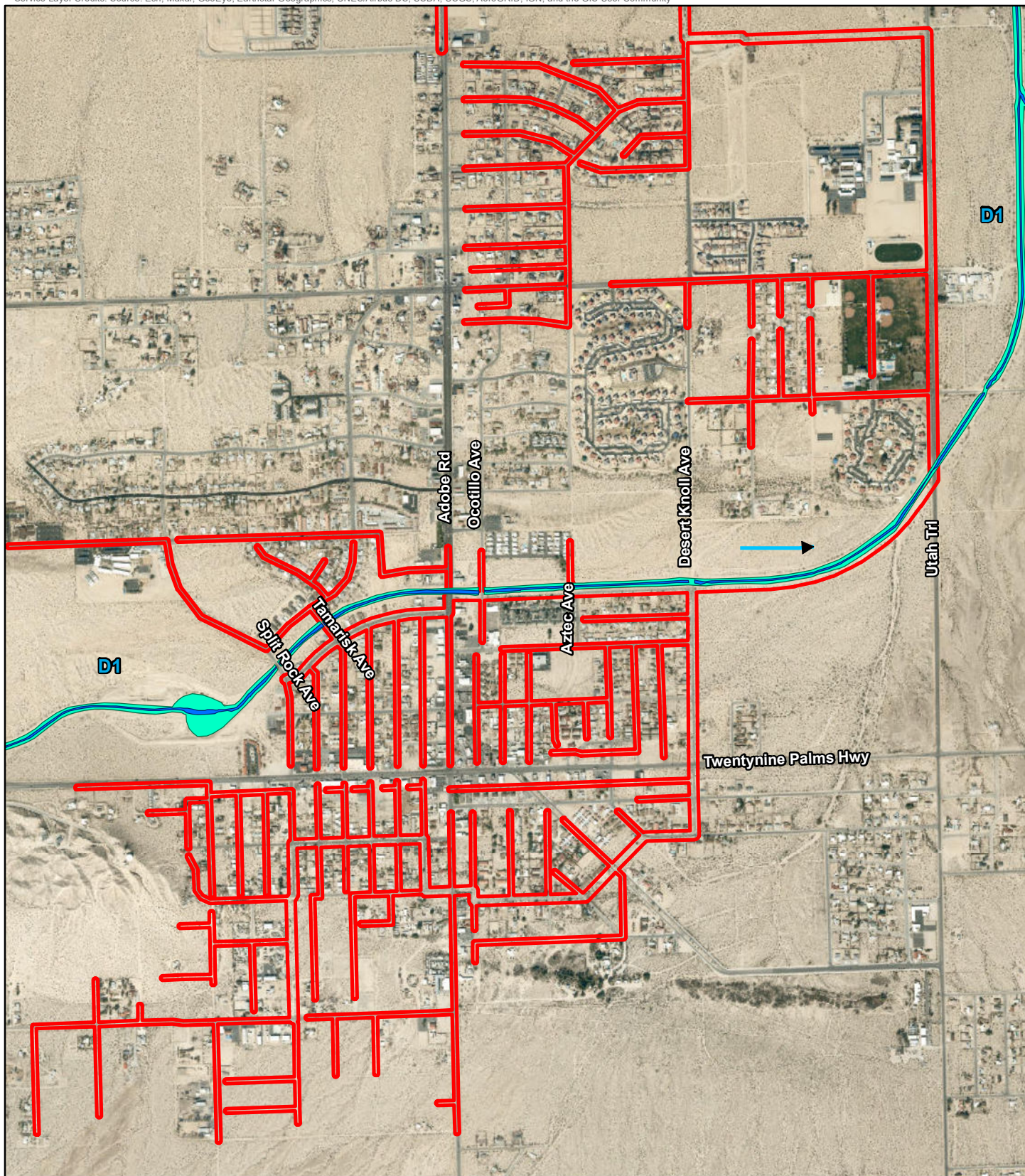
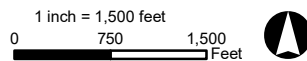
-  RWQCB
-  CDFW
-  Project Area
-  Flow Direction

FIGURE 5
Jurisdictional Delineation
Twentynine Palms Wastewater Collection System
Jurisdictional Delineation
Twentynine Palms, CA



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-  RWQCB
-  CDFW
-  Project Area
-  Flow Direction

FIGURE 6
Jurisdictional Delineation
Twentynine Palms Wastewater Collection System
Jurisdictional Delineation
Twentynine Palms, CA

APPENDIX B – SITE PHOTOGRAPHS



Photo 1. D1 looking northeast showing lack of OHWM due to maintenance activity.



Photo 2. Looking northeast at the Adobe Road Bridge over D1. No the vegetation consists of a single smoke tree.



Photo 3. Arizona crossing of D1 looking northwest.



Photo 4. Looking northeast showing D2 with disturbance in the bottom of the channel from off-roading.

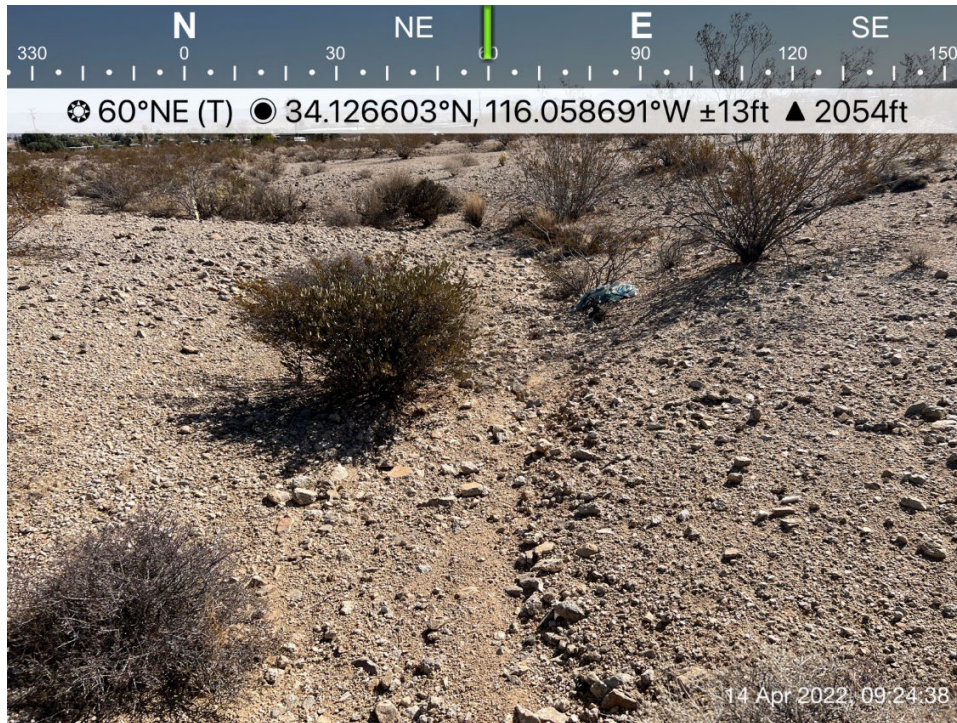


Photo 5. Looking northwest at one of the small drainages in the southwest portion of the survey area. These drainages were found to be non-jurisdictional.



Photo 6. Looking south showing playa/hummocks area in the north of the survey area. This area was determined to be non-jurisdictional.

APPENDIX CJURISDICTIONAL FORMS

APPENDIX D – REGULATORY FRAMEWORK

REGULATORY FRAMEWORK

U.S. Army Corps of Engineers

The USACE regulates the discharge of dredged or fill material in waters of the United States (WUS) pursuant to Section 404 of the CWA.

Waters of the U.S.

CWA regulations (33 CFR 328.3(a)) define WUS as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters: (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as WUS under the definition;
5. Tributaries of WUS;
6. The territorial seas;
7. Wetlands adjacent to WUS (other than waters that are themselves wetlands).

The USACE delineates non-wetland waters in the Arid West Region by identifying the ordinary high-water mark (OHWM) in ephemeral and intermittent channels (USACE 2008a). The OHWM is defined in 33 CFR 328.3(e) as:

“...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.”

Identification of OHWM involves assessments of stream geomorphology and vegetation response to the dominant stream discharge. Determining whether any non-wetland water is a jurisdictional WUS involves further assessment in accordance with the regulations, case law, and clarifying guidance as discussed below.

Wetlands and Other Special Aquatic Sites

Wetlands are defined at 33 CFR 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in

saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.”

Special aquatic sites are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region. Special aquatic sites include sanctuaries and refuges, wetlands, mud flats, vegetated shallows, coral reefs, and riffle and pool complexes. They are defined in 40 CFR 230 Subpart E.

Supreme Court Decisions

Solid Waste Agency of Northern Cook County

On January 9, 2001, the Supreme Court of the United States issued a decision on Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et al. with respect to whether the USACE could assert jurisdiction over isolated waters. The Solid Waste Agency of North Cook County (SWANCC) ruling stated that the USACE does not have jurisdiction over “non-navigable, isolated, intrastate” waters.

Rapanos/Carabell

In the Supreme Court cases of Rapanos v. United States and Carabell v. United States (herein referred to as Rapanos), the court attempted to clarify the extent of USACE jurisdiction under the CWA. The nine Supreme Court justices issued five separate opinions (one plurality opinion, two concurring opinions, and two dissenting opinions) with no single opinion commanding a majority of the Court. In light of the Rapanos decision, the USACE will assert jurisdiction over a traditional navigable waterway (TNW), wetlands adjacent to TNWs, non-navigable tributaries of TNWs that are a relatively permanent waterway (RPW) where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months) and wetlands that directly abut such tributaries. The USACE will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a TNW: non-navigable tributaries that are not relatively permanent, wetlands adjacent to non-navigable tributaries that are not RPWs, and wetlands adjacent to but that do not directly abut a non-navigable RPW.

Flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary indicate whether they significantly affect the chemical, physical and biological integrity of downstream TNWs. Analysis of potentially jurisdictional streams includes consideration of hydrologic and ecologic factors. The consideration of hydrological factors includes volume, duration, and frequency of flow, proximity to traditional navigable waters, size of watershed, average annual rainfall, and average annual winter snow pack. The consideration of ecological factors also includes the ability for tributaries to carry pollutants and flood waters to a TNW, the ability of a tributary to provide aquatic habitat that supports a TNW, the ability of wetlands to trap and filter pollutants or store flood waters, and maintenance of water quality.

2015 Clean Water Rule

The federal government issued the Clean Water Rule in 2015 in order to resolve jurisdictional ambiguity resulting from previous Supreme Court decisions (i.e. SWANNC, Rapanos). On June 22, 2015, the USACE and EPA published the Clean Water Rule: Definition of “Waters of the United States”; Final Rule (40 CFR Parts 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401). The Clean Water Rule was put on hold by federal injunction in 2015 but was reinstated in California in August 2018. The Clean Water Rule was again put on hold by federal injunction in September 2019. The Clean Water Rule finds waters to be jurisdictional under the CWA as summarized below:

1. Jurisdictional by Rule: TNWs, Interstate Waters, Territorial Seas, and Impoundments of Jurisdictional Waters.
2. Tributaries: Waters characterized by the presence of physical indicators of flow, including bed and bank and OHWM, that contribute flow directly or indirectly to a waters listed in 1) above.
3. Connected Waters: Adjacent or neighboring waters that have a significant nexus to waters listed in 1) above.
4. Other Waters: waters that, individually or as a group, significantly affect the chemical, physical, or biological integrity of waters listed in 1) above.

2020 The Navigable Waters Protection Rule

On January 23, 2020, the Environmental Protection Agency (EPA) and the Department of the Army published a final rule called “The Navigable Water Protection Rule.”

In this final rule, the agencies interpret WUS to encompass:

- The territorial seas and traditional navigable waters;
- Perennial and intermittent tributaries that contribute surface water flow to such waters;
- Certain lakes, ponds, and impoundments of jurisdictional waters; and
- Wetlands adjacent to other jurisdictional waters.

The final rule excludes from the definition of WUS all waters or features not mentioned above, specifically clarifying that WUS do not include the following:

- groundwater, including groundwater drained through subsurface drainage systems;
- ephemeral features that flow only in direct response to precipitation, including ephemeral streams, swales, gullies, rills, and pools;
- diffuse stormwater runoff and directional sheet flow over upland;
- ditches that are not traditional navigable waters, tributaries, or that are not constructed in adjacent wetlands, subject to certain limitations;
- prior converted cropland;
- artificially irrigated areas that would revert to upland if artificial irrigation ceases;

- artificial lakes and ponds that are not jurisdictional impoundments and that are constructed or excavated in upland or non-jurisdictional waters;
- water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel;
- stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater run-off;
- groundwater recharge, water reuse, and wastewater recycling structures constructed or excavated in upland or in non-jurisdictional waters; and
- waste treatment systems.

This rule was published in the Federal Register on April 21, 2020 and went into effect 60 days after that date, on June 22, 2020.

2021 The Navigable Waters Protection Rule

On September 7, 2021, an Arizona court case vacated the June 22, 2020, Navigable Waters Protection Rule effectively reinstating the definition in effect prior to 2015. U.S. Environmental Protection Agency (EPA) and the USACE rewriting a new Navigable Waters Protection Rule to define “waters of the United States” (WOTUS) and should be submitted for review by early 2022.

Regional Water Quality Control Board

The RWQCB regulates activities pursuant to Section 401(a)(1) of the CWA. Section 401 of the CWA specifies that certification from the State is required for any applicant requesting a federal license or permit including a Section 404 permit. Through the Porter Cologne Water Quality Control Act, the RWQCB asserts jurisdiction over Waters of the State of California (WSC) which is generally the same as WUS but may also include waters not in federal jurisdiction.

The State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State was adopted in April 2020 and put into effect statewide on May 28, 2020 (State Water Resources Control Board, 2020).

The Water Boards define an area as wetland as follows:

An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area’s vegetation is dominated by hydrophytes or the area lacks vegetation.

The Water Code defines WSC broadly to include “any surface water or groundwater, including saline waters, within the boundaries of the state.” WSC include all WUS but also includes waters not in federal jurisdiction.

The following wetlands are waters of the state:

1. Natural wetlands,
2. Wetlands created by modification of a surface water of the state, and
3. Artificial wetlands that meet any of the following criteria:
 - a. Approved by an agency as compensatory mitigation for impacts to other waters of the state, except where the approving agency explicitly identifies the mitigation as being of limited duration;
 - b. Specifically identified in a water quality control plan as a wetland or other water of the state;
 - c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
 - d. Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (i.e., the following artificial wetlands are not waters of the state unless they also satisfy the criteria set forth in 2, 3a, or 3b):
 - i. Industrial or municipal wastewater treatment or disposal,
 - ii. Settling of sediment,
 - iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program,
 - iv. Treatment of surface waters,
 - v. Agricultural crop irrigation or stock watering,
 - vi. Fire suppression,
 - vii. Industrial processing or cooling,
 - viii. Active surface mining – even if the site is managed for interim wetlands functions and values,
 - ix. Log storage,
 - x. Treatment, storage, or distribution of recycled water, or
 - xi. Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or
 - xii. Fields flooded for rice growing.

All artificial wetlands that are less than an acre in size and do not satisfy the criteria set forth in 2, 3.a, 3.b, or 3.c are not WSC.

California Department of Fish and Wildlife

The CDFW regulates water resources under Section 1600-1616 of the California Fish and Game Code. Section 1602 states:

“An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake (CDFW, 2015).”

Evaluation of CDFW jurisdiction followed guidance in the Fish and Game Code and A Review of Stream Processes and Forms in Dryland Watersheds. In general, under 1602 of the Fish and Game Code, CDFW jurisdiction extends to the maximum extent or expression of a stream on the landscape (CDFW, 2010). It has been the practice of CDFW to define a stream as “a body of water that flows perennially or episodically and that is defined by the area in a channel which water currently flows or has flowed over a given course during the historic hydrologic course regime, and where the width of its course can reasonably be identified by physical or biological indicators” (Brady and Vyverberg, 2013). Thus, a channel is not defined by a specific flow event, nor by the path of surface water as this path might vary seasonally. Rather, it is CDFW's practice to define the channel based on the topography or elevations of land that confine the water to a definite course when the waters of a creek rise to their highest point.

