Environmental Checklist Form

Project title: Twentynine Palms Flood Control Channel Trail – Downtown Segment		
Lead agency name and address:	City of Twentynine Palms 6136 Adobe Road Twentynine Palms, CA 92277	
Contact person and phone number:	Travis Clark, Community Development Director 760-367-6799 X 1008 tclark@29palms.org	
Project location: The project site occurs on top of the south bank of the Twentynine Palms Flood Control Channel between Split Rock Avenue on the west and Adobe Road on the east in the City of Twentynine Palms.		
Project sponsor's name and address:	City of Twentynine Palms 6136 Adobe Road Twentynine Palms, CA 92277	
Existing General Plan designation: Floodway		Existing Zoning: Floodway

Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

The City of Twentynine Palms proposes Phase 1 of the regional Twentynine Palms Flood Control Channel Trail (Channel Trail) to provide a new non-motorized trail along the banks of the channel. This trail segment consists of 2000 linear feet of trail which will connect Split Rock Avenue (a Collector Road) on the west to Adobe Road (an Arterial Road) on the east within the Downtown area.

The western end of this project will link to the existing Split Rock Avenue Class I trail that extends north to El Paseo Drive, where existing trails and sidewalks connect to the Oasis Elementary School and the Twentynine Palms High School. This trail also extends to the Downtown.

On the eastern side of Adobe Road, the Channel Trail will connect to the existing sidewalks that lead to the Civic Center, containing City Hall, Veteran's Park, the Library, and the San Bernardino County Department of Social Services.

The Channel Trail will contain two trail heads, one at Split Rock Avenue and the other at Adobe Road.

The project will convert 2000 linear feet on the top of the south bank of the Flood Control Channel into a multi-purpose trail for non-motorized recreation. The project site, between Adobe Road and Split Rock Road, is currently disturbed, sandy and undulating with little vegetation. The project will result in a trail that has a bike path (concrete portion) and a running path (decomposed granite portion) running side-by-side for the entire length, plus

two trailheads that each include benches, trash receptacles, a bike rack, and native species landscaping. The Adobe Road trailhead will also feature a water bottle filler and a permanent public art installation. The Split Rock Road trailhead will include an educational plaque. The running path will have a 2-foot tall curb on the outer (northern) edge. Solar panel LED lane markers will be installed along the center line of the bike path at approximately 20-foot intervals. A six-foot tall ornamental wire fence will be installed approximately six-feet to the south along the bike path. The proposed trail will intersect with Tamarisk Avenue (a Local Street); adequate transition including accessible path striping will be provided per City standards.

Uses bordering the project area include:

- Multi-family and single-family residential, vacant lots and limited commercial uses to the north;
- A mix of vacant, residential and institutional lots to the west,
- Commercial uses to the east, and;
- Multi-family housing, vacant lots, institutional and commercial uses to the south.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

	Aesthetics		Agriculture and Forestry Resources		Air Quality
	Biological Resources		Cultural Resources		Energy
	Geology /Soils		Greenhouse Gas Emissions		Hazards & Hazardous Materials
	Hydrology / Water Quality		Land Use / Planning		Mineral Resources
	Noise		Population / Housing		Public Services
	Recreation		Transportation		Tribal Cultural Resources
	Utilities / Service Systems		Wildfire		Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)
On the basis of this initial evaluation:

	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
X	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Travis Clark — October 20, 2021