Appendix F Desert Tortoise Survey Forms December 2022

Date of survey: 12 Dec 2022 Survey biologist(s): Nathan Moorhatch, Churnley, Green
(day, month, year) (name, email, and phone number)
 Site description: 29 Palms Sewer NW yard
(project name and size, general location)
 County: San Bernardino Quad: _____ Location: _____
(UTM coordinates, lat-long, and/or TRS, map datum)
 Circle one: 100% coverage or Sampling Area size to be surveyed: _____ Transect #: 1-9 Transect length: _____
 GPS Start-point: 34.16440°N - 116.04728°W Start time: 0745 am/pm
(easting, northing, elevation in meters)
 GPS End-point: 34.168461°N - 116.046677°W End time: 0845 am/pm
(easting, northing, elevation in meters)
 Start Temp: 36 °F End Temp: 39 °F

Live Tortoises

Detection number	GPS location Easting Northing		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
1						
2						
3				N/A		
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting Northing		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
1				
2				
3				N/A
4				
5				
6				
7				
8				

PHAI
CORA

Sceloporus inornatus
Atriplex canescens

Date of survey 12 Dec 2022 Survey biologist(s) Nathan Moorhous, Green, Crumley
(day, month, year) (name, email, and phone number)
 Site description: 29 Palms Sewer
(project name and size, general location)
 County San Bernardino Quad _____ Location NE YARD
(UTM coord. dates, at long and/or TRS map datum)
 Circle one 100% coverage of Sampling Area size to be surveyed _____ Transect # 1-12 Transect length: _____
 GPS Start-point: 34.165170°N -116.017732°W Start time 0901 am/pm
(easting, northing, elevation in meters)
 GPS End-point: 34.165177°N -116.018699°W End time 0932 am/pm
(easting, northing, elevation in meters)
 Start Temp. 41 °F End Temp. 41 °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location (in burrow, all of tortoise beneath plane of burrow opening, or not in burrow)	Approx MCL ≥130 mm? (check No. or Unknown)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3				N/A		
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (burrows, scats, carcass, etc)	Description and comments
	Easting	Northing		
1				
2				
3				N/A
4				
5				
6				
7				
8				

Date of survey: 12 Dec 2022 Survey biologist(s): Green, Moorhatch, Drumley
(day, month, year) (name, email, and phone number)
 Site description: 29 Palms Sewer
(project name and size, general location)
 County: San Bernardino Quad: _____ Location: E. Yard
(UTM coordinates, lat/long and/or TRS map datum)
 Circle one (100% coverage of Sampling Area size to be surveyed) Transect # 1-19 Transect length _____
 GPS Start-point: 34,150530°N -116.036338°W Start time: 0949 am/pm
(easting, northing, elevation in meters)
 GPS End-point: 34,150478°N -116.034575°W End time: 1015 am/pm
(easting, northing, elevation in meters)
 Start Temp: 41 °F End Temp: 39 °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow, all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL ≥180 mm? <small>(head to shell)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

N/A

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcasses, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

N/A

NOFL
EUST

Senegalia greggii

Date of survey: 12 Dec 2022 Survey biologist(s) Mearns, Green, Chumley
day month year name email and phone number
 Site description: 29 Palms Sewer
project name and site general location
 County: San Bernardino Quad: _____ Location: Pgs 15 & 16
UTM coordinates lat long and/or TRS map datum
 Circle one: 100% coverage of Sampling Area size to be surveyed _____ Transect #: _____ Transect length: _____
 GPS Start-point: 34.126335°N -116.0380630W Start time: 1238 am/pm
easting northing elevation in meters
 GPS End-point: _____ End time: _____ am/pm
easting northing elevation in meters
 Start Temp: 45 °F End Temp: _____ °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow, all of tortoise beneath plane of burrow opening or not in burrow)</small>	Approx MCL ≥180 mm? <small>(yes No or Unknown)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

Simmondsia chinensis (jojoba)
 SAPH
Lepus cal.
 Coyote (scat)

Tidestromia oblongifolia

Tort. Survey was only on the actual pipeline route

Date of survey: 13 Dec 2022 Survey biologist(s): M. Moser, Chumley, Wilcox
 Site description: 29 Palms Sewer
 County: San Bernardino Quad: _____ Location: Amboy Rd → E
 Circle one: 100% coverage of Sampling Area size to be surveyed: _____ Transect #: _____ Transect length: LONG
 GPS Start-point: 34.164960°N -116.035102°W Start time: 0752 am/pm
 GPS End-point: 34.165189°N -116.041070°W End time: 0938 am/pm
 Start Temp: 36 °F End Temp: 41 °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location (in burrow, all of tortoise beneath plane of burrow opening or other suitable)	Approx MCL ≥180 mm? (yes / no / unknown)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (burrows, scats, carcasses, etc)	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

Tigulia plicata RCKI
 RBGU (?) YRWA
 ROPI WCSP
 MODO

Date of survey: 13 Dec 2022 Survey biologist(s) N. Moorhead, Chumley, Wilcox
 Site description: 29 Palms Sewer
 County: San Bernardino Quad _____ Location E. Yard Buffer
 Circle one: 100% coverage of Sampling Area size to be surveyed _____ Transect # 1-6 Transect length: _____
 GPS Start-point: 34.150211°N -116.034141°W Start time 10:21 am/pm
 GPS End-point: 34.149763°N -116.034206°W End time 10:50 am/pm
 Start Temp. 39 °F End Temp. 39 °C

Live Tortoises

Detection number	GPS location		Time	Tortoise location (in burrow, all of tortoise beneath plane of burrow opening or not in burrow)	Approx MCL ≥180 mm? (Yes/No/Unknown)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (burrows, scats, carcasses, etc)	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

VERD

Datura wrightii

Date of survey: 13 Dec 2022 Survey biologist(s): M. Monahan, Churnley, Wilcox
(date, month, year) (name, email, and phone number)
 Site description: 29 Palms Sewer
(project name and size, general location)
 County San Bernardino Quad _____ Location S. of Ambury Rd on Utah Trail
(UTM coordinates, lat/long, and/or TFS grid datum)
 Circle one: 100% coverage of Sampling Area size to be surveyed _____ Transect # _____ Transect length: _____
 GPS Start-point: 34.163404°N -116.036636°W Start time: 1252 am/pm
(easting, northing, elevation in meters)
 GPS End-point: 34.158995°N -116.036648°W End time: 1308 am/pm
(easting, northing, elevation in meters)
 Start Temp: 51 °F End Temp: 51 °C

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow, all of tortoise beneath plane of burrow opening, or other location)</small>	Approx MCL ≥180 mm? <small>(Yes/No/Unknown)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3				N/A		
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcasses, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3			N/A	
4				
5				
6				
7				
8				

Date of survey: 14 Dec 2022 Survey biologist(s) J. GREEN, T. CHUMLEY, M. WILCOX, N. MOORHATCH, M. BUKOVAC, P. CLEVINGER
 Site description: 29 Palms Sewer MAP 13: NORTH TRANSECTS
 County: San Bernardino Quad: _____ Location: _____
 Circle one: 100% coverage of Sampling Area size to be surveyed: _____ Transect #: _____ Transect length: _____
 GPS Start-point: 34.142446 -116.045482 Start time: 0815 am/pm
 GPS End-point: 34.143029 -116.045412 End time: 0925 am/pm
 Start Temp: 37 °C End Temp: 46 °C

Live Tortoises

Detection number	GPS location		Time	Tortoise location (in burrow, all of tortoise beneath plane of burrow opening, or not in burrow)	Approx MCL ≥ 180 mm? (see Appendix)	Existing tag # and color, if present
	Easting	Northing				
1	N/A			NONE		
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (burrows, scats, carcasses, etc.)	Description and comments
	Easting	Northing		
1	N/A		NONE	
2				
3				
4				
5				
6				
7				
8				

GAQU

Date of survey: 14 Dec 2022 Survey biologist(s): J. GREEN, T. CHUMLEY, M. WILCOX, N. MOORHATCH, M. BUKOVAC, P. CLEVINGER

Site description: 29 Palms Sewer MAP 6

County: San Bernardino Quad: _____ Location: _____

Circle one (100% coverage) Sampling Area size to be surveyed: _____ Transect #: _____ Transect length: _____

GPS Start-point: 34.148603 -116.085056 Start time: 0945 am/pm

GPS End-point: 34.147180 -116.083060 End time: 1055 am/pm

Start Temp: 47 °C End Temp: 50 °C

Live Tortoises

Detection number	GPS location		Time	Tortoise location (in burrow, all of tortoise beneath plane of burrow opening, or not in burrow)	Approx MCL ≥180 mm? (Yes/No/Unknown)	Existing tag # and color, if present
	Easting	Northing				
1	N/A			NONE		
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (burrows, scats, carcasses, etc)	Description and comments
	Easting	Northing		
1	N/A		NONE	
2				
3				
4				
5				
6				
7				
8				

MGDS

SIDE BLOTCHED
JACK RABBIT

Date of survey: 14 Dec 2022 Survey biologist(s): J. GREEN, WILCOX, CHUMLEY, MOORHATCH, BUKOVAC, CLEVINGER
 Site description: 29 Palms Sewer MAP 7 + 11
 County: San Bernardino Quad: _____ Location: _____
 Circle one: 100% coverage of Sampling Area size to be surveyed: _____ Transect #: _____ Transect length: _____
 GPS Start-point: 34.156238 -116.072827 Start time: 13:20 am/pm
(easting, northing, elevation in meters)
 GPS End-point: 34.144012 -116.071644 End time: 1425 am/pm
(easting, northing, elevation in meters)
 Start Temp: 54 °F End Temp: 55 °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(indicate if all of tortoise beneath plane of burrow opening or not if burrow)</small>	Approx MCL ≥180 mm? <small>(Yes/No/Unknown)</small>	Existing tag # and color, if present
	Easting	Northing				
1	N/A			NONE		
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcasses, etc)</small>	Description and comments
	Easting	Northing		
1	N/A		NONE	
2				
3				
4				
5				
6				
7				
8				

Date of survey: 14 Dec 2022 Survey biologist(s): J. GREEN, WILCOX, CHUMLEY, MOORMATCH, BUKOVAC, CLEVINGER
 Site description: 29 Palms Sewer MAP 10 & 11
 County: San Bernardino Quad _____ Location _____
 Circle one 100% coverage of Sampling Area size to be surveyed _____ Transect #: _____ Transect length: _____
 GPS Start-point: 34.141621 -116.078475 Start time: 1220 am/pm
 GPS End-point: 34.142391 -116.078614 End time: 1300 am/pm
 Start Temp: 52 °C End Temp: 53 °C

Live Tortoises

Detection number	GPS location		Time	Tortoise location (in burrow; all of tortoise beneath plane of burrow opening; or tortoise visible)	Approx MCL ≥180 mm? (see Note 1 on datasheet)	Existing tag # and color, if present
	Easting	Northing				
1	N/A			NONE		
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (burrows, scats, carcasses, etc)	Description and comments
	Easting	Northing		
1	N/A		NONE	
2				
3				
4				
5				
6				
7				
8				

Date of survey: 14 Dec 2022 Survey biologist(s): J. GREEN, T. CHUMLEY, M. WILCOX, N. MOORHATCH, M. BUKOVAC, P. CLEVINGER
 Site description: 29 Palms Sewer SE YARD: BUFFERS + ACCESS RD.
 County: San Bernardino Quad: _____ Location: _____
 Circle one 100% coverage of Sampling Area size to be surveyed: _____ Transect #: _____ Transect length: _____
 GPS Start-point: 34.139440 -116.045436 Start time: 0735 am/pm
(easting, northing, elevation in meters)
 GPS End-point: 34.139457 -116.043826 End time: 0805 am/pm
(easting, northing, elevation in meters)
 Start Temp 35 °F End Temp 37 °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location <small>(in burrow, all of tortoise beneath plane of burrow opening, all tortoise outside)</small>	Approx MCL ≥180 mm? <small>(use <i>Neot. lewisorum</i>)</small>	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

ANHU
NOFL

Date of survey: 15 Dec 2022 Survey biologist(s): Jim CHUMLEY
(day, month, year) (name, email, and phone number)

Site description: 29 Palms Sewer
(project name and size, general location)

County: San Bernardino Quad: _____ Location: _____
(UTM coordinates, lat-long, and/or TRS map datum)

Circle one: 100% coverage of Sampling Area size to be surveyed: _____ Transect #: _____ Transect length: _____

GPS Start-point: 34 145499 -116.089486 Start time: 0735 am
(easting, northing, elevation in meters)

GPS End-point: 34 132654 -116.036792 End time: 1045 pm
(easting, northing, elevation in meters)

Start Temp: 38 °F End Temp: 49 °F

Live Tortoises

Detection number	GPS location Easting Northing	Time	Tortoise location <small>(in burrow, all of tortoise beneath plane of burrow opening or not in burrow)</small>	Approx MCL ≥180 mm? <small>(Yes, No or Unknown)</small>	Existing tag # and color, if present
1					
2					
3					
4					
5					
6					
7					
8					

TWC 12/15/22

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting Northing	Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
1			
2			
3			
4			
5			
6			
7			
8			

TWC 12/15/22

NCSW
 modo
 CORA
 NOMO
 CONA
 BRBL

HOFI

Sunnyslope W end
 Sunnyslope W end
 Sunnyslope/Datura
 Clare
 Bagley/Sunnyslope/Sunnyslope
 Howard
 Adobe/South Slope/Ocotillo
 Desert Knoll
 Utah south side

**WASTEWATER COLLECTION SYSTEM, PHASES 1 AND 2
BIOLOGICAL RESOURCES ASSESSMENT**



CITY OF TWENTYNINE PALMS, SAN BERNARDINO COUNTY, CALIFORNIA

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19 January 2023

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1.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, Inc. (Wood) was contracted by Terra Nova Planning and Research to conduct a biological resources assessment at the site of Phases 1 and 2 of a proposed wastewater collection system project (project) in Twentynine Palms, San Bernardino County, California. This biological resources assessment report (BRAR) provides methods, results, and discussion of the assessment.

1.1 Project Location and Topography

The project is entirely within the City of Twentynine Palms, San Bernardino County, California (see Figure 1). It is located primarily on the 7.5-minute Twentynine Palms, Calif. United States Geological Survey (USGS) quadrangle extending slightly south into the Queen Mountain, Calif. USGS quadrangle. It is in Township 1 North, Range 9 East, in portions of Sections 15, 16, 20-22, 27-29, 32 and 33 (see Figure 2). Project topography is roughly level overall, with some low hills in the southwestern area. Elevations range from approximately 1,795 feet (547 meters) in the northeast to 2,140 feet (652 meters) in the southwest. The land within the study area generally slopes from the southwest to the northeast (NV5 2022).

1.2 Project Description

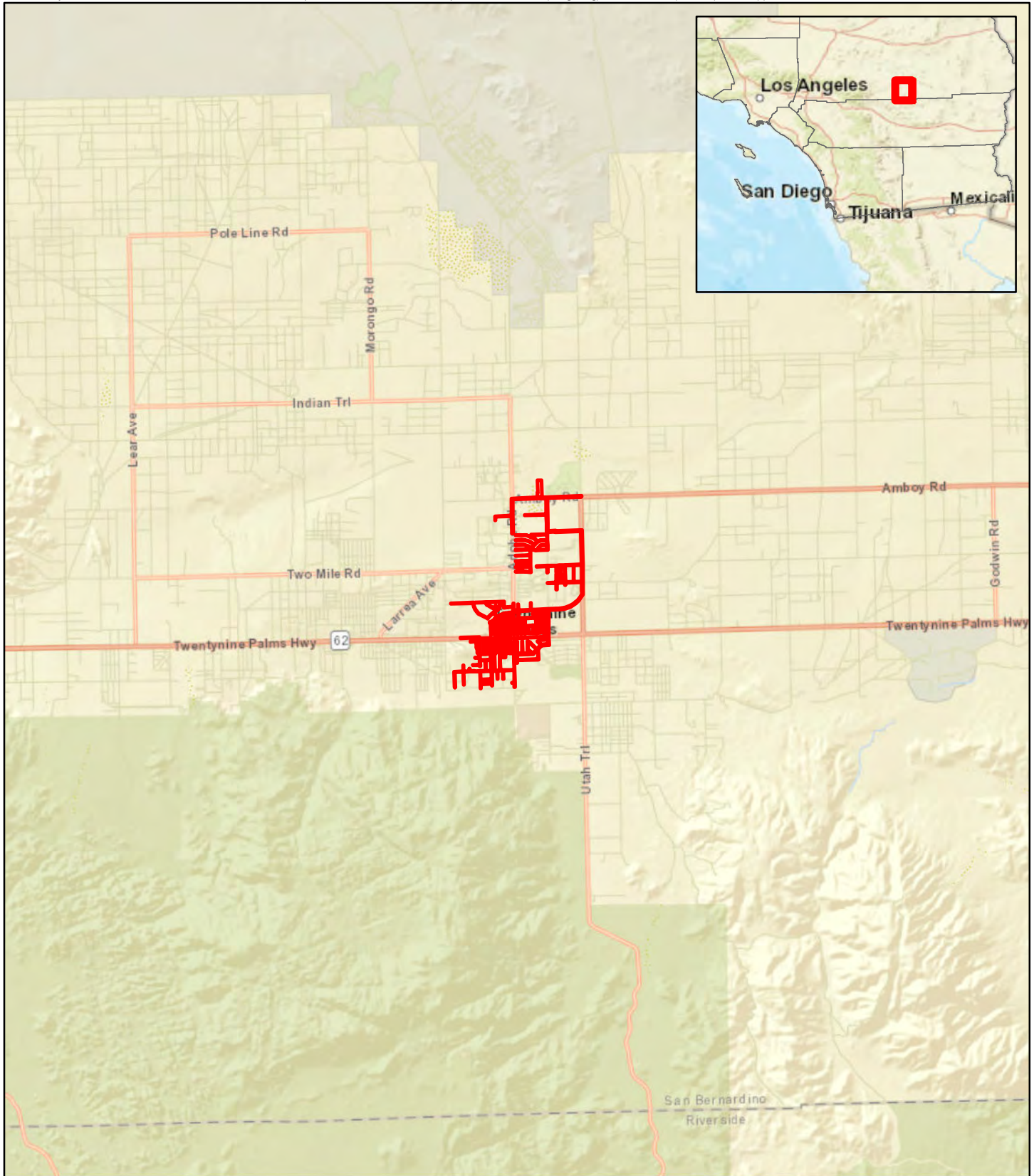
Phase 1 includes:

- Trunk sewers for Phase 1.
- Collector sewers for Phase 1.
- Two existing package treatment plants for the Turtle Rock and Desert Knoll Developments.
- The two large dense military housing developments on Two Mile Road and Joe Davis Drive.
- The residential area northeast of the Adobe Road – Two Mile Road intersection.
- The commercial area on Adobe Road and Amboy Road north of Samarkand Drive.

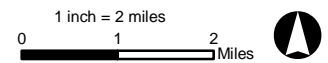
Phase 2 includes:

- Trunk sewers for Phase 2.
- Collector sewers for Phase 2.
- Two planned package treatment plants for project Phoenix and the Wander Hotel.
- The dense downtown area east of Donnell Hill. This area has a balanced mix of both residential and commercial land use.

A potential wastewater treatment plant (WWTP) Site 1 is also included. See Figure 3 for a project overview.



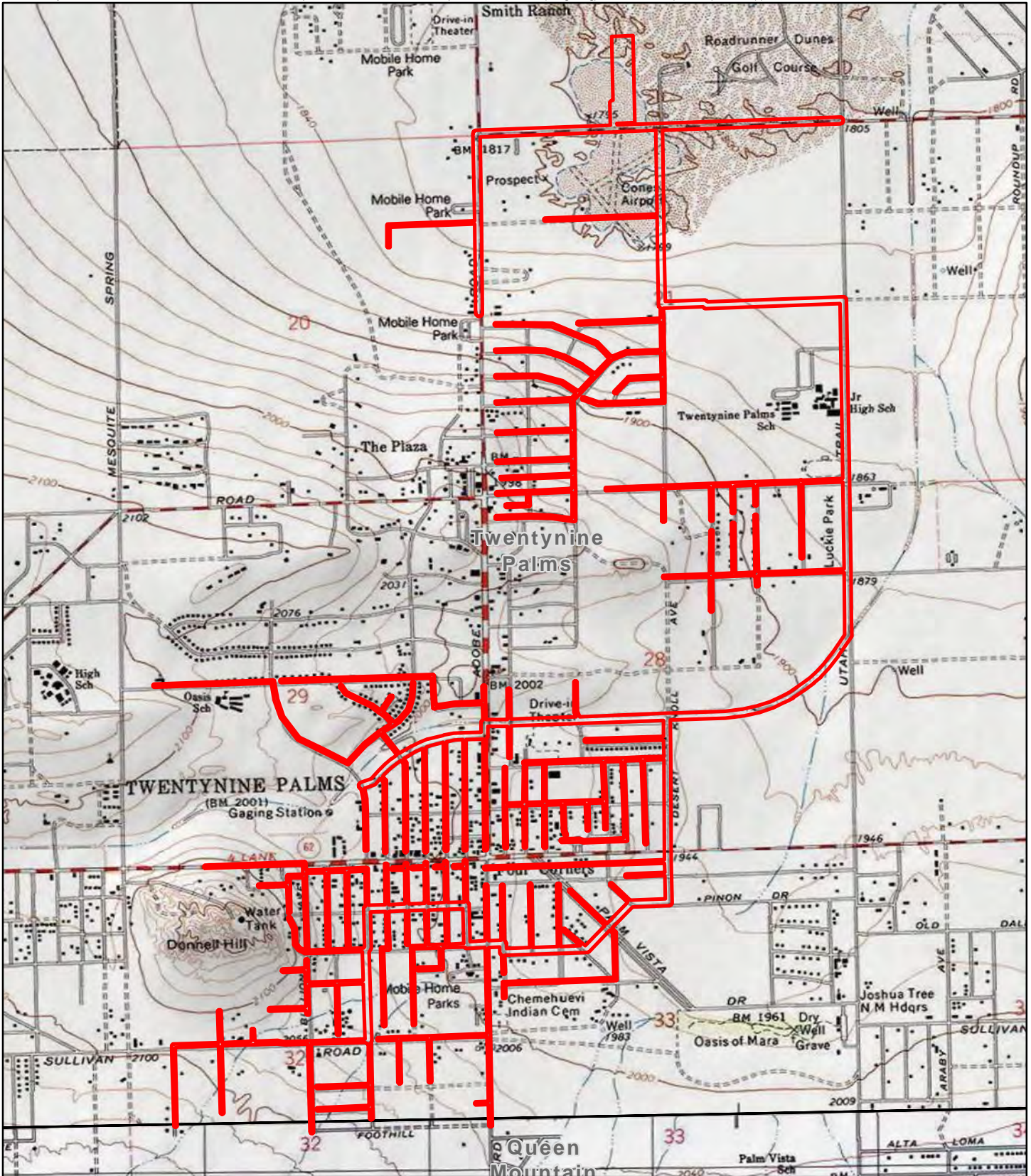
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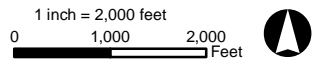
 Project Area

FIGURE 1
Regional Vicinity
Twentynine Palms Sanitation
Sewer Trunk Line Project
Twentynine Palms, CA

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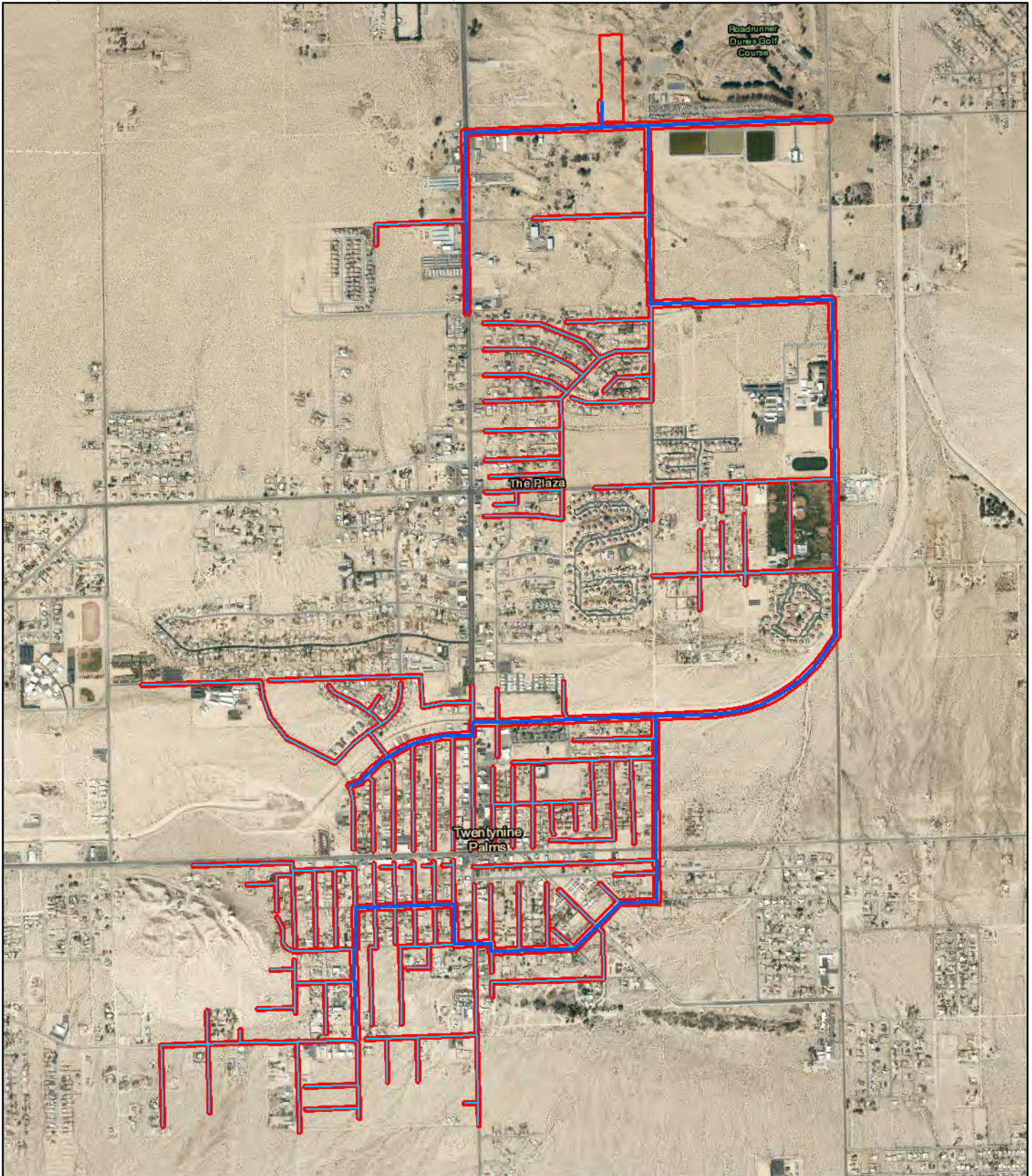
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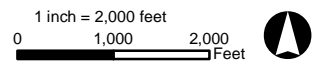
 Project Area

FIGURE 2
USGS 7.5" Topo Quad: Twentynine Palms
Twentynine Palms Sanitation
Sewer Trunk Line Project
Twentynine Palms, CA

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-  Proposed Trunk Sewer
-  Proposed Collector Sewer
-  Project Area

FIGURE 3
Project Overview
Twentynine Palms Sanitation
Sewer Trunk Line Project
Twentynine Palms, CA

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2.0 REGULATORY FRAMEWORK

2.1 Federal

Endangered Species Act (ESA) – The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service are the designated federal agencies accountable for administering the ESA. The ESA defines species as “endangered” or “threatened” and provides regulatory protection at the federal level.

- Section 9 of the ESA prohibits the “take” of listed (i.e., endangered or threatened) species. The ESA definition of take is “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct.” Recognizing that take cannot always be avoided, Section 10(a) includes provisions for take that is incidental to, but not the purpose of, otherwise lawful activities. Specifically, Section 10(a) (1) (A) permits (authorized take permits) are issued for scientific purposes. Section 10(a) (1) (B) permits (incidental take permits) are issued for the incidental take of listed species that does not jeopardize the species.
- Section 7 (a) (2) requires federal agencies to evaluate the proposed project with respect to listed or proposed listed, species and their respective critical habitats (if applicable). Federal agencies must employ programs for the conservation of listed species and are prohibited from authorizing, funding, or carrying out any action that would jeopardize a listed species or destroy or modify its “critical habitat.”

As defined by the ESA, “individuals, organizations, states, local governments, and other non-federal entities are affected by the designation of critical habitat only if their actions occur on federal lands, require a federal permit, license, or other authorization, or involve federal funding.

Migratory Bird Treaty Act (MBTA) – Treaties signed by the U.S., Great Britain, Mexico, Japan, and the republics of the former Soviet Union make it unlawful to pursue, capture, kill, and/or possess, or attempt to engage in any such conduct to any migratory bird, nest, egg or parts thereof listed in this document. As with the ESA, the MBTA also allows the Secretary of the Interior to grant permits for the incidental take of these protected migratory bird species. Impacts include direct disturbance to/destruction of nests, eggs, and birds as well as indirect effects such as loud construction noises (e.g., drilling, operation of heavy equipment, etc. in excess of 60 dB at the nest site) and increased site activities (e.g., moving vehicles, use of guard dogs, presence of personnel) in close proximity to active nests.

National Environmental Policy Act (NEPA) – Portions of the proposed project could fall under the jurisdiction of a federal agency (i.e., U.S. Army Corps of Engineers). The NEPA establishes certain criteria that must be adhered to for any project that is “financed, assisted, conducted or approved by a federal agency. The federal lead agency is required to “determine whether the proposed action will significantly affect the quality of the human environment.”

Section 404 of the Clean Water Act (CWA) – This section of the CWA, administered by the U.S. Army Corps of Engineers (USACE), regulates the discharge of dredged and fill material into “waters of the United States.” The USACE has created a series of nationwide permits that authorize certain activities within waters of the U.S. provided that the proposed activity does not exceed the impact threshold for each of the permits, takes steps to avoid impacts to wetlands where practicable, minimize potential impacts to wetlands, and provide compensation for any remaining, unavoidable impacts through activities to restore or create wetlands. For projects that exceed the threshold for nationwide permits, individual permits under Section 404 can be issued.

2.2 State of California

Regional Water Quality Control Board – The Regional Water Quality Control Board (RWQCB) regulates activities pursuant to Section 401(a)(1) of the CWA. Section 401 of the CWA specifies that certification from the State is required for any applicant requesting a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities that may result in any discharge into navigable waters. Through the Porter Cologne Water Quality Control Act, the RWQCB asserts jurisdiction over Waters of the State of California (WSC) which is generally the same as WUS, but may also include isolated waterbodies. The Porter Cologne Act defines WSC as “surface water or ground water, including saline waters, within the boundaries of the state”.

Sections 1600-1603 of the State Fish and Game Code – The California Fish and Game Code, pursuant to Sections 1600 through 1603, regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife resources. Under state code, a stream is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel with hydro geomorphology distinct top-of-embankment to top-of-embankment limits, that may or may not support fish or other aquatic biota. Included in this definition are watercourses with surface or subsurface flows that support, or have supported in the past, riparian vegetation. Specifically, Section 1601 governs public projects, while Section 1603 governs private discretionary actions. The California Department of Fish and Wildlife (CDFW) requires that public and private interests apply for a “Streambed Alteration Agreement” for any project that may impact a streambed or wetland. The CDFW has maintained a “no net loss” policy regarding impacts to streams and waterways and requires replacement of lost habitats of at least a 1:1 ratio.

California Endangered Species Act (CESA) – This legislation is similar to the federal ESA, however it is administered by the CDFW. The CDFW is authorized to enter into “memoranda of understanding” with individuals, public agencies, and other institutions to import, export, take, or possess state-listed species for scientific, educational, or management purposes. The CESA prohibits the take of state-listed species except as otherwise provided in state law. Unlike the

federal ESA, the CESA applies the take prohibitions to species currently petitioned for state-listing status (candidate species). State lead agencies are required to consult with the CDFW to ensure that actions are not likely to jeopardize the continued existence of any state-listed species or result in the destruction or degradation of occupied habitat.

Section 2081 of the State Fish and Game Code – Under Section 2081 of the California Fish and Game Code, the CDFW authorizes individuals or public agencies to import, export, take, or possess state endangered, threatened, or candidate species in California through permits or memoranda of understanding. These acts, which are otherwise prohibited, may be authorized through permits or “memoranda of understanding” if (1) the take is incidental to otherwise lawful activities, (2) impacts of the take are minimized and fully mitigated, (3) the permit is consistent with regulations adopted in accordance with any recovery plan for the species in question, and (4) the applicant ensures suitable funding to implement the measures required by the CDFW. The CDFW shall make this determination based on the best scientific information available and shall include consideration of the species’ capability to survive and reproduce.

California Environmental Quality Act (CEQA) – The basic goal of the CEQA is to retain a high-quality environment now and in the future. The specific goals are for California's public agencies to:

- Identify the significant environmental effects of their actions; and, either
- Avoid those significant environmental effects, where feasible; or
- Mitigate those significant environmental effects, where feasible.

The CEQA applies to "projects" proposed to be undertaken or requiring approval by State and/or local governmental agencies. projects are activities which have the potential to have a physical impact on the environment and may include the enactment of zoning ordinances, the issuance of conditional use permits and the approval of tentative subdivision maps. Where a project requires approvals from more than one public agency, the CEQA requires one of these public agencies to serve as the "lead agency."

A "lead agency" must complete the environmental review process required by the CEQA. The most basic steps of the environmental review process are:

- Determine if the activity is a "project" subject to the CEQA;
- Determine if the "project" is exempt from the CEQA;
- Perform an Initial Study to identify the environmental impacts of the project and determine whether the identified impacts are "significant". Based on its findings of "significance", the lead agency prepares one of the following environmental review documents:
 - Negative Declaration if it finds no "significant" impacts;

- Mitigated Negative Declaration if it finds "significant" impacts but revises the project to avoid or mitigate those significant impacts;
- Environmental Impact Report (EIR) if it finds "significant" impacts.

While there is no ironclad definition of "significance", Article 5 of the CEQA Guidelines provides criteria to lead agencies in determining whether a project may have significant effects.

The purpose of an EIR is to provide state and local agencies and the public with detailed information on the potentially significant environmental effects which a proposed project is likely to have and to provide ways in which those effects may be minimized and indicate alternatives to the project.

Sections of the State Fish and Game Code pertaining to the protection of birds – Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3505.5 makes it unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds-of-prey, i.e.: owls, hawks, eagles, etc.) or to take, possess, or destroy the nest or eggs of any bird-of-prey. Section 3513 makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA.

The Native Plant Protection Act (NPPA) – The NPPA includes measures to preserve, protect, and enhance rare and endangered native plant species. Definitions for "rare and endangered" are different from those contained in the CESA. However, the list of species afforded protection in accordance with the NPPA includes those listed as rare and endangered under the CESA. The NPPA provides limitations on take as follows: "no person will import into this state, or take, possess, or sell within this state" any rare or endangered native plants, except in accordance with the provisions outlined in the act. If a landowner is notified by the CDFW, pursuant to section 1903.5 that a rare or endangered plant species is growing on their property, the landowner shall notify the CDFW at least 10 days prior to the changing of land uses to allow the CDFW to salvage the plants.

3.0 METHODS

3.1 Literature Review and Records Search

A literature review and record search were conducted to identify occurrences of special status biological resources in the project vicinity. The review included:

- A report from the CDFW's California Natural Diversity Data Base (CNDDDB) for a five-mile radius of the project site (CDFW 2022),
- The California Native Plant Society (CNPS) including records from the following California USGS 7.5-minute topographic quadrangles within five miles of the project: 29 Palms, Queen Mountain, Sunfair, Indian Cove, 29 Palms Mountain, and Valley Mountain (CNPS 2022),
- The USFWS (2022a) Environmental Conservation Online System (ECOS) including critical habitat mapping and an Information for Planning and Consultation (IPaC) report.
- Aerial photographs, and
- Pertinent documents from the Wood library and project files (*e.g.*, other biological surveys from the general vicinity).

3.2 Biological Resources Assessment

Field reconnaissance surveys were conducted by Wood Senior Biologist John F. Green on 22 and 28 March 2022 to evaluate the suitability of existing habitat onsite to support special status biological resources. The assessment conducted on 22 March focused on the trunk lines and a 50-foot buffer on either side and occurred from 1020 to 1510 hours. The 28 March assessment focused on the collector lines and a 25-foot buffer on either side and occurred from 1025 to 1420 hours. The WWTP site was evaluated on 21 December 2022. Green drove the alignments, stopping and walking as necessary, to identify habitats, dominant plant species, and wildlife. All observations were recorded in field notes. Representative photos were taken and are included in Appendix C.

4.0 RESULTS

4.1 Literature Review

The results of the literature review are presented in Tables 1 and 2, along with the results of focused surveys conducted to date. Species which are not known to occur at project elevations are not included.

Table 1. Special Status Plants & Vegetation Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status ¹			Habitat (for plants includes elevational range in meters & blooming period)	Occurrence Probability ²
		Federal	State	CRPR		
Plants						
<i>Ayenia compacta</i>	California ayenia	None	S3	2B.3	Mojavean & Sonoran desert scrub, rocky. 150 - 1095 meters (m). Blooms (B): March - April.	Low-Absent Not found by focused survey
<i>Calochortus striatus</i>	alkali mariposa-lily	None	S2S3	1B.2	Chaparral, chenopod scrub, meadows and seeps, Mojavean desert scrub, alkaline, mesic. 70 - 1595 m. B: April - June.	Low-Absent Not found by focused survey CNDDDB records on project site.
<i>Coryphantha alversonii</i>	Alverson's foxtail cactus	None	S3	4.3	Mojavean and Sonoran desert scrub, usually in granitic areas, sometimes rocky or sandy. 75 - 1525 m. B: April - June (September -October).	Occurs Found during April focused survey.
<i>Eschscholzia androuxii</i>	Joshua tree poppy	None	S3	4.3	Joshua tree "woodland", Mojavean desert scrub on flats, gravelly, rocky, sandy, slopes, washes. 585 - 1685 m. B: February -May (June).	Low-Absent Not found by focused survey
<i>Funastrum utahense</i>	Utah vine milkweed	None	S4	4.2	Mojavean and Sonoran desert scrub, sometimes in gravelly or sandy. 100 - 1435 m. B: (March) April - June (September - October).	Occurs Found during April focused survey.
<i>Galium angustifolium ssp. gracillimum</i>	slender bedstraw	None	S4	4.2	Joshua tree "woodland" and Sonoran desert scrub in granitic or rocky places. 130 - 1550 m. B: April -June (July).	Low-Absent Not found by focused survey.
<i>Grusonia parishii</i>	Parish's club-cholla	None	S2	2B2	Mojavean and Sonoran desert scrub, Joshua tree "woodland" in sandy or rocky locations. 300-1,524m. B: May-July.	Low-Absent Not found by focused survey
<i>Jaffueliobryum raii</i>	Rau's jaffueliobryum moss	None	S2	2B.3	Alpine dwarf scrub, chaparral, & Mojavean and Sonoran desert scrub. Known from dry places, carbonate, openings, and rock crevices. 490 - 2100 m.	Low-Absent Not found by focused survey

Table 1. Special Status Plants & Vegetation Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status¹			Habitat (for plants includes elevational range in meters & blooming period)	Occurrence Probability²
		Federal	State	CRPR		
<i>Jaffueliobryum wrightii</i>	Wright's jaffueliobryum moss	None	S2S3	2B.3	Chaparral, Mojavean & Sonoran desert scrub, Alpine dwarf scrub. Openings: dry places, rock crevices, carbonate. 160-2500 m.	Low-Absent Not found by focused survey
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	None	S2	1B.1	Marshes and swamps, playas, vernal pools. 1 - 1220 m. B: February - June.	Low-Absent Not found by focused survey CNDDDB records on project site.
<i>Linanthus maculatus</i> ssp. <i>maculatus</i>	Little San Bernardino Mountains linanthus	None	S2	1B.2	Desert dunes, Sonoran and Mojavean desert scrub, Joshua tree "woodland." Sandy places. Usually in light-colored quartz sand; often in wash or bajada. 140 - 1220 m. B: March-May	Low-Absent Not found by focused survey
<i>Matelea parvifolia</i>	spear-leaf matelea	None	S3	2B.3	Rocky places in Mojavean and Sonoran desert scrub. 440 - 1095 m. B: March -May (July).	Low-Absent Not found by focused survey
<i>Monardella robisonii</i>	Robison's monardella	None	S3	1B.3	Pinyon-juniper woodland. 610 - 1,500 m., B: (February) April - September (October).	Absent. No suitable habitat.
<i>Muhlenbergia appressa</i>	appressed muhly	None	S3	2B.2	Coastal scrub, Mojavean desert scrub, valley and foothill grassland in rocky places. 20 - 1600 m. B: April - May.	Low-Absent Not found by focused survey
<i>Penstemon thurberi</i>	Thurber's beardtongue	None	S3	4.2	Chaparral, Joshua tree "woodland", Sonoran desert scrub, Pinyon-juniper woodland. 500 - 1220 m. B: May-July.	Low-Absent Not found by focused survey
<i>Saltugilia latimeri</i>	Latimer's woodland-gilia	None	S3	1B.2	Chaparral, Mojavean desert scrub, pinyon-juniper woodland. 400-1,900m. B: March-June	Low-Absent Not found by focused survey
<i>Sidalcea neomexicana</i>	salt spring checkerbloom	None	S2	2B.2	Chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, playas. 15 - 1530 m. B: March - June.	Low-Absent Not found by focused survey CNDDDB records on project site.
<i>Tetracoccus hallii</i>	Hall's tetracoccus	None	S4	4.3	Mojavean and Sonoran desert scrub. 30 - 1200 m. B: January - May.	Low-Absent Not found by focused survey
<i>Wislizenia refracta</i> ssp. <i>refracta</i>	jackass-clover	None	S1	2B.2	Desert dunes, playas, Mojavean and Sonoran desert scrub. 600 - 800 m. B: April - November.	Low-Absent Not found by focused survey
<i>Yucca brevifolia</i>	western Joshua tree	None	SCT	None	Mojavean desert scrub, Joshua tree "woodland."	Absent Not found during any survey.
Vegetation Communities						
Desert Fan Palm Oasis Woodland	Not applicable (N/A)	N/A	S3.2	N/A	N/A	Absent Landscaping palms & their seedlings present, but no palm oasis within the project area.