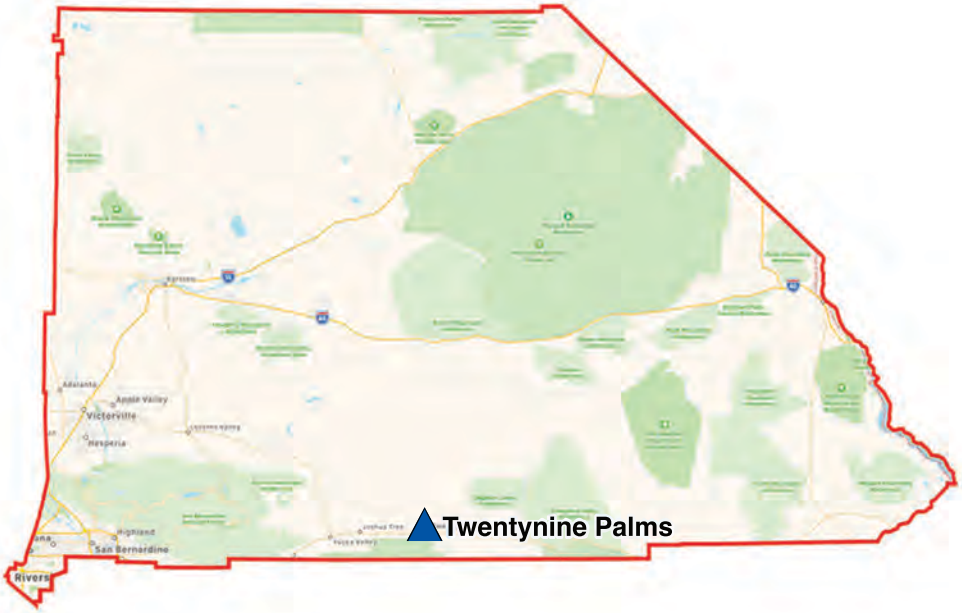
Signature — Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).
5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    a) Earlier Analysis Used. Identify and state where they are available for review.
    b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9) The explanation of each issue should identify:
    a) the significance criteria or threshold, if any, used to evaluate each question; and
    b) the mitigation measure identified, if any, to reduce the impact to less than significance.



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Twentynine Palms Flood Control Channel Trail
Downtown Segment
Regional Location Map
Twentynine Palms, California

Exhibit

1

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Twentynine Palms Flood Control Channel Trail - Downtown Segment
Vicinity Map
Twentynine Palms, California

Exhibit
2

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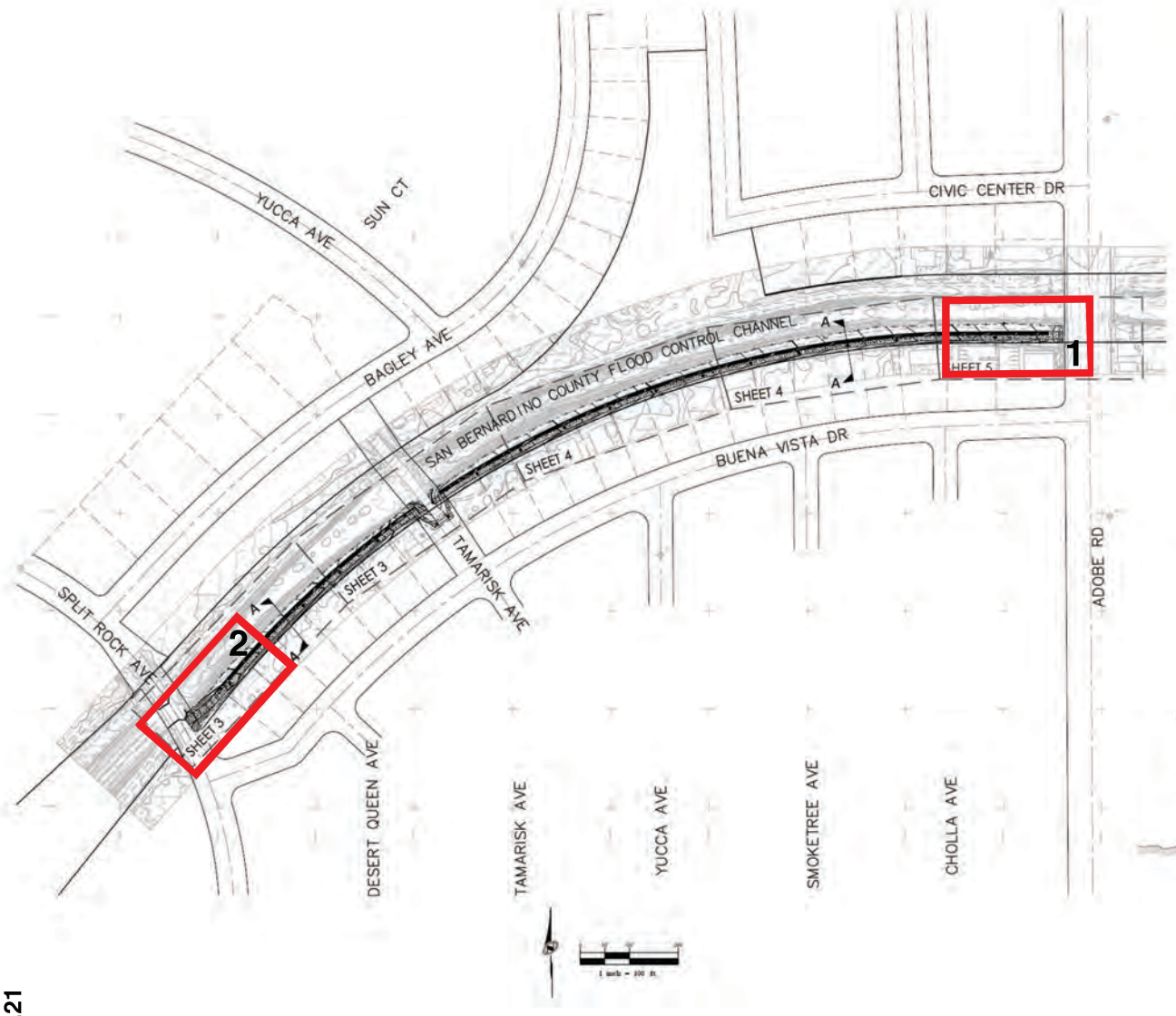
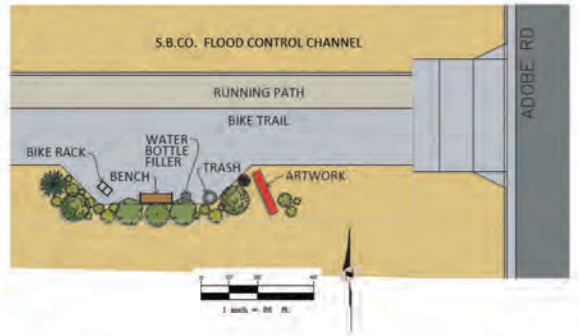
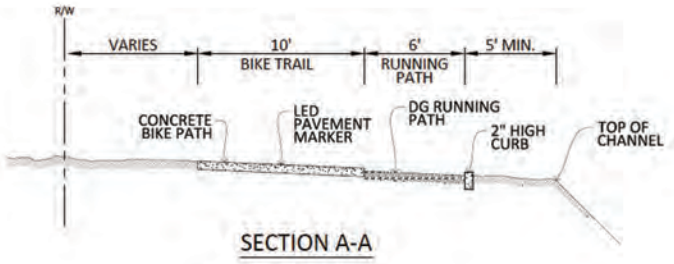
Twentynine Palms Flood Control Channel Trail - Downtown Segment
Project Location Map
Twentynine Palms, California