Table 2. Special Status Wildlife Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status ¹			Habitat	Occurrence Probability ²
		Federal	State	Other		
Invertebrates						
<i>Danaus plexippus</i>	Monarch	FC	S2S3	N/A	Western winter roost sites primarily occur along the coast from northern Mendocino to Baja California, Mexico, located in wind-protected tree groves (<i>Eucalyptus</i> species, Monterey pine (<i>Pinus radiata</i>), cypress), with nectar and water sources nearby. During breeding season, adults widespread but scarce in the desert. Larvae require milkweed.	Low Seldom seen in the desert, but milkweed is present onsite.

Table 2. Special Status Wildlife Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status ¹			Habitat	Occurrence Probability ²
		Federal	State	Other		
<i>Rhopalolemma robertsi</i>	Roberts' rhopalolemma bee	None	S1	N/A	<p>Roberts' rhopalolemma bee is the only <i>Rhopalolemma</i> species known from California. Only two species are known; the second, <i>R. rotundiceps</i>, was described from Arizona in 1997. The known range of Roberts' rhopalolemma bee is the type locality five miles south of the project area. Despite at least 70 years of collecting in the area by many active solitary bee specialists, the species is only known from a single specimen from that location.</p> <p>Specific habitat information was not recorded for this species when collected. In Arizona, <i>R. rotundiceps</i> was collected and studied in a shallow wash in a creosote-bush scrub, and collected in three other desert localities.</p> <p>Bees in this group (cleptoparasitic Nomadinae) do not excavate their own nests or collect pollen for their larvae. Instead, the females enter the nests of pollen-collecting species and lay their eggs in the open, unfinished cells while the host females are absent. While the host species of Roberts' rhopalolemma bee is unknown, all known host associations for bees in the tribe Biastini, to which <i>Rhopalolemma</i> belongs, involve halictid bees in the subfamily Rhophitinae, so the host of Roberts' rhopalolemma bee is likely a member of that subfamily as well.</p> <p>Adult cleptoparasitic bees take nectar from flowers, but no floral association is known for Roberts' rhopalolemma bee. <i>R. rotundiceps</i> has been taken on <i>Phacelia</i>. (CDFG 2022).</p>	<p>Unknown</p> <p>The genus is known from creosote bush scrub and for feeding on <i>Phacelia</i>, both of which occur onsite, but no specific natural history information is known for this species. Given the long period in which nobody has successfully detected it (since 1973), the possibility of occurrence onsite is expected to be very low.</p>

Table 2. Special Status Wildlife Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status ¹			Habitat	Occurrence Probability ²
		Federal	State	Other		
Reptiles						
<i>Crotalus ruber</i>	red-diamond rattlesnake	None	SC, S3	N/A	Chaparral, woodland, grassland, & desert areas. Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks or surface cover objects.	Low Few, if any, natural rocky areas onsite.
<i>Gopherus agassizii</i>	desert tortoise	FT	ST , S2S3	N/A	Prefers Joshua tree, desert wash & scrub (especially creosote bush) habitats; but in most desert habitats. Large wildflower blooms preferred. Burrows & nests require friable soil.	Absent (in project footprint) Not found by focused survey, but could occur in surrounding area (1990-1991 records to immediate west of project).
Birds						
<i>Accipiter cooperii</i>	Cooper's hawk	MBTA	WL, S4, FGC	N/A	Woodland, chiefly of open, interrupted, or marginal type, including residential areas. Nests in trees.	Occurs Incidentally detected during April surveys. May breed in areas with large trees.
<i>Athene cunicularia</i>	burrowing owl	MBTA, BCC	SC, S3, FGC	N/A	Open, dry grasslands, deserts & scrublands with low-growing vegetation. Depends on burrowing mammals.	Low Not detected during first survey.
<i>Calypte costae</i>	Costa's hummingbird	MBTA, BCC	S4, FGC	N/A	Primary habitats desert wash; edges of desert & valley foothill riparian; coastal, desert, & desert succulent scrub; palm oasis; & low elevation chaparral.	Occurs Incidentally detected during April surveys. Nesting habitat present.
<i>Falco mexicanus</i>	prairie falcon	MBTA, BCC	SC, S3, FGC	N/A	Breeding sites located on cliffs, but forages far afield.	Low No nesting habitat, may forage.
<i>Lanius ludovicianus</i>	loggerhead shrike	MBTA, BCC	SSC, S4, FGC	N/A	Found in open habitats with widely spaced vegetation.	Moderate Nesting and foraging habitat onsite.
<i>Poliophtila melanura</i>	black-tailed gnatcatcher	MBTA	WL, S3S4, FGC	N/A	Primarily inhabits wooded desert wash habitats; also occurs in desert scrub habitat, especially in winter.	Occurs Incidentally detected during April surveys. Nesting habitat present.
<i>Pyrocephalus rubinus</i>	vermillion flycatcher	MBTA	SC, S2S3, FGC	N/A	During nesting, inhabits desert riparian adjacent to irrigated fields, irrigation ditches, pastures, & other open, mesic areas. Nests in cottonwood, willow, mesquite, or other large desert riparian trees.	Occurs Incidentally detected during April surveys. Potential nesting in limited suitable areas such as Luckie Park.
<i>Selasphorus rufus</i>	rufous hummingbird	MBTA, BCC	S1S2, FGC	N/A	Breeds in coniferous forests. Uses riparian areas, open woodlands, chaparral, mountain meadows, and other habitats rich in nectar-producing flowers, including gardens and orchards.	Occurs Incidentally detected during April surveys. Migration only. Does not nest in project area.

Table 2. Special Status Wildlife Which Occur or Potentially Occur in the Vicinity of the Proposed Project						
Scientific Name	Common Name	Status ¹			Habitat	Occurrence Probability ²
		Federal	State	Other		
<i>Spizella breweri</i>	Brewer's sparrow	MBTA, BCC	S4, FGC	N/A	Many habitats in winter and migration. Breeds east of the crest of the Cascades and Sierra Nevada Mountains, in high valleys of the Mojave Desert, and in mountains at the southern end of the San Joaquin Valley. For nesting they prefer high sagebrush plains, slopes, and valleys with Great Basin sagebrush and antelope brush.	Occurs Incidentally detected during April surveys. Migration only. Does not nest in project area.
LeConte's thrasher	<i>Toxostoma lecontei</i>	MBTA, BCC	S3, FGC	N/A	Primarily utilizes open desert washes, desert scrub, alkali desert scrub, & desert succulent scrub habitats; commonly nests in a dense, spiny shrub or densely branched cactus.	Moderate Some suitable habitat in less densely populated areas.
Mammals						
<i>Antrozous pallidus</i>	pallid bat	None	SC, S3	WBWG: H	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting.	Moderate May forage onsite but is unlikely to roost due to few or no possible sites.
<i>Chaetodipus fallax pallidus</i>	pallid San Diego pocket mouse	None	SC, S3S4	N/A	In desert wash, desert scrub, desert succulent scrub, pinyon-juniper, etc. Sandy, herbaceous areas, usually in association with rocks or coarse gravel.	Moderate CNDDDB records on project site.
<i>Euderma maculatum</i>	spotted bat	None	SC, S3	WBWG: H	Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests. Feeds over water & along washes, almost entirely on moths. Needs rock crevices in cliffs or caves for roosting.	Moderate May forage onsite but is unlikely to roost due to few or no possible sites. CNDDDB records on project site.
<i>Lasiurus xanthinus</i>	western yellow bat	None	SC, S3	WBWG: H	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, usually palms. Forages over water and among trees.	Moderate Mature palms and other trees present in project area. CNDDDB records on project site.
<i>Ovis canadensis nelsoni</i>	desert bighorn sheep	None	FP, S3	N/A	Open, rocky, steep areas with water & herbaceous forage.	Absent No suitable habitat.
<i>Taxidea taxus</i>	American badger	None	SC, S3	N/A	Most abundant in drier, open stages of most herbaceous, shrub, & forest habitats. Burrows in friable soils & open, uncultivated ground.	Low Habitat suitable, but few if any potential burrows detected during focused surveys for desert tortoise & burrowing owl.

<p>¹Status Codes:</p> <p><u>Federal</u> FE = Federal Endangered FT = Federal Threatened FC = Federal Candidate BCC = Bird of Conservation Concern MBTA = Migratory Bird Treaty Act</p> <p><u>State</u> SE = State Endangered ST = State Threatened SCT=State Candidate FP = Fully Protected SC = State Species of Concern WL = Watch List FGC = Fish & Game Code</p> <p>The California Natural Diversity Database program is a member of the NatureServe Network of natural heritage programs, and uses the same conservation status methodology as other network programs. Elements are ranked using standard criteria and definitions. This standardization makes the ranks comparable between organisms and across political boundaries. The three main categories that are taken into consideration when assigning an element rank are rarity, threats, and trends. Within these three categories, various factors are considered, including:</p> <ul style="list-style-type: none"> • Range extent, area of occupancy, population size, total number of occurrences, and number of good occurrences (ranked A or B). Environmental specificity can also be used if other information is lacking. • Overall threat impact as well as intrinsic vulnerability (if threats are unknown). • Long-term and short-term trends. <p>S1 = Critically Imperiled – At very high risk of extirpation in the state due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.</p>	<p>S2 = Imperiled – At high risk of extirpation in the state due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.</p> <p>S3 = Vulnerable – At moderate risk of extirpation in the state due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.</p> <p>S4 = Apparently Secure – At a fairly low risk of extirpation in the state due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.</p> <p>S5 = Secure – At very low or no risk of extirpation in the state due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.</p> <p>SX = Presumed Extirpated – Species is believed to be extirpated from the state Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered</p> <p>SH = Possibly Extirpated – Known from only historical records but still some hope of rediscovery. There is evidence that the species may no longer be present in the state, but not enough to state this with certainty.</p> <p>SNR = Unranked – State rank not yet assessed.</p>	<p><u>California Rare Plant Rank (CRPR)</u> 1A = Presumed extirpated in California and either rare or extinct elsewhere 1B = Rare or Endangered in California and elsewhere 2A = Presumed extirpated in California, but more common elsewhere 2B = Rare or Endangered in California, but more common elsewhere 3 = Plants for which we need more information – Review list 4 = Plants of limited distribution – Watch list</p> <p><u>Western Bat Working Group (WBWG)</u> The WBWG is composed of agencies, organizations, and individuals interested in bat research, management, and conservation from 13 western states and provinces. The goals of the group are to (1) facilitate communication among interested parties and reduce risks of species decline or extinction; (2) provide a mechanism by which current information on bat ecology, distribution, and research techniques can be readily accessed; and (3) develop a forum to discuss conservation strategies, provide technical assistance, and encourage education programs. Species are ranked as High, Medium, or Low Priority in each of 10 regions in western North America.</p> <p>²Occurrence Probability</p> <p><i>Occurs</i> = Observed on the site by Wood personnel or recorded there by other qualified biologists.</p> <p><i>High</i> = Observed in similar habitat in region by qualified biologists, or habitat on the site is a type often utilized by the species and the site is within the known range of the species.</p> <p><i>Moderate</i> = Reported sightings in surrounding region, or site is within the known range of the species and habitat on the site is a type occasionally used by the species.</p> <p><i>Low</i> = Site is within the known range of the species but habitat on the site is rarely used by the species.</p> <p><i>Absent</i> = A focused study failed to detect the species, or no suitable habitat is present.</p> <p><i>Unknown</i> = Distribution and habitat use has not been clearly determined.</p>
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4.2 Field Visits

Weather conditions during the assessment conducted on 22 March 2022 were 68.5 to 78.4 degrees Fahrenheit, 20 to 35 percent cloud cover, wind speeds of 1-5 mph, and with no precipitation. On 28 March, weather was 76.7 to 75.5 degrees Fahrenheit, 5 to 10 percent cloud cover, wind speed of 1-6 mph, and with no precipitation.

As would be expected for a sewer project, much of the project alignment is surrounded by the homes, businesses, and public facilities that will be served by the proposed system. The remaining habitat is a patchwork of varying sizes of undeveloped vacant lots and lands. Most undeveloped lands are not pristine, but instead show signs of anthropogenic disturbance, such as mechanical disturbance of soil, vegetation removal, off road vehicle tracks, and trash dumping. Nevertheless, the undeveloped lands provide potential wildlife corridors between developed/disturbed areas.

No specific soil mapping was available for most of the project site (United States Department of Agriculture, Natural Resources Conservation Service 2019.). The only mapped soil is near the southeast site corner: "Pintobasin gravelly sand, 1 to 3 percent slopes." In general, most observed soils appeared consistent with gravelly sands, but some soils in the northeast project area included apparent alkali sinks, fine sands, and even dunes in the WWTP area.

Where not developed, the primary vegetation community present throughout the project area is Creosote Bush Scrub dominated by creosote bush (*Larrea tridentata*) with various co-dominants including white bur-sage (*Ambrosia dumosa*), white rhatany (*Krameria bicolor*), allscale saltbush (*Atriplex polycarpa*) and cheesebush (*Ambrosia salsola*). In the northern project area there are stand of Saltbush Scrub dominated by allscale saltbush (*Atriplex polycarpa*) and/or four-wing saltbush (*Atriplex canescens*) and Desert Sink Scrub dominated by bush seepweed (*Suaeda nigra*). The potential WWTP site contains a matrix of Saltbush Scrub and Desert Sink Scrub and a Mesquite Bosque dominated by honey mesquite (*Prosopis glandulosa* var. *torreyana*). A major flood control channel which originates from Fortynine Palms Canyon to the southwest is present onsite, as well as other unnamed drainages. These are mapped as Desert Wash Systems and where plants have not been removed by flood control agencies, they are vegetated with species such as smoke tree (*Psoralea spinosus*) and catclaw (*Senegalia greggii*). Vegetation communities in the project footprint are mapped on Figure 4) and are based on those in USGS (2004).

All plant species and vertebrate wildlife detected are included in Appendix D, including additional species observed during preliminary focused surveys conducted by Wood personnel in April 2022. It should be noted that relatively short-term inventories of this nature are limited in their scope by the seasonality, timing and duration of surveys, and the nocturnal and fossorial habits of many desert-dwelling animals. Therefore, the species observed to date do not reflect the total number of species that potentially occupy the project area.



- Proposed Trunk Sewer - Phase 1
- Survey Area
- Vegetation Communities**
- Desert Sink Scrub
- Desert Sink Scrub/Saltbush Scrub
- Mesquite Bosque
- Developed/Disturbed

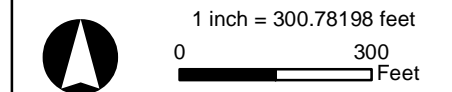
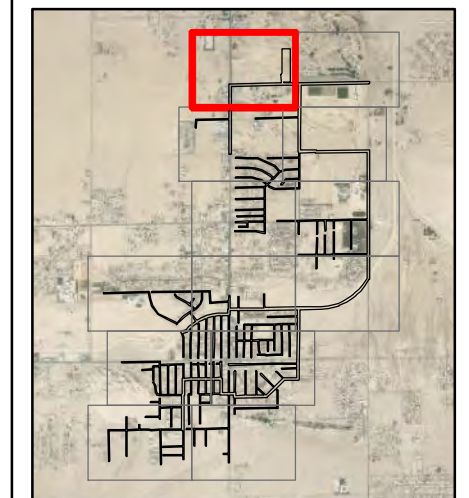







FIGURE 4a
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Desert Sink Scrub
-  Saltbush Scrub
-  Developed/Disturbed

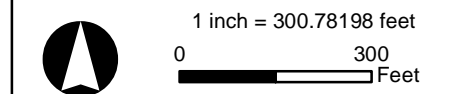
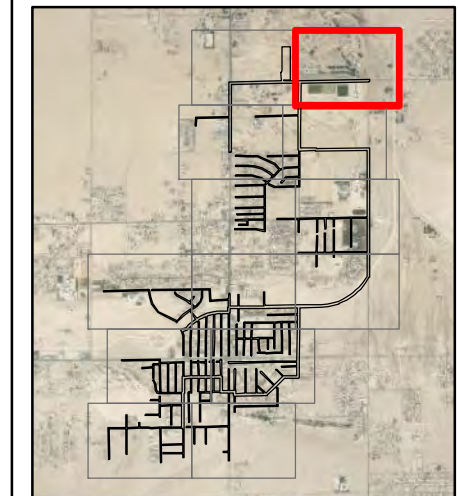
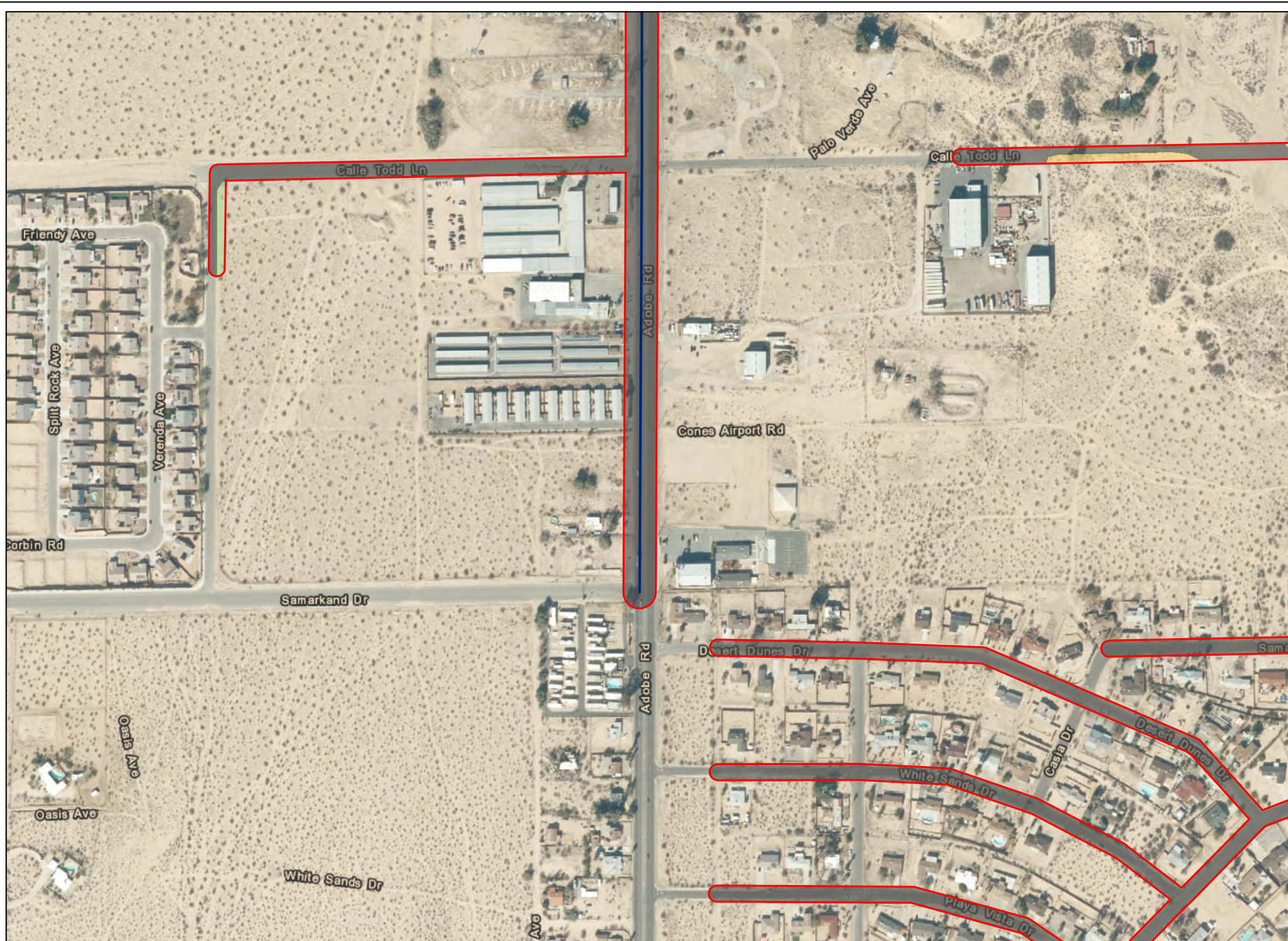







FIGURE 4b
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Saltbush Scrub
-  Developed/Disturbed

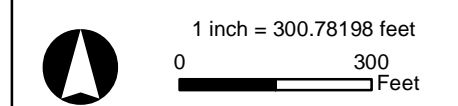
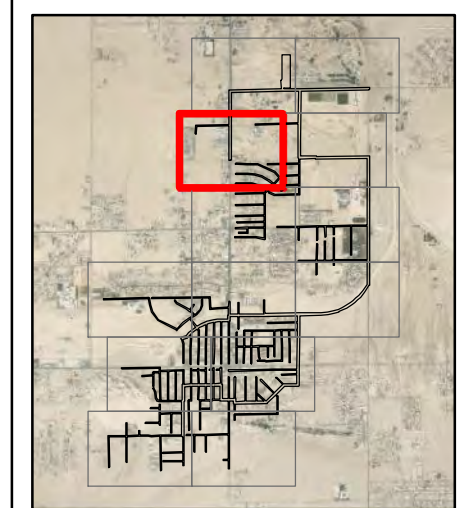
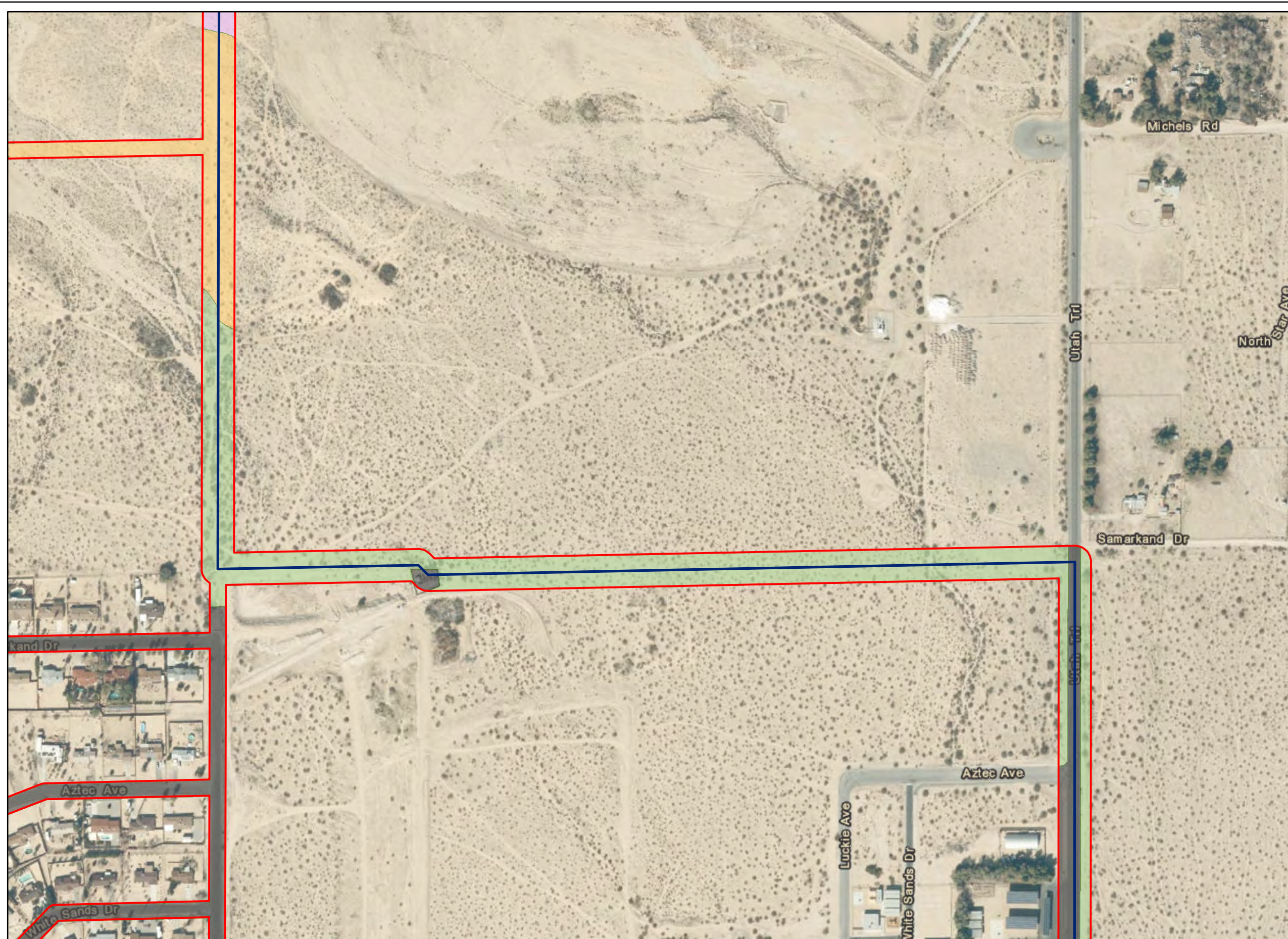








FIGURE 4b
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA





-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Desert Sink Scrub
-  Saltbush Scrub
-  Developed/Disturbed

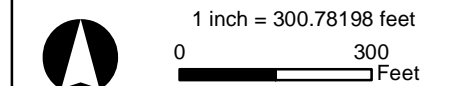
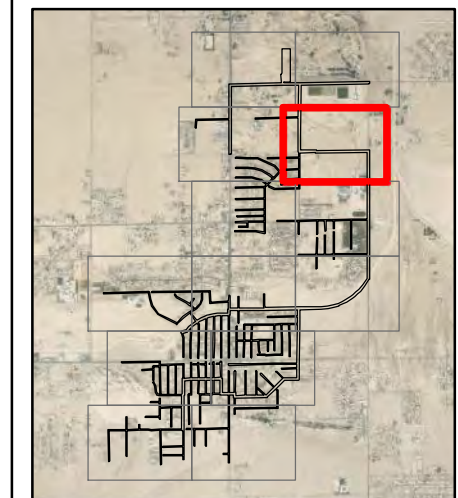
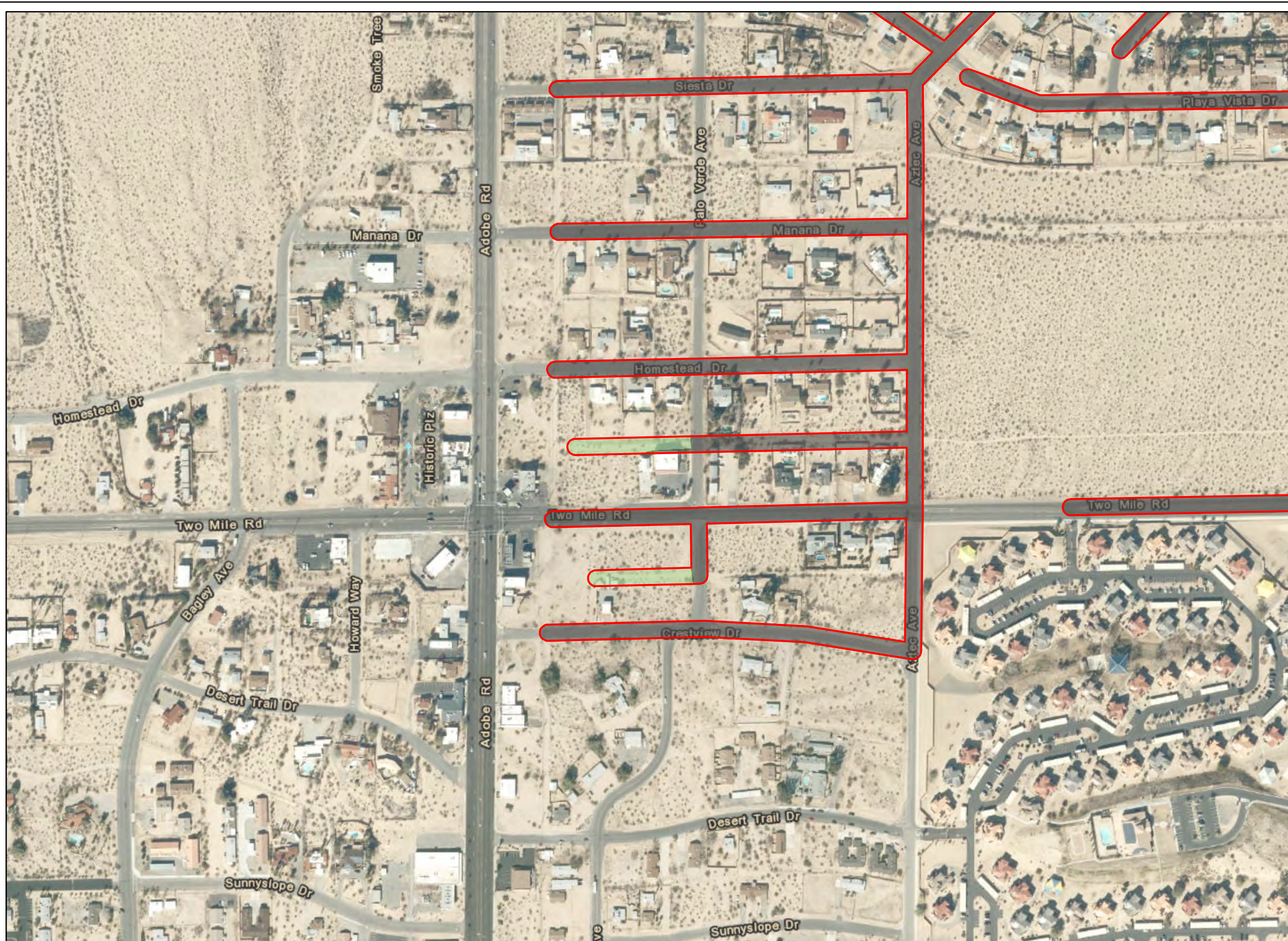






FIGURE 4c
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Developed/Disturbed

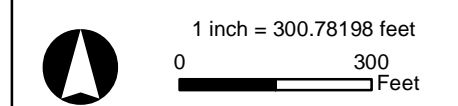
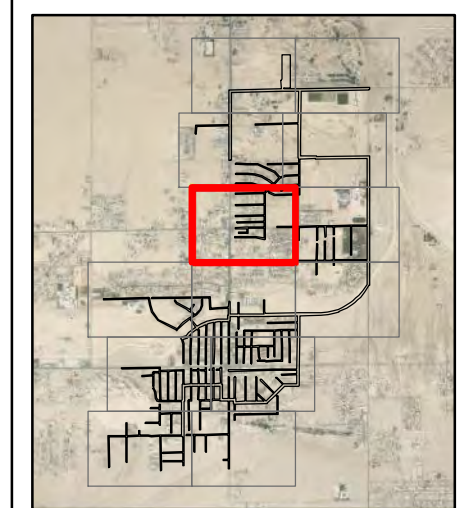
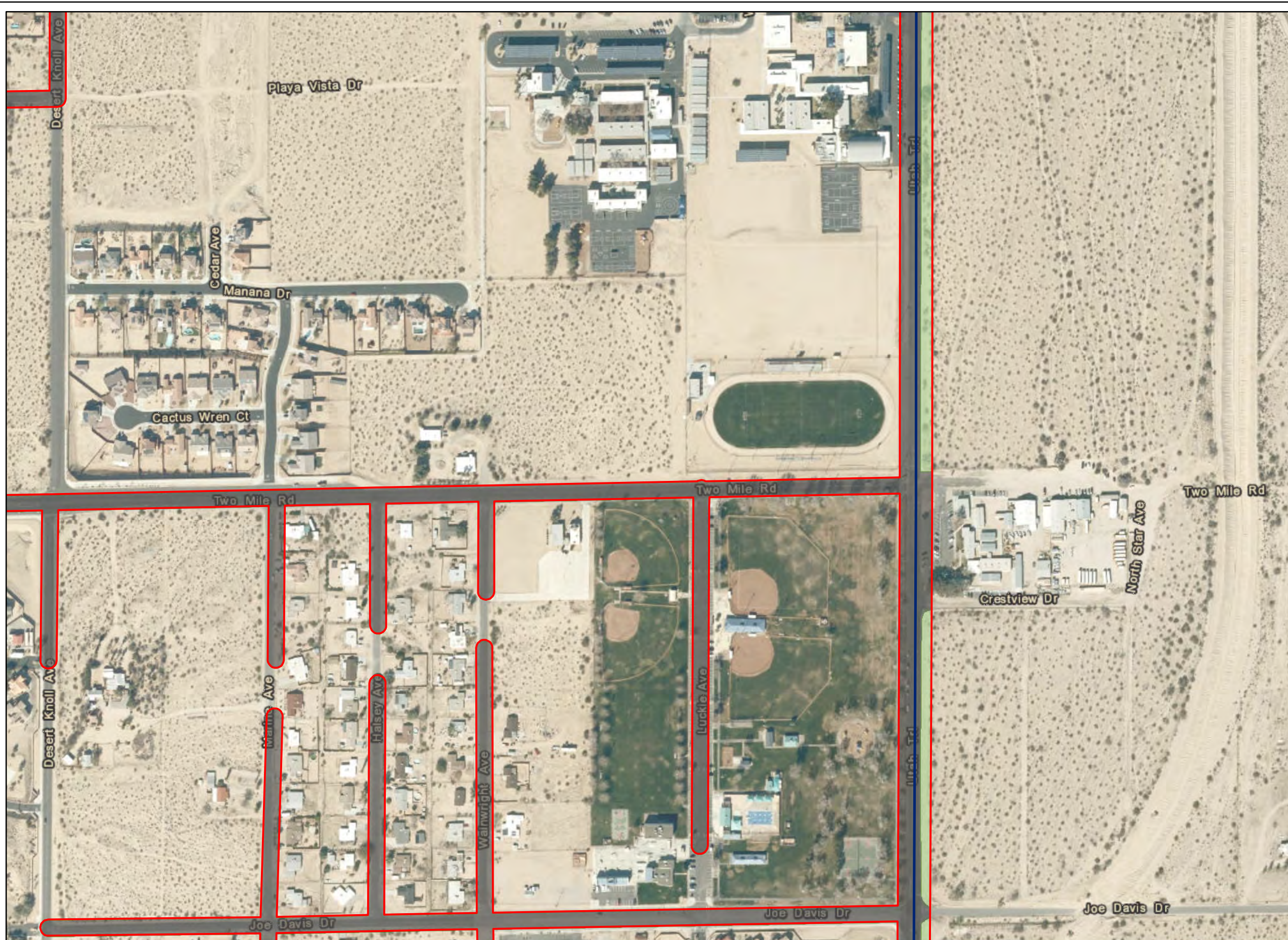






FIGURE 4a
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Developed/Disturbed

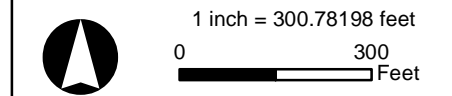
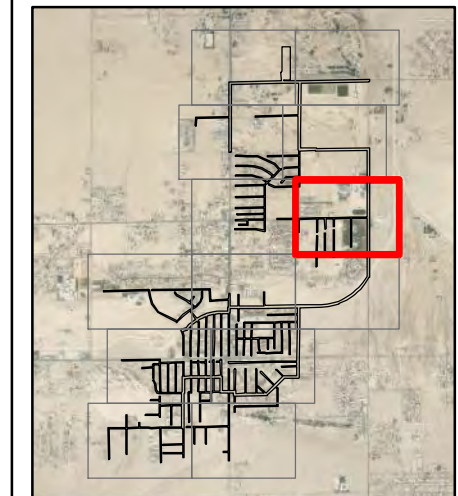