Exhibit
3







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Twentynine Palms Flood Control Channel Trail - Downtown Segment
Project Site Plan
Twentynine Palms, California

Exhibit
4

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

Sources: City of Twentynine Palms Development Code; Google Earth; City of Twentynine Palms General Plan.

Environmental Setting

The City of Twentynine Palms lies in the Morongo Basin in the southwestern corner of the Mojave Desert. In the basin, Joshua Tree National Park lies to the south of the City and the Marine Corps Ground Air Combat Center to the north. The Mojave Desert is separated from the Sonoran Desert to the south by the Little San Bernardino and Eagle Mountains, which are extensions of the Transverse Range. The western Mojave Desert is a flat, sparsely vegetated region interspersed with mountain ranges and dry lakes.

The subject site is in the downtown area north of Highway 62. The surrounding area consists of a flood control channel, vacant lands and residential and commercial uses in single-story structures. The proposed Channel Trail will have no negative impacts on the project area appearance, as described below.

Discussion of Impacts

a, c) Less Than Significant Impact. The City of Twentynine Palms is situated in the Mojave Desert to the north of Joshua Tree National Park (Exhibit 1, 2, and 3). Properties in the project vicinity generally enjoy close-up views of the Little San Bernardino Mountains located approximately 1.4 miles to the south, although partially obstructed by intervening development in the downtown area. Distant mountain views in all other directions are limited due to distance and topography, and to a large extent obstructed by intervening development, with only the ridge and/or top-range visible, if any. Therefore, the immediate scenic value is diminished in these directions.

The project will result in a 2,000-foot-long multi-purpose trail for non-motorized recreation on the top of the south bank of Twentynine Palms Flood Control Channel (Exhibit 4). The trail will contain a bike path (concrete portion) and a running path (decomposed granite portion) running side-by-side for the entire length, plus two trailheads that each include benches, trash receptacles, a bike rack, and native species landscaping. The Adobe Road trailhead will also feature a water bottle filler and a permanent public art installation, and the Split Rock Road trailhead will include an educational plaque. The project will result in no other vertical structures. The proposed trailhead amenities will be of limited size and buffered by landscaping at the trailheads. The project will have negligible impacts on obstructing scenic vistas, if any, at the trailheads with adjacent existing single-family residential and commercial buildings.

The project site is designated as Floodway on the City's Land Use & Zoning Map. The project does not conflict with the existing channel/drainage facilities nor the development standards set for the Floodway zone (Development Code Section 19.22.040). The proposed amenities and native species landscaping at trailheads will be designed to complement the surrounding natural and built environment and will not negatively impact the visual character or quality of public views in the project area. Overall, any project-related impacts on the local scenic vista, scenic quality and visual character will be less than significant.

b) **No Impact.** The project site occurs on an existing dirt access road that has been completely cleared and compacted on the south bank of the Twentynine Palms Flood Control Channel. There is sparse vegetation generally associated with the channel in the project vicinity. No significant trees, historic buildings or rock outcroppings are located on-site.

According to the California Department of Transportation, Twentynine Palms Highway (State Highway 62) is an "eligible State Scenic Highway." In the City's General Plan, a small portion of Highway 62 is designated as a scenic highway (excluding that portion of the Highway 62 between Sunrise Road and Wilshire Avenue). The project site is located approximately 0.21 miles north of Highway 62 within the downtown area, where Highway 62 is not designated a scenic highway. The site and limited proposed structures will not be visible from the Highway, due to distance and intervening development. Given the project location and its consistency with surrounding uses as described above, views along the highway are not expected to change and no impact to this scenic highway would occur.

d) **Less Than Significant Impact.** Buildout of the proposed project will result in a 2,000-foot-long multi-purpose trail in the downtown. The only project lighting will be the LED pavement markers in the middle of the trail at approximately 20-foot intervals. Such increase in lighting would be negligible compared to existing light and glare from the residential and commercial uses nearby. The proposed lighting will comply with the City's lighting standards (Development Code, Section 19.78), which require that outdoor lighting be designed to illuminate at the minimum level

necessary for safety and security and to avoid the harsh contrasts in lighting levels between the project site and adjacent properties. Compliance with City lighting standards will assure that lighting impacts associated with the proposed project will be less than significant.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. -- Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

Sources: San Bernardino Co. Important Farmland Map, 2008, CA Dept. of Conservation; Farmland Mapping and Monitoring Program, 1984-2018, CA Dept. of Conservation; General Plan Land Use Map; Google Earth.

Environmental Setting

In general, there is no active agricultural production in the Morongo Basin or the City of Twentynine Palms. Commercial farming has not occurred in the City for decades, likely due to its arid environment. Neither the General Plan nor the Development Code contain agricultural or forestry designations or districts, but in certain districts agricultural and related uses are allowed with a Conditional/Administrative Use Permit or other restrictions.

Discussion of Impacts

a) **No Impact.** The City and its surrounding communities were not mapped in the Farmland Mapping and Monitoring Program (FMMP) by the California Department of Conservation. The subject property is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, according to the California Dept. of Conservation, nor is it used for agricultural purposes. The project site and surrounding area consist of vacant land, a flood control channel, and residential, commercial, and institutional uses. The proposed project will not result in any changes to lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance by the California Dept. of Conservation, nor to lands used for agricultural purposes.

b) **No Impact.** There are no Williamson Act contracts on the subject property or properties in the surrounding area. The subject property is designated for Floodway use. The proposed project will have no impact on lands designated for agricultural use.

c-d) **No Impact.** The subject site does not contain forest land, timberland or timberland zoned for timberland production. Therefore, the project would not rezone forest land or timberland as defined by the Public Resources Code and Government Code. There will be no loss of forest land or conversion of forest land to non-forest use.

e) **No Impact.** As discussed above, the City does not have any agricultural or forest land, nor any land in active agricultural or timberland production uses. The development of the proposed project will not impact any agricultural or forest land. Given the absence of active farmlands in the City, there would be no indirect impact, due to the location or nature of the use, on conversion of Farmland to non-agricultural use. Given the absence of forest land in the City, the proposed project would have no indirect impact on conversion of forest land to non-forest use.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

Sources: City of Twentynine Palms General Plan; MDAQMD CEQA and Federal Conformity Guidelines; CalEEMod Version 2020.4.0; project materials.