FIGURE 4b
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Developed/Disturbed

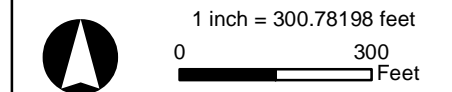
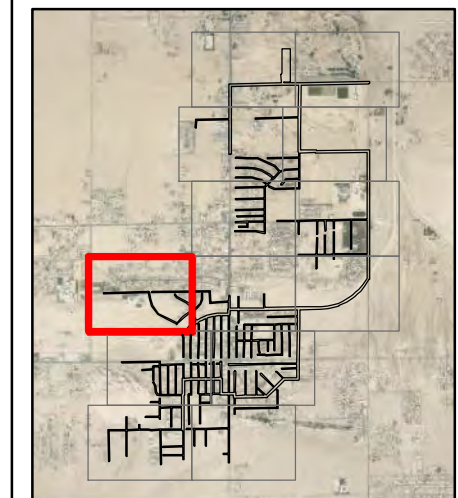
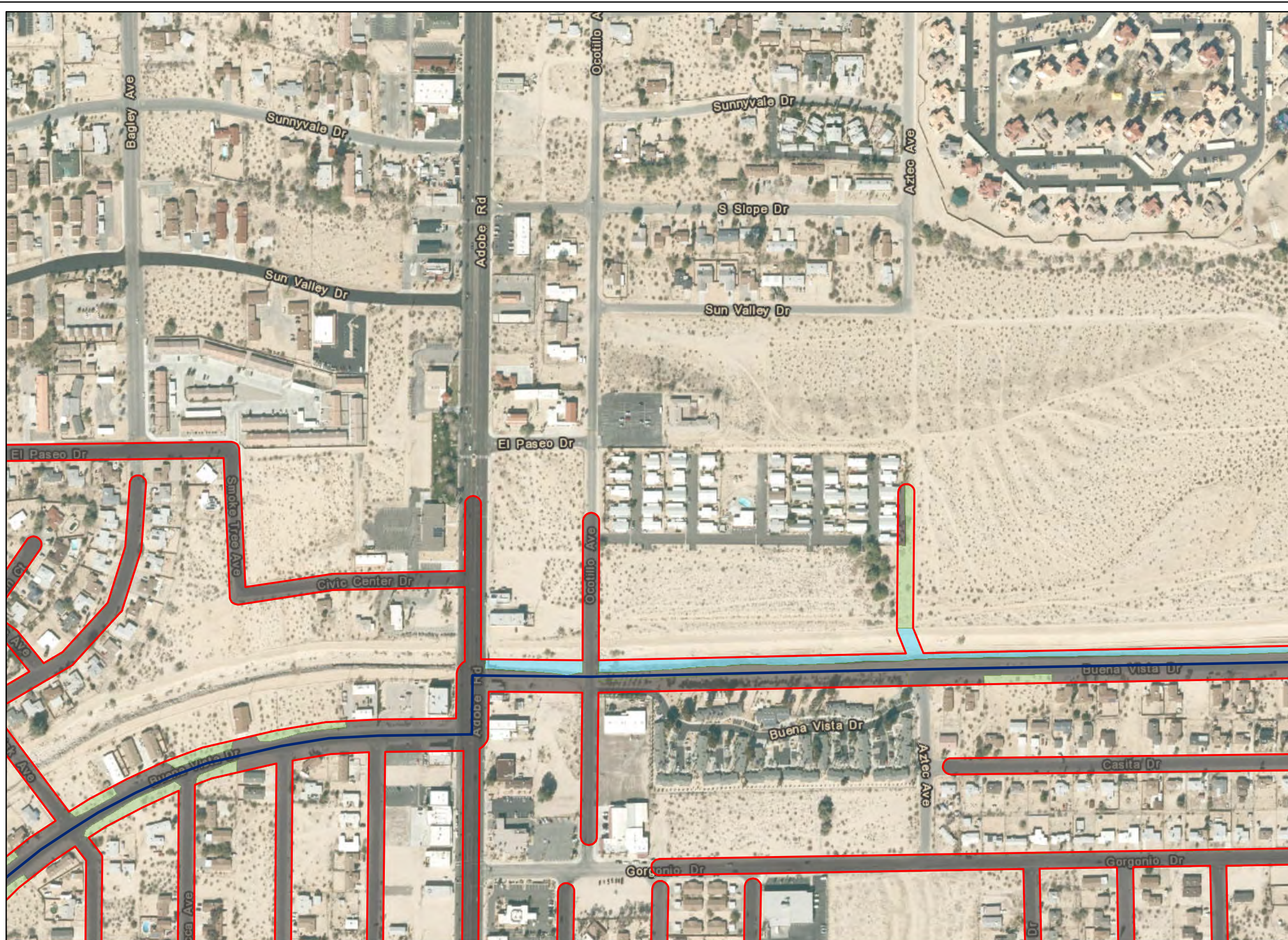







FIGURE 4e
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Desert Wash System
-  Developed/Disturbed

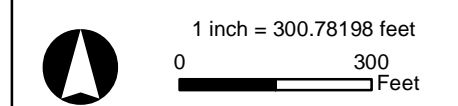
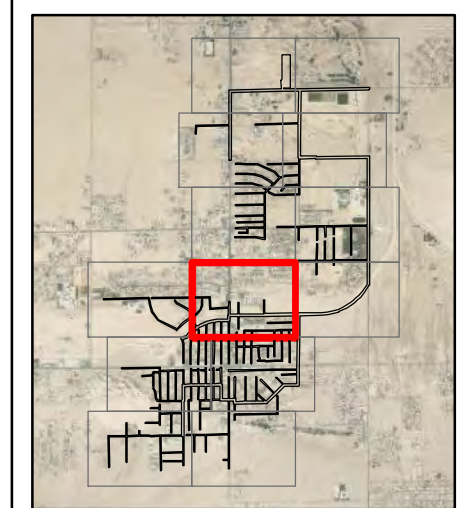
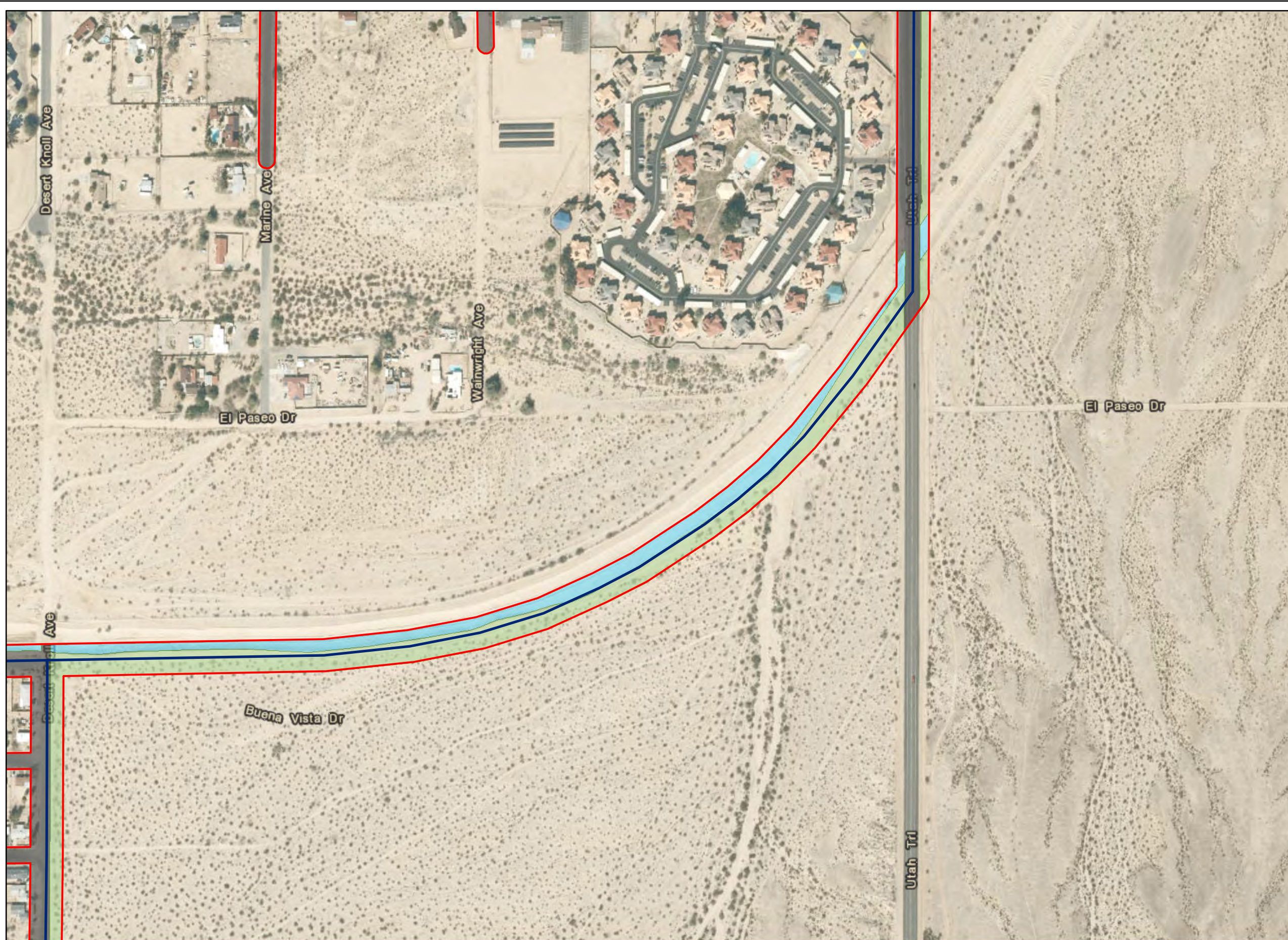







FIGURE 4f
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Desert Wash System
-  Developed/Disturbed

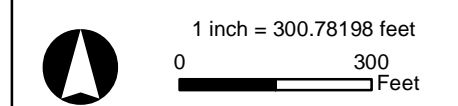
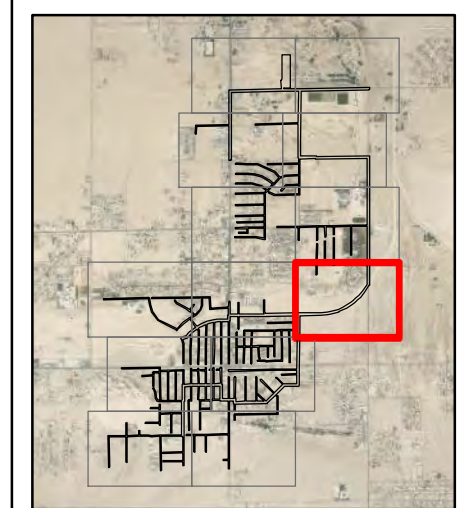
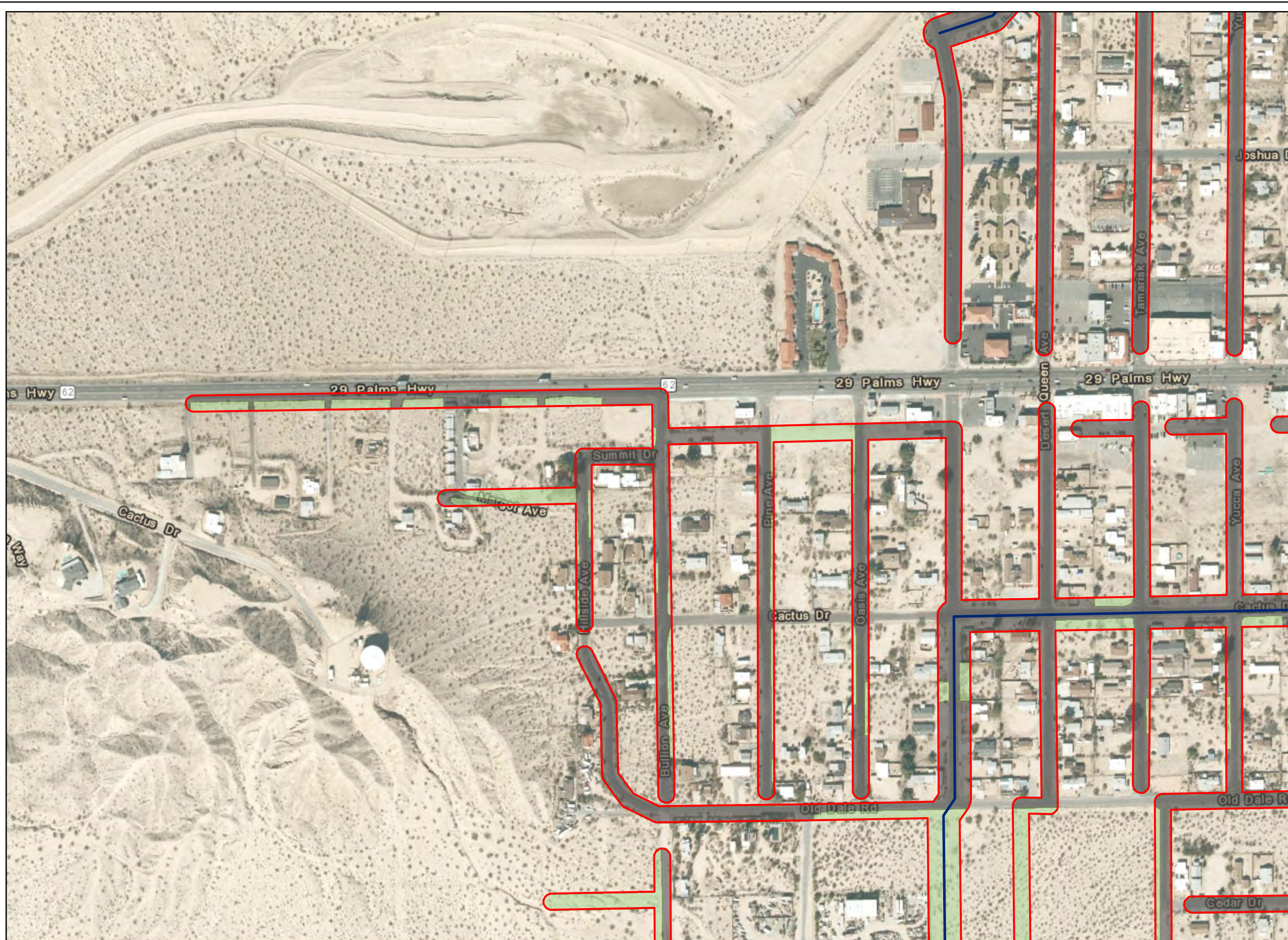






FIGURE 4g
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Developed/Disturbed

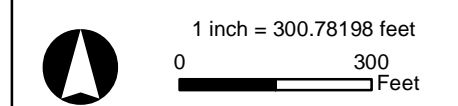
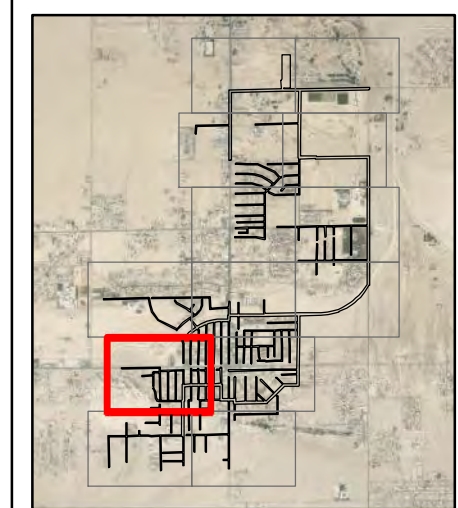
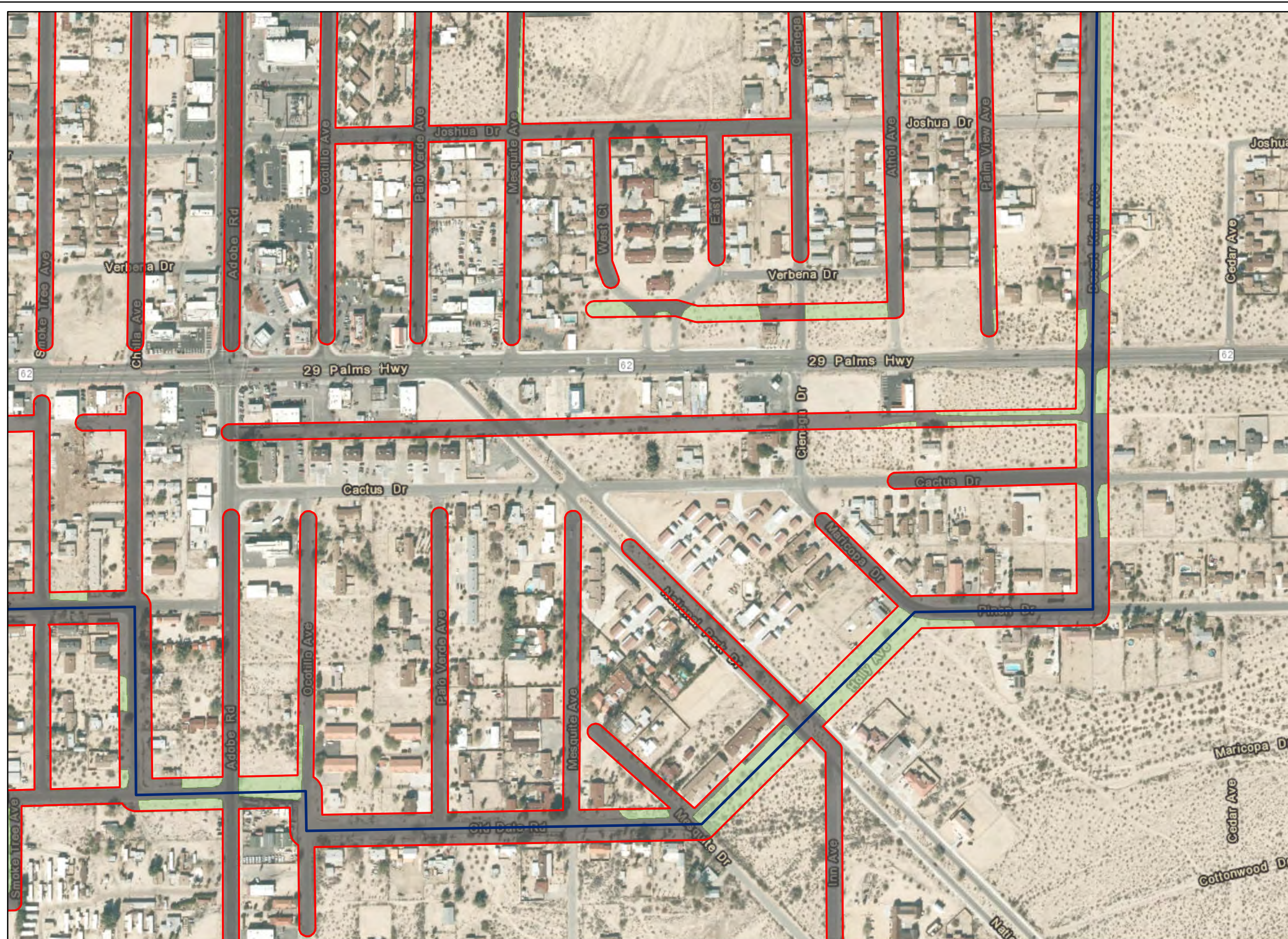