Environmental Setting

The City of Twentynine Palms, including the project site, is located within the Mojave Desert Air Basin (MDAB) under the jurisdiction of Mojave Desert Air Quality Management District (MDAQMD). MDAQMD is by area the second largest of the 35 air districts in the State of California. All development within the City is subject to MDAQMD's 2016 "California Environmental Quality Act (CEQA) and Federal Conformity Guidelines." MDAQMD operates and maintains six regional air quality monitoring stations throughout its jurisdiction. The nearest monitoring station to the project site is located on Adobe Road in Twentynine Palms.

Criteria air pollutants are contaminants for which state and federal air quality standards (California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS)) have been established. MDAQMD exceeds state and federal standards for ozone (O_3) and PM_{10}. As a result, MDAQMD has adopted federal attainment plans for ozone and PM_{10} under the federal Clean Air Act. Ambient air quality in the MDAQMD, including the project site, does not exceed state and federal standards for carbon monoxide, nitrogen oxides, sulfur dioxide, lead, sulfates, hydrogen sulfide, or visibility reducing particles.

The project will contribute to a minimal increase in regional ozone and PM_{10} emissions during construction. The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 was used to project air quality emissions that will be generated by the proposed project (Appendix A), which are discussed below.

Discussion of Impacts

a) **Less than Significant Impact.** According to MDAQMD's 2016 CEQA and Federal Conformity Guidelines, a project is considered non-conforming if it conflicts with or delays implementation of any applicable attainment or maintenance plan. A project is conforming if it complies with all applicable District rules and regulations, complies with all proposed control measures that are not yet adopted from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s), or is directly included in the applicable plan. Conformity with growth forecasts can be established by demonstrating that the project is consistent with the land use plan that was used to generate the growth forecast.

MDAQMD works directly with the San Bernardino County Association of Governments (SANBAG), San Bernardino County Transportation Authority (SBCTA), and local governments, and cooperates actively with all state and federal government agencies. SBCTA adopted the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (2020 RTP/SCS) developed by the Southern California Association of Governments (SCAG). The Demographics & Growth Forecast Technical Report of the RTP/SCS forms the basis of land use and transportation controls of air quality management plans. An example of a non-conforming project would be one that increases the gross number of dwelling units, increases the number of trips, and/or increases the overall vehicle miles traveled in an affected area relative to the applicable land use plan.

The project proposes the conversion of a dirt road to a multi-use non-motorized trail on the south bank of the Twentynine Palms Flood Control Channel. The subject property is designated for Floodway use in the City's General Plan. The project would not induce population growth and is consistent with the General Plan land use designation because it will not obstruct or impact the flood control function of the subject site. The project will serve non-motorized travel only and will not generate vehicular trips at buildout (except for incidental trail maintenance). The project will most likely reduce vehicle miles traveled in the project area by adding new and linking existing bike and pedestrian facilities, and thus will likely result in lower emissions than those anticipated in growth forecasts based on the existing floodway use. As demonstrated below, the project will not generate emissions that exceed thresholds for criteria pollutants including pollutants for which the District is in nonattainment. In addition, the proposed project will also be subject to rules and guidelines set forth by MDAQMD. Overall impacts with regard to conformity with applicable air quality plans and guidelines will be less than significant.

b) **Less Than Significant Impact.** Criteria air pollutants will be released primarily during construction of the proposed project and minimally during operation, as shown in Tables 1 and 2. **Table 1** summarizes short-term construction-related emissions, and **Table 2** summarizes ongoing emissions generated during operation. Note that operational emissions are minimal because they come from long-term surface off gassing only.

The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 was used to project air quality emissions that will be generated by the proposed project (Appendix A).

Construction Emissions

For analysis purposes, it is assumed that construction will occur over a 4-month period starting June 2022 with buildout in the same year. The construction period includes all aspects of project development, including site preparation, grading, paving, construction/installation of amenities, and application of architectural coatings.

As shown in **Table 1**, emissions generated by construction activities will not exceed MDAQMD thresholds for any criteria pollutant during construction. The data reflect average daily unmitigated emissions over the 4-month construction period, under summer weather conditions. The analysis assumes that materials are balanced onsite, as described by the project engineer. Applicable standard requirements and best management practices include, but are not limited to, the implementation of a dust control and management plan in conformance with MDAQMD Rule 403.2, phased application of architectural coatings and the use of low-polluting architectural paint and coatings per MDAQMD Rule 1113. Given that criteria pollutant thresholds will not be exceeded, and standard best management practices will be applied during construction, impacts will be less than significant.