FIGURE 4c
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Developed/Disturbed

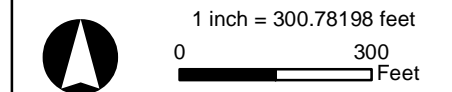
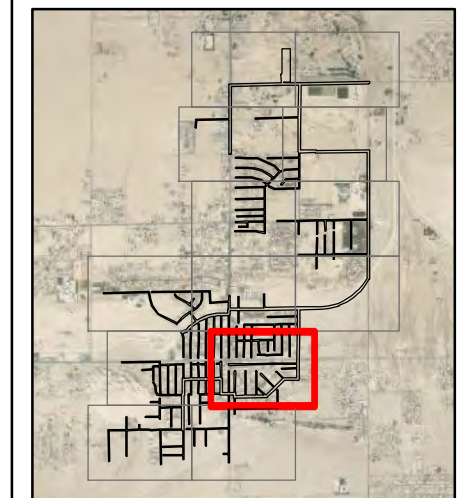
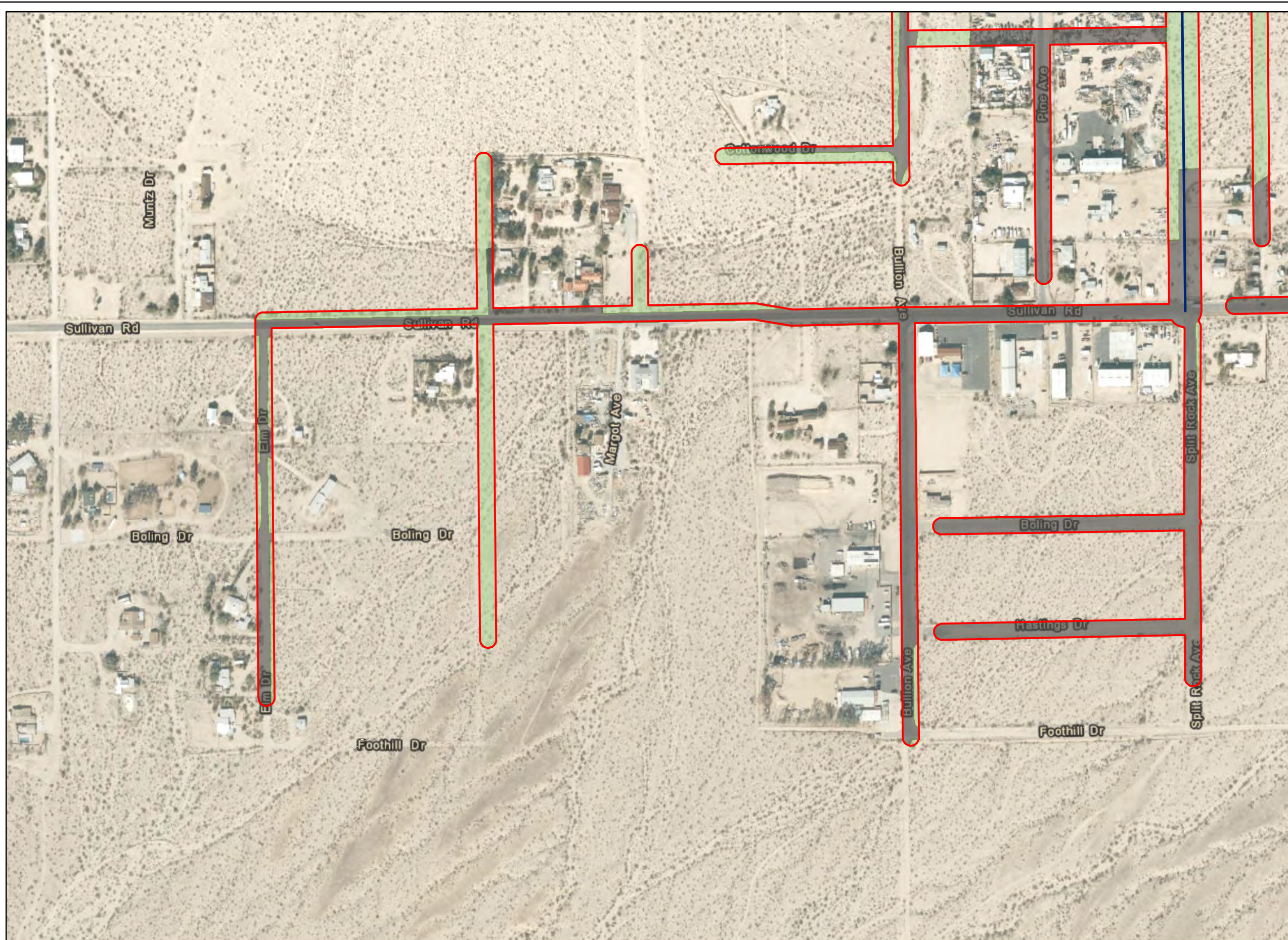






FIGURE 4k
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Developed/Disturbed

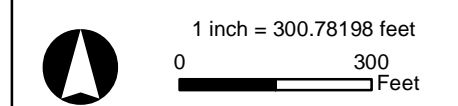
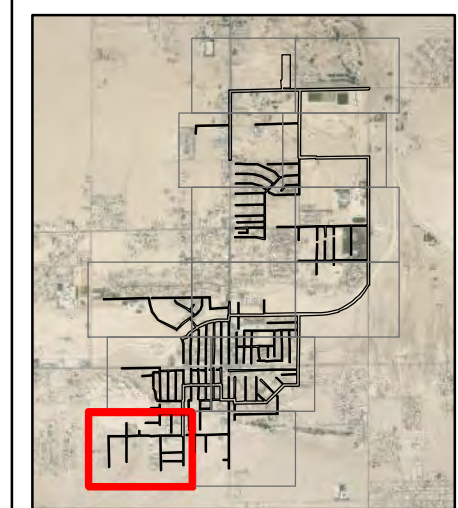






FIGURE 4d
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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-  Proposed Trunk Sewer - Phase 1
-  Survey Area
- Vegetation Communities**
-  Creosote Bush Scrub
-  Developed/Disturbed

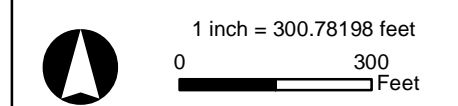
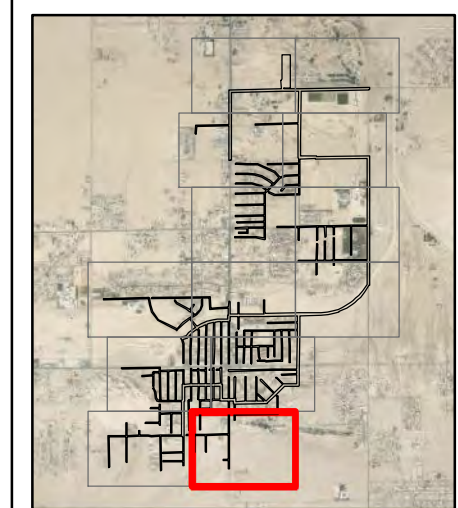


FIGURE 4j
 Vegetation Communities
 Twentynine Palms Wastewater
 Collection System, Phases 1 and 2
 Twentynine Palms, CA



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5.0 DISCUSSION

5.1 Special Status Plants

Twenty special-status plant species are known from the project area. Two do not occur: the Joshua tree (not detected by focused surveys) and Robison's monardella (no suitable habitat). Two are present: Alverson's foxtail cactus and Utah vine milkweed (both found during the April focused survey). The remaining 16 species were not found by the April focused survey but were searched for again during the June blooming period. No additional species were found, however 2022 was a drought year, and it is possible that some of these species failed to germinate and/or bloom at all (Wood 2022a). The WWTP site was not surveyed during blooming period for these species, but no special status plants were detected during December 2022 site visits. No special status vegetation communities were detected.

Although none of the occurring or potentially occurring plant species are state or federally listed as threatened or endangered, impacts could be considered significant under the CEQA. Alverson's foxtail cactus and Utah vine milkweed should be avoided. Biological monitoring may be required near their populations. If unavoidable, they should be transplanted and/or have seeds collected with guidance from the CDFW. If additional special status plants are detected in June or in the future, this same recommendation would apply.

5.2 Desert Tortoise

The Mojave population segment of the desert tortoise is federally and state listed as threatened by the USFWS and CDFW. The Mojave population segment includes all tortoises occurring west and north of the Colorado River. The desert tortoise is most common in desert scrub, desert wash, and Joshua tree habitats in a variety of terrain types, including alluvial fans, valleys, rocky hillsides, and washes. They require friable soil for burrow and nest construction. Burrows are typically found at the base of shrubs, in the interspaces between shrubs, and occasionally in caliche soil bank areas or underneath boulders/rocks. They are herbivores and feed on a variety of plants including annual herbs and perennial grasses.

Tortoise activity is greatest during the spring and early summer, and to a lesser extent during the fall; however, tortoises can be active at any time of the year during appropriate weather conditions. Although tortoises hibernate during the winter and typically emerge in late February or early March, hatchlings and juveniles can be fairly active during the winter months. Adults will also emerge from their burrows to drink if water resources have been limited during the previous activity season and/or winter precipitation has provided standing water. Their activity is usually much reduced during hot summer months, but they may be active following summer rains or if temperatures are moderate (Boarman 2003).

Threats to desert tortoises include loss or degradation of habitat, vandalism, poaching, intentional killing, predation on young tortoises by the common raven (*Corvus corax*) and other predators (e.g. kit fox, snakes, etc.), and disease (e.g. Mycoplasmosis). Off-road vehicles, military training maneuvers,

mining, and livestock grazing also affect tortoise habitat by collapsing burrows, eroding soils, reducing availability of food plants, eliminating shrubs which would provide shade for tortoises and support for their burrows, and ultimately results in surface disturbance that promotes conditions more conducive to invasion by exotic plant species, which provide less nutritional value to tortoises than the native species that were replaced. Human activities, including garbage dumping, landfills, roads, increased nesting opportunities, irrigation, and increased vehicle use have led to increased numbers of common ravens in California deserts. Ultimately, the increased predation on young tortoises by common ravens reduces recruitment into breeding populations (Boarman 2003).

Tortoises are most often detected by their scats and burrows. Tortoises themselves can sometimes be detected in burrows by reflecting sunlight inside the burrow with a mirror. Other tortoise sign include carcasses, or fragments thereof, courtship rings, and drinking depressions. Presence of sign is an indication that tortoises either occur, or have recently occurred, at a particular location. Sign can be detected at any time of the year and always indicates suitable habitat, if not occupied habitat.

Although there is no desert tortoise critical habitat designated on the project site, it is present approximately 1.5 miles to the southeast. Further, the vegetation communities occurring on the project site (*e.g.* Creosote Bush Scrub, Saltbush Scrub) are habitats typically utilized by desert tortoises, and the CNDDDB reported populations immediately to the west in 1990-1991. During the focused survey, Wood biologists were provided an anecdotal report by a local resident who stated that they had observed a mating pair of desert tortoises in the southern project area last year. During the first half of April 2022, however, a focused survey for the desert tortoise was conducted within the project footprint, and no tortoises or their sign were detected. The survey report includes further details (Wood 2022b). A focused survey was conducted on the WWTP site on 14 December 2022 and no tortoises or their sign were detected there either.

Although desert tortoise was found to be absent from the narrow, linear project footprint, the project area is surrounded by potential habitat. For these reasons, and because suitable habitat is present in the project footprint, desert tortoises may enter the project area in the future. The following mitigation and minimization measures are recommended to ensure that any potential impacts to the desert tortoise are avoided:

- 1) A worker's environmental awareness program (WEAP) would be implemented to educate the construction crew of potential special status species present on the project site.
- 2) Construction and maintenance personnel would be required to inspect for desert tortoises under vehicles prior to moving the vehicle. If a desert tortoise is found beneath a vehicle, it would not be moved until the desert tortoise had left of its own accord. All desert tortoise observations would be reported to a qualified biologist and the wildlife agencies.
- 3) A qualified biologist should monitor construction when it is occurring adjacent to undeveloped lands to ensure that tortoises do not enter the work area and that they are not disturbed if present.

- 4) Any open trenches adjacent to habitat should be monitored by a qualified biologist daily. If left open overnight or at any time when not monitored, they should be fenced and/or covered to prevent entry by desert tortoises. Exit ramps should be present within open trenches.

Desert tortoises cannot be taken (harmed, harassed) under state and federal law. This report and any recommended mitigation measures do not constitute authorization for incidental take of the desert tortoise.

5.3 Special Status Invertebrates

There is a minimal possibility that two special status insects could occur onsite: the monarch butterfly (federal candidate for ESA listing) and Robert's rhopalemma bee (state ranked as Critically Imperiled). Monarchs are not expected to winter in the project area, but a few individual adults may forage in the area. The main threat to the species would be impacts to milkweed, the larval foodplant. Robert's rhopalemma bee is an extremely rare species about which little is known.

We recommend that preconstruction surveys by qualified biologists flag milkweed plants for avoidance. If unavoidable, monarch caterpillars should be moved to safe milkweeds, with appropriate authorizations. Any bee nest should be avoided. If unavoidable, and determined to be occupied by Robert's rhopalemma bee, CDFW should be consulted for guidance.

5.4 Red Diamond Rattlesnake

Habitat is marginal for the state species of special concern red diamond rattlesnake, and at the northeastern limits of its range. Similarly to the recommendations for the desert tortoise, we recommend that a qualified biologist monitor construction when it is occurring adjacent to suitable undeveloped lands to ensure that red diamond rattlesnakes do not enter the work area and that they are not disturbed if present.

5.5 Special Status Bats

Three species of special status bats (state species of special concern) are of potential occurrence: pallid bat, spotted bat, and western yellow bat. Foraging bats are of no concern regarding impacts, but roosting bats of any species must not be disturbed. If potential roost sites must be disturbed or removed, especially large trees, palms, they should be checked for bats by a qualified biologist. If present and unavoidable, CDFW should be consulted.

5.6 Special Status Burrowing Mammals

Two species of special status burrowing mammals (state species of special concern) are of potential occurrence: American badger and pallid San Diego pocket mouse. Although habitat is suitable for American badger, no burrows diagnostic for this species were found during a focused burrow survey for burrowing owl. As before, we recommend that a qualified biologist monitor construction when it is occurring adjacent to suitable undeveloped lands to ensure that American badger potential burrows aren't present, and that burrows and badgers aren't impacted if they are present, do not enter the work area and that they are not disturbed if present. If present and unavoidable, CDFW should be consulted.

The pallid San Diego pocket mouse is nocturnal and is only positively detectable through focused trapping surveys. Because it is unlikely that significant numbers of this species would be harmed given the narrow direct impacts, we are not recommending focused surveys. In suitable habitat, however, preconstruction surveys are recommended to determine whether burrows suitable for the pallid San Diego pocket mouse are present. If so, the area around them should be avoided. If avoidance is not possible, CDFW should be consulted for guidance, which could include focused surveys.

5.7 Migratory Bird Treaty Act and State Fish and Game Code

Native bird species which may nest on or adjacent to the project area could be subject to direct or indirect impacts from the project. The bird nesting season is generally February 1 through August 31, although nesting birds are always protected. To avoid impacts to such birds, including the special status species which occur or potentially occur onsite (Costa's hummingbird, Cooper's hawk, loggerhead shrike, black-tailed gnatcatcher, vermilion flycatcher, and LeConte's thrasher) we recommend the following: any vegetation removal or grading occurring during the nesting season would require at least one nesting bird survey to be conducted by a qualified biologist no more than three days prior to such activity. If no nests are found, construction would proceed. If active nests are found, impact avoidance measures (e.g., "no work" buffers; sound and/or visual barriers) would be put in place around the nest until young have fledged. This would also apply to offsite nests which may be indirectly impacted. While there is no established protocol for indirect impacts to nests, when consulted, the CDFW often recommends avoidance buffers of about 500 feet for birds-of-prey and listed species, and 100 – 300 feet for other unlisted birds.

5.8 Burrowing Owl

The burrowing owl is uniquely vulnerable to ground disturbing activities since it both nests and roosts underground. Therefore, additional actions must be taken to protect against impacts to this species. The burrowing owl is also federally designated as a Bird of Conservation Concern and state designated as a Species of Concern. It occurs in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation (Haug et al. 2011). In southern California, burrowing owls are not only found in undisturbed natural areas, but also fallow agricultural fields, margins of active agricultural areas, livestock farms, airports, and vacant lots. It is a subterranean nester, typically utilizing pre-existing burrows (e.g. California ground squirrel (*Otospermophilus beecheyi*), kit fox (*Vulpes macrotis*), drain pipes, culverts, etc.). Burrowing owl occupied burrows and areas can be recognized by sign which includes tracks, molted feathers, cast pellets, prey remains, egg shell fragments, owl white wash, nest burrow decoration materials (e.g., paper, foil, plastic items, livestock or other animal manure, etc.) (CDFG 2012). The species is active both day and night and may be seen perching conspicuously on fence posts or standing at the entrance of their burrows.

Analyses of regional patterns for breeding populations of burrowing owls have detected declines both locally in their central and southern coastal breeding areas, and statewide where the species has experienced breeding range retraction. Threat factors affecting burrowing owl populations include habitat loss, degradation and modification, and eradication of ground squirrels resulting in a loss of

suitable burrows required by burrowing owls for nesting, protection from predators, and shelter. Conservation for burrowing owls may include but may not be limited to protecting remaining breeding pairs or providing for population expansion, protecting and enhancing breeding and essential habitat, and amending or augmenting land use plans to stabilize populations and other specific actions to avoid the need to list the species pursuant to the ESA or CESA (CDFG 2012).

No burrowing owls or their sign were observed on the project site during the reconnaissance survey, but suitable habitat was present and widespread. The *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) requires a survey for potential burrows followed by four surveys of those areas found to have potential for burrowing owl occupation. Those four focused surveys are conducted during the times of day when burrowing owls are most active. The first of the four focused surveys needed to be completed by 15 April, so Wood staff was deployed to conduct the burrow search and the first focused survey during the first half of April. The three additional focused survey visits were conducted on 4 May, 27 May, and 6 July 2022. Potential burrows were found, but no burrowing owls or their sign were detected (Wood 2022c). A burrow search was conducted on the WWTP site on 14 December 2022 and no burrowing owls or their sign were detected there either. Nevertheless, where potential habitat is present, CDFG (2012) also requires less extensive preconstruction take avoidance surveys for owls whether or not found by the focused surveys in case the site has been occupied in the interim between the focused surveys and initiation of construction. If burrowing owls are found and are unavoidable, guidelines in CDFG (2012) will need to be followed and consultation with the CDFW may be required.

5.9 Jurisdictional Waters

As noted above, a major flood control channel and other natural drainages are present onsite. The vegetation map (Figure 4) identifies Desert Wash Systems. A jurisdictional delineation report was prepared (Wood 2022d) which identifies potential federal and/or state jurisdictional waters crossing the project area. No apparent jurisdictional waters are present on the WWTP site.

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Appendix A California Natural Diversity Database (CNDDDB) RareFind 5 Report



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Species IS (Calochortus striatus OR Chaetodipus fallax pallidus OR Crotalus ruber OR Desert Fan Palm Oasis Woodland OR Euderma maculatum OR Gopherus agassizii OR Lasiurus xanthinus OR Lasthenia glabrata ssp. coulteri OR Sidalcea neomexicana OR Streptanthus bernardinus OR Wislizenia refracta ssp. refracta OR Taxidea taxus OR Athene cunicularia OR Ayenia compacta OR Ovis canadensis nelsoni OR Saltugilia latimeri OR Linanthus maculatus ssp. maculatus OR Menodora spinescens var. mohavensis OR Antrozous pallidus OR Grusonia parishii OR Rhopalolemma robertsi OR Falco mexicanus OR Monardella robisonii OR Jaffuelobryum wrightii)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Ayenia compacta California ayenia	PDSTE01020	None	None	G4	S3	2B.3
Calochortus striatus alkali mariposa-lily	PMLIL0D190	None	None	G3?	S2S3	1B.2
Chaetodipus fallax pallidus pallid San Diego pocket mouse	AMAFD05032	None	None	G5T3T4	S3S4	SSC
Crotalus ruber red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC
Desert Fan Palm Oasis Woodland Desert Fan Palm Oasis Woodland	CTT62300CA	None	None	G3	S3.2	
Euderma maculatum spotted bat	AMACC07010	None	None	G4	S3	SSC
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL
Gopherus agassizii desert tortoise	ARAAF01012	Threatened	Threatened	G3	S2S3	
Grusonia parishii Parish's club-cholla	PDCAC0D2H0	None	None	G3G4	S2	2B.2
Jaffuelobryum wrightii Wright's jaffuelobryum moss	NBMUS97020	None	None	G5	S2S3	2B.3
Lasiurus xanthinus western yellow bat	AMACC05070	None	None	G4G5	S3	SSC
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Linanthus maculatus ssp. maculatus Little San Bernardino Mtns. linanthus	PDPLM041Y1	None	None	G2T2	S2	1B.2
Menodora spinescens var. mohavensis Mojave menodora	PDOLE09061	None	None	G4T2	S2	1B.2



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Monardella robisonii</i> Robison's monardella	PDLAM180K0	None	None	G3	S3	1B.3
<i>Ovis canadensis nelsoni</i> desert bighorn sheep	AMALE04013	None	None	G4T4	S3	FP
<i>Rhopalolemma robertsi</i> Roberts' rhopalolemma bee	IIHYM83010	None	None	G1	S1	
<i>Saltugilia latimeri</i> Latimer's woodland-gilia	PDPLM0H010	None	None	G3	S3	1B.2
<i>Sidalcea neomexicana</i> salt spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
<i>Streptanthus bernardinus</i> Laguna Mountains jewelflower	PDBRA2G060	None	None	G3G4	S3S4	4.3
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S3	SSC
<i>Wislizenia refracta ssp. refracta</i> jackass-clover	PDCPP09013	None	None	G5T5?	S1	2B.2

Record Count: 24

Appendix B Information for Planning and Consultation (IPaC) Report



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901
<http://www.fws.gov/carlsbad/>

In Reply Refer To:
Project Code: 2022-0037550
Project Name: Proposed Sewer

April 29, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A biological assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a biological assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a biological assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found at the Fish and Wildlife Service's Endangered Species Consultation website at:

<https://www.fws.gov/endangered/what-we-do/faq.html>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Carlsbad Fish And Wildlife Office

2177 Salk Avenue - Suite 250

Carlsbad, CA 92008-7385

(760) 431-9440

Project Summary

Project Code: 2022-0037550

Event Code: None

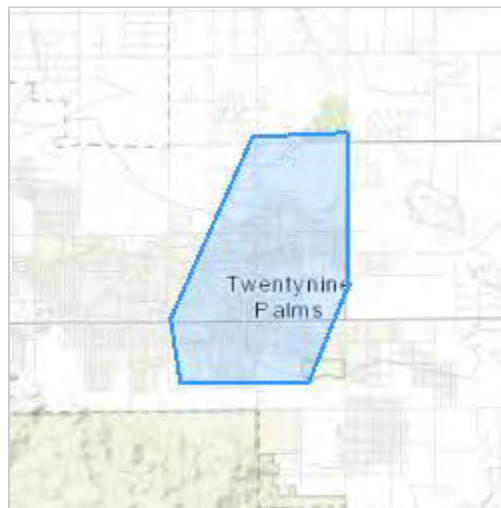
Project Name: Proposed Sewer

Project Type: Wastewater Pipeline - New Constr - Below Ground

Project Description: City sewer system. This project is at a very preliminary stage and work with the US Marine Corps is an option, not a done deal.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@34.15354295,-116.04882879653991,14z>



Counties: San Bernardino County, California

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Reptiles

NAME	STATUS
Desert Tortoise <i>Gopherus agassizii</i> Population: Wherever found, except AZ south and east of Colorado R., and Mexico There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4481	Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: Wood
Name: John Green
Address: 1845 Chicago Ave., Ste D
City: Riverside
State: CA
Zip: 92507
Email: bewickwren@earthlink.net
Phone: 9513698060

Lead Agency Contact Information

Lead Agency: Marine Corps

Appendix C Site Photographs



Photo 1. View from northwestern project area. Development and creosote bush scrub.



Photo 2. View from southeastern project area. Creosote bush scrub and sparse development.



Photo 3. View of southwestern project area. Patchwork development and creosote bush scrub.



Photo 4. View from northeastern project area. Sandy saltbush scrub and development.



Photo 5. View upstream of flood control channel (Desert Wash System) from Utah Trail.



Photo 6. Example of potential burrowing owl habitat (concrete rubble, abandoned pipes).



Photo 7. Sandy Saltbush Scrub in northern project area.



Photo 8. Desert Sink Scrub in northern project area.



Photo 9. Special status plant species Alvenson's foxtail cactus (*Coryphantha alvensonii*).



Photo 10. Special status plant species Utah vine milkweed (*Funastrum utahense*).



Photo 11. Donnell Hill area of western project.



Photo 12. Luckie Park area of eastern project. Good trees for nesting birds.



Photo 13. Mesquite Bosque on WWTP site.

Appendix D Wildlife and Plant Species Observed During Surveys

Plant Species Observed

GYMNOSPERMS (GYMNOSPERMAE)

Ephedraceae

Ephedra californica

EUDICOTS (EUDICOTIDAE)

Amaranthaceae

Amaranthus blitoides

Tidestromia suffruticosa var. *oblongifolia*

Apocynaceae

Asclepias erosa

Asclepias subulata

***Funastrum utahense*

Asteraceae

Ambrosia acanthicarpa

Ambrosia dumosa

Ambrosia salsola

Baileya multiradiata

Bebbia juncea var. *aspera*

Chaenactis fremontii

Chaenactis stevioides

Dicoria canescens

Encelia farinosa

Encelia frutescens

Geraea canescens

Isocoma acradenia

**Lactuca serriola*

Malacothrix glabrata

Palafoxia arida

Rafinesquia neomexicana

**Sonchus asper* ssp. *asper*

Stephanomeria pauciflora

Bignoniaceae

Chilopsis linearis ssp. *arcuata*

Boraginaceae

Amsinckia tessellata

Cryptantha dumetorum

Greeneocharis circumscissa

Johnstonella angustifolia

Pectocarya platycarpa

Pectocarya recurvata

Ephedra Family

desert tea

Amaranth Family

procumbent pigweed

honeysweet

Dogbane and Milkweed Family

desert milkweed

rush milkweed

Utah vine milkweed

Sunflower Family

annual bur-sage

white bur-sage

cheesebush

desert marigold

sweetbush

Fremont pincushion

desert pincushion

desert twinbugs

brittlebush

button brittlebush

desert-sunflower

alkali goldenbush

prickly lettuce

desert dandelion

Spanish-needle

desert chicory

prickly sow thistle

wire-lettuce

Trumpet-Creeper Family

desert willow

Borage Family

bristly fiddleneck

scrambling cryptantha

cushion cryptantha

narrow-leaved Johnstonella

wide-toothed pectocarya

arched-nut pectocarya

Brassicaceae

**Brassica tournefortii*
Lepidium densiflorum
Lepidium fremontii
**Sisymbrium irio*
**Sisymbrium orientale*
Streptanthella longirostris

Cactaceae

***Coryphantha alversonii*
Cylindropuntia bigelovii
Cylindropuntia echinocarpa
**Cylindropuntia fulgida*
Cylindropuntia ramosissima
Echinocereus engelmannii
Ferocactus cylindraceus
Opuntia basilaris

Caryophyllaceae

Achyronychia cooperi

Chenopodiaceae

Atriplex canescens
Atriplex polycarpa
**Chenopodium murale*
**Salsola tragus*
Suaeda nigra

Cleomaceae

Peritoma arborea

Cucurbitaceae

Cucurbita palmata

Ehretiaceae

Tiquilia plicata

Euphorbiaceae

Croton californicus
**Euphorbia maculata*
Euphorbia polycarpa

Mustard Family

Sahara mustard
common pepperweed
desert pepperweed
London rocket
Indian hedgemustard
longbeak streptanthella

Cactus Family

(Alverson's) foxtail cactus
teddy-bear cholla
golden/silver cholla
jumping cholla
pencil cactus
Engelmann's hedgehog cactus
California barrel cactus
beavertail pricklypear

Pink Family

frost-mat

Goosefoot Family

four-wing saltbush
allscale saltbush
nettleleaf goosefoot
Russian thistle
bush seepweed

Spiderflower Family

bladderpod

Gourd and Melon Family

coyote melon

Ehretia Family

fan-leaved tiquilia

Spurge Family

California croton
spotted spurge
smallseed sandmat

Fabaceae

Caesalpinia gilliesii
Dalea mollissima
**Parkinsonia aculeata*
Parkinsonia florida
Prosopis glandulosa var. *torreyana*
Psoralea argophylla
Senegalia greggii
Senna armata

Geraniaceae

**Erodium cicutarium*

Hydrophyllaceae

Phacelia crenulata
Phacelia cf. *tanacetifolia*

Krameriaceae

Krameria bicolor

Lamiaceae

Condea emoryi
Salvia columbariae
Scutellaria mexicana

Loasaceae

Mentzelia albicaulis

Malvaceae

Eremalche exilis
**Malva parviflora*
Sphaeralcea ambigua

Nyctaginaceae

Abronia villosa var. *villosa*
Allionia incarnata
Boerhavia coccinea

Onagraceae

Chylismia claviformis
Eremothera boothii ssp. *desertorum*
Oenothera deltooides

Orobanchaceae

Aphyllon cooperi

Papaveraceae

Eschscholzia minutiflora

Legume Family

bird-of-paradise
soft prairie clover
Mexican palo verde
blue palo verde
honey mesquite
smoke tree
catclaw
spiny senna

Geranium Family

redstem filaree

Waterleaf Family

cleftleaf wildheliotrope
lacy phacelia

Rhatany Family

white rhatany

Mint Family

desert lavender
chia
bladder-sage

Loasa Family

whitestem blazingstar

Mallow Family

white mallow
cheeseweed
desert globemallow

Four-o'clock Family

desert sand verbena
trailing windmills
scarlet spiderling

Evening-Primrose Family

browneyes
desert suncup
Devil's lantern

Broom-Rape Family

desert broomrape

Poppy Family

pygmy poppy

Polygonaceae

Chorizanthe brevicornu
Chorizanthe rigida
Eriogonum deflexum
Eriogonum inflatum
Eriogonum reniforme
Eriogonum thomasii

Rosaceae

Petalonyx thurberi

Simmondsiaceae

Simmondsia chinensis

Solanaceae

Datura wrightii
**Nicotiana glauca*
Lycium cooperi

Tamaricaceae

**Tamarix aphylla*
**Tamarix ramosissima*

Viscaceae

Phoradendron californicum

Zygophyllaceae

Larrea tridentata

MONOCOTS (MONOCOTYLEDONAE)

Arecaceae

^*Washingtonia* sp.

Agavaceae

Yucca schidigera

Poaceae

Aristida purpurea
**Bromus rubens*
**Cynodon dactylon*
Dasyochloa pulchella
Festuca octoflora
Hilaria rigida
**Hordeum murinum*
**Pennisetum setaceum*
**Schismus* sp.

Buckwheat Family

brittle spineflower
Devil's spineflower
skeleton weed
desert trumpet
kidney-leaf wild buckwheat
Thomas' wild buckwheat

Loasa Family

sandpaper-plant

Jojoba Family

jojoba

Nightshade Family

sacred thorn-apple
tree tobacco
peach thorn

Tamarisk Family

athel
saltcedar

Mistletoe Family

desert mistletoe

Caltrop Family

creosote bush

Palm Family

fan palm

Century Plant Family

Mojave yucca

Grass Family

purple three-awn
red brome
Bermuda grass
low woollygrass
sixweeks grass
big galleta
wall barley
crimson fountain grass
Mediterranean grass

^ Fan palms onsite were seedlings and presumed to have sprouted from the seeds of palms planted as landscaping on surrounding developments. They could potentially be *Washingtonia* native to California, but they are not native at this location.

Vertebrate Species Observed

REPTILIA

Eublepharidae

Coleonyx variegatus

Iguanidae

Dipsosaurus dorsalis

Phrynosomatidae

Uta stansburiana

Callisaurus draconoides

Sceloporus uniformis

Teiidae

Aspidoscelis tigris

Colubridae

Pituophis catenifer

Chionactis occipitalis

Viperidae

Crotalus cerastes

AVES

Odontophoridae

Callipepla gambelii

Columbidae

**Columba livia*

**Streptopelia decaocto*

Zenaida macroura

Cuculidae

Geococcyx californianus

Caprimulgidae

Chordeiles acutipennis

Trochilidae

Calypte anna

***Calypte costae*

***Selasphorus rufus*

Charadriidae

Charadrius vociferus

Cathartidae

Cathartes aura

Accipitridae

***Accipiter cooperii*

Buteo jamaicensis

REPTILES

Eyelid Geckos

western banded gecko

Iguanas

desert iguana

Spiny Lizards

common side-blotched lizard

zebra-tailed lizard

yellow-backed spiny lizard

Whiptails and Relatives

tiger whiptail

Colubrid Snakes

gopher snake

western shovel-nosed snake

Vipers

sidewinder

BIRDS

New World Quail

Gambel's quail

Pigeons and Doves

rock pigeon

Eurasian collared dove

mourning dove

Cuckoos, Roadrunners, and Anis

greater roadrunner

Nightjars

lesser nighthawk

Hummingbirds

Anna's hummingbird

Costa's hummingbird

rufous hummingbird

Plovers

killdeer

New World Vultures

turkey vulture

Hawks and Eagles

Cooper's hawk

red-tailed hawk

Picidae

Colaptes auratus
Dryobates scalaris

Falconidae

Falco sparverius

Tyrannidae

Tyrannus verticalis
Sayornis saya
Contopus sordidulus
Myiarchus cinerascens
*******Pyrocephalus rubinus*

Corvidae

Corvus corax

Remizidae

Auriparus flaviceps

Alaudidae

Eremophila alpestris

Hirundinidae

Tachycineta bicolor

Regulidae

Corthylio calendula

Ptilogonatidae

Phainopepla nitens

Poliopitidae

Poliopitila caerulea
*******Poliopitila melanura*

Troglodytidae

Campylorhynchus brunneicapillus

Mimidae

Mimus polyglottos

Sturnidae

**Sturnus vulgaris*

Passeridae

**Passer domesticus*

Fringillidae

Haemorhous mexicanus
Spinus psaltria

Woodpeckers

northern flicker
ladder-backed woodpecker

Falcons

American kestrel

Tyrant Flycatchers

western kingbird
Say's phoebe
western wood-pewee
ash-throated flycatcher
vermillion flycatcher

Crows and Jays

common raven

Penduline Tits and Verdins

verdin

Larks

horned lark

Swallows

tree swallow

Kinglets

ruby-crowned kinglet

Silky-flycatchers

phainopepla

Gnatcatchers and Gnatwrens

blue-gray gnatcatcher
black-tailed gnatcatcher

Wrens

cactus wren

Mockingbirds and Thrashers

northern mockingbird

Starlings

European starling

Old World Sparrows

house sparrow

Fringilline & Cardueline Finches & Allies

house finch
lesser goldfinch

Passerellidae

Amphispiza bilineata
***Spizella breweri*
Zonotrichia leucophrys
Passerculus sandwichensis

Icteridae

Icterus bullockii
Agelaius phoeniceus
Molothrus ater
Euphagus cyanocephalus
Quiscalus mexicanus

Parulidae

Leiothlypis celata
Setophaga coronata
Cardellina pusilla

Cardinalidae

Piranga ludoviciana

MAMMALIA

Leporidae

Lepus californicus
Sylvilagus audubonii

Muridae

Neotoma sp.

Sciuridae

Ammospermophilus leucurus
Otospermophilus beecheyi
Xerospermophilus tereticaudus

Canidae

Canis latrans

Rodentia

≥ one fossorial species (includes *Dipodomys sp.*)

Cricetidae

Neotoma sp.

New World Sparrows

black-throated sparrow
Brewer's sparrow
white-crowned sparrow
savannah sparrow

Blackbirds

Bullock's oriole
red-winged blackbird
brown-headed cowbird
Brewer's blackbird
great-tailed grackle

Wood-Warblers

orange-crowned warbler
yellow-rumped warbler
Wilson's warbler

Cardinals and Allies

western tanager

MAMMALS

Rabbits

black-tailed jackrabbit
desert cottontail

Mice, Rats, and Voles

wood rat (middens)

Squirrels

white-tailed antelope ground squirrel
California ground squirrel
round-tailed ground squirrel

Coyotes, Dogs and Wolves

coyote

Rodents

burrows

Mice, Rats and Voles

woodrat (middens)

KEY

- * = non-native species
- ** = special-status species
- cf. = compares favorably with
- sp. = plant identified to genus only

This list reports only plants and animals observed on the site by this study. Other species may have been overlooked or undetectable due to their growing season (plants) or their activity patterns and/or subterranean habitats (animals). Plants were identified from keys, descriptions and drawings in the Jepson Flora Project (2022). Plant nomenclature and systematics follows the Jepson Flora Project and/or United States Department of Agriculture, Natural Resources Conservation Service (2022). Nomenclature and taxonomy for fauna follows California Bird Records Committee (2022) for avifauna and California Department of Fish and Wildlife (2016a) for herpetofauna and mammals.