Table 1
Maximum Daily Construction-Related Emissions Summary (pounds per day)

Construction Emissions[1]	**CO**	**NO_x**	**ROG**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Daily Maximum	13.79	17.01	2.52	0.03	7.91	4.13
MDAQMD Thresholds	**548.00**	**137.00**	**137.00**	**137.00**	**82.00**	**65.00**
Exceeds?	**No**	**No**	**No**	**No**	**No**	**No**

[1]Summer unmitigated emissions.
Emission Source: CalEEMod model, version 2020.4.0.

Operational Emissions

Operational emissions are ongoing emissions that will occur over the life of the project. They include area source emissions only for the proposed project, as operation of the non-motorized trail will not generate emissions from energy demand (electricity/natural gas) or mobile sources (vehicle).

Table 2 provides a summary of projected emissions during operation of the proposed project at buildout. As shown below, operational emissions are minimal and will not exceed MDAQMD thresholds of significance for any criteria pollutants. Impacts related to operational emissions will be less than significant.

Table 2 Maximum Daily Operational-Related Emissions Summary (pounds per day)						
Operational Emissions[1]	**CO**	**NO_x**	**ROG**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Daily Maximum	0.00346	0.00003	0.02020	0.00000	0.00001	0.00001
MDAQMD Thresholds	**548.00**	**137.00**	**137.00**	**137.00**	**82.00**	**65.00**
Exceeds?	**No**	**No**	**No**	**No**	**No**	**No**

[1]Summer unmitigated emissions.
Emission Source: CalEEMod model, version 2020.4.0.

Cumulative Contribution: Non-Attainment Criteria Pollutants

A significant impact could occur if the project would make a considerable cumulative contribution to federal or state non-attainment pollutants. The Mojave Desert portion of the MDAB is classified as a federal "non-attainment" area for PM_{10} and ozone. Cumulative air quality impacts are evaluated on a regional scale (rather than a neighborhood scale or city scale, for example) given the dispersing nature of pollutant emissions and aggregate impacts from surrounding jurisdictions and air management districts. Any development project or activity resulting in emissions of PM_{10}, ozone, or ozone precursors will contribute, to some degree, to regional non-attainment designations of ozone and PM_{10}.

Cumulative impacts are similar to direct and indirect impacts of the project, which the project contributes to. In the case of a multi-use, non-motorized trail project, the proposed project has a cumulative impact with all other development projects, from the standpoint of each type of impact (cumulative construction emissions, operational energy consumption etc.). No similar cumulative projects are identified in the project area at this time.

Currently, MDAQMD's approach to assessing cumulative impacts is based on the fact that the MDAQMD Attainment Plan forecasts attainment of ambient air quality standards in accordance with the requirements of the California Clean Air Act (CCAA), which takes into account the SANBAG forecasted future regional growth. Therefore, if all projects are individually consistent with the growth assumptions within the MDAQMD's Attainment Plan, future development would not impede the attainment of ambient air quality standards.

As indicated under a), above, the proposed project is not growth-inducing and is consistent with the uses allowed by the General Plan land use designation. Therefore, the project is expected to be consistent with the growth assumptions within the MDAQMD's Attainment Plan. As discussed above, the proposed project would not generate construction or operational emissions that exceed the MDAQMD's recommended regional thresholds of significance. Specifically, buildout of the project would not exceed thresholds for PM_{10} and ozone precursors for which the District is in nonattainment, and over the long term will have only fractional impacts on these emissions. Therefore, the proposed project will result in minimal incremental, but not cumulatively considerable impacts on regional PM_{10} and ozone levels.

Summary

As shown above, both construction and operation of the proposed project will result in criteria emissions well below the MDAQMD significance thresholds, and neither would violate any air quality standard or contribute substantially to an existing or projected air quality violation. Overall, impacts related to construction and operation will be less than significant and are not cumulatively considerable from a non-attainment standpoint.

c) **Less Than Significant Impact.** According to the MDAQMD CEQA and Federal Conformity Guidelines, residences, schools, daycare centers, playgrounds and medical facilities are considered sensitive receptor land uses. The following project types proposed for sites within the specified distance to an existing or planned (zoned) sensitive receptor land use must be evaluated:

- Any industrial project within 1,000 feet;
- A distribution center (40 or more trucks per day) within 1,000 feet:
- A major transportation project (50,000 or more vehicles per day) within 1,000 feet;
- A dry cleaner using perchloroethylene within 500 feet;
- A gasoline dispensing facility within 300 feet.

The project does not propose any of the above land uses, and therefore further evaluation is not required. As demonstrated above, the proposed project would not generate construction or operational emissions that exceed the MDAQMD's recommended regional thresholds of significance. Therefore, impacts to sensitive receptors will be less than significant.

d) **Less Than Significant Impact.** In general, typical land use development that cause potential odor problems include wastewater treatment plants, refineries, landfills, composting facilities and transfer stations. The occurrence and severity of odor impacts depend on such factors as the nature, frequency, and intensity of the source, wind speed and direction, and the sensitivity of the receptors. While offensive odors rarely cause physical harm, they can be unpleasant and raise public concern.

The proposed project consists of a multi-use non-motorized trail and is not expected to generate objectionable odors at project buildout. Short-term odors associated with paving and construction activities could be generated; however, any such odors would be localized and quickly disperse below detectable levels as distance from the construction site increases. Therefore, impacts from objectionable odors are expected to be less than significant.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?		X		
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		X		
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (General Plan)			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

Sources: Google Earth; City of Twentynine Palms General Plan; Delineation of Jurisdictional Waters, Twentynine Palms Channel Trail Project, prepared by Wood Environment & Infrastructure Solutions, Inc., August 2021; Biological Resources Assessment Report - Twentynine Palms Channel Trail Project, prepared by Wood Environment & Infrastructure Solutions, Inc., August 2021; City of Twentynine Palms General Plan Update Draft Environmental Impact Report (2010).

Environmental Setting

The City of Twentynine Palms is located within the Mojave Desert biome in a portion of the western Mojave Desert in San Bernardino County, California. The City participates in the West Mojave Plan, which, once adopted, will serve as a habitat conservation plan for both public and private entities in the West Mojave Desert in California. It will encompass approximately 3.6 million acres of public land and 2.8 million acres of private land that will

include deserts throughout San Bernardino, Kern, Inyo, and Los Angeles Counties. The plan includes requiring focused surveys for Special Status Species, burrowing owl, and sensitive plants where suitable habitat is present.

The project area is characterized by patches of natural/disturbed open space, residential and commercial developments, a flood control channel, and a network of dirt and paved roadways. The project site occurs on an existing dirt access road that has been completely cleared and compacted on the south bank of the Twentynine Palms Flood Control Channel.

The following analysis on potential impacts to biological resources associated with the proposed project is based on the project-specific Biological Resources Assessment and Delineation of Jurisdictional Waters conducted by Wood Environment & Infrastructure Solutions, Inc (Appendices B & C), the City of Twentynine Palms General Plan and its draft EIR.

Discussion of Impacts

a) **Less Than Significant Impact with Mitigation.** The project proposes a 2,000-foot-long non-motorized trail on the south bank of the Twentynine Palms Flood Control Channel, which is a manmade drainage channel that traverses the City. The proposed trail will occur within an existing dirt access road that borders the southern edge of the drainage channel in downtown Twentynine Palms. The project site is bounded on the west by Split Rock Avenue and open space, by Adobe Road and commercial development on the east; by residential development and Buena Vista Drive on the south, and by disturbed open space, residential development, and Mesquite Springs Road (dirt) to the north.

The portion of the Twentynine Palms Channel in the project area is a trapezoidal earthen channel with a dirt road along the south bank. Three paved streets (Split Rock Avenue, Tamarisk Avenue and Adobe Road) cross the channel, with the first two being Arizona Crossings and Adobe Road containing a three-section box culvert. Except for the paved streets, the project area contains mostly bare soil with scattered vegetation within the channel. A total of 18 plant species were identified in the area, most of which are associated with the drainage channel and 17% are non-native species. This is likely due to the project location near residential and commercial development and in an area that has experienced significant development and disturbance in the past. The number of vertebrate species detected on the project site during the field survey was also low, a total of nine including one reptile, six birds and two mammals. No sensitive plant or wildlife species were observed during the survey.

Based on the literature review, the project biological report identified 22 sensitive biological resources known to occur in the vicinity (within a five-mile radius) of the project site. The ten sensitive plant species known from the general project vicinity are not expected to occur on the project site due to lack of habitat, incorrect elevational range, and unsuitable microhabitat characteristics. One sensitive habitat, the desert fan palm oasis woodland, does not occur nor would be supported in the project area due to existing development.

Two sensitive reptile species known from the project vicinity, red diamond rattlesnake (*Crotalus ruber*) and desert tortoise (*Gopherus agassizii*), are considered absent from the project site. Despite mapping showing a potential CNDDB record (1945) north of the site, Twentynine Palms is located out of the currently accepted range of the red diamond rattlesnake, whose northeastern limit is known to be Pioneertown and Morongo Valley to the west. In addition, habitat on the project site is too disturbed to support this species. The desert tortoise is federally and state listed as a threatened species, and a habitat assessment was performed to address its potential to occur in and/or utilize the project site and vicinity. A careful examination of the both the project site and adjacent undeveloped areas (including four small vacant lots between single family dwellings to the south) did not reveal any desert tortoise sign or any burrows capable of supporting desert tortoise.

The burrowing owl (*Athene cunicularia*) is designated a Species of Special Concern (SSC) by the state and is also protected by the federal Migratory Bird Treaty Act (MBTA). The open nature of the project site and habitat found along the manmade drainage channel have low potential to host burrowing owls. During the field survey, a habitat assessment for burrowing owls was performed on the project site in accordance with state guidelines. The survey and assessment identified no burrowing owls, burrowing owl sign (feathers, pellets, or whitewash) or burrows or burrow surrogates that could support burrowing owls. While the site conditions do not warrant focused burrowing owl surveys, pre-construction burrowing owl surveys will be required to avoid/mitigate any potential impacts on burrowing owls, should they move to the project area prior to construction (Mitigation Measure BIO-1).

Prairie falcons (*Falco mexicanus*) and loggerhead shrikes (*Lanius ludovicianus*) are not federally or state designated as endangered or threatened. The project site does not offer nesting habitat for these species. There exists a low/moderate potential for prairie falcons and loggerhead shrikes to forage over the general project area. The proposed trail would not impact the sparse vegetation in the project area except for the temporary construction period, and would provide additional native species landscaping at trailheads at buildout. The finished trail could therefore continue to provide foraging habitat for these species, and impacts to these birds are expected to be less than significant. The MBTA protects most native and migratory birds and requires a pre-construction survey for nesting birds if construction is to occur during the nesting season (Mitigation Measure BIO-2).

In summary, the project biological resource assessment determined that no adverse impacts would occur to federally and state designated sensitive species. Potential impacts to burrowing owls and nesting birds would be less than significant with the implementation of Mitigation Measures BIO-1 and BIO-2.

b-c) Less Than Significant Impact with Mitigation. The project site occurs on a cleared and compacted dirt road on the south bank of a manmade drainage channel. The soils observed within the survey area consist of coarse sandy soils with no sign of wetland soil indicators. No wetlands were observed in the project area.

There is sparse vegetation in the project vicinity generally associated with the channel, and 17% of the identified 18 plant species are non-native. None of the plants observed are considered hydric, nor do they have wetland indicator status. Many of the plants are generally associated with dry desert washes but do not indicate the presence of wetland conditions as defined by U.S. Army Corps of Engineers (USACE) and the EPA.

A jurisdictional delineation was conducted for the proposed project in August 2021. The project area contains one jurisdictional drainage, which is a soft bottom engineered channel and part of the Twentynine Palms Flood Control Channel. The on-site drainage is ephemeral and only conveys flows after rain events. The drainage flows to the east and at times of high rain, would flow into a dry lakebed west of Ironage Road and north of SR 62.

Some portions of the channel contain riprap, but it is not contiguous throughout the project area. The National Wetlands Inventory (NWI) mapper (Figure 4, Appendix C) shows the drainage within the survey area classified as Riverine (R), Intermittent (4), Streambed (SB), Intermittently Flooded (J), Excavated (x) (R4SBJx) which was confirmed by observation in the field. The trapezoid channel was determined to have California Department of Fish and Wildlife (CDFW) jurisdiction to the top of the bank, and Regional Water Quality Control Board (RWQCB) jurisdiction at the base of the channel. The drainage is ephemeral and therefore is not currently under USACE jurisdiction.

The drainages within the survey area contain 0.72 acres of CDFW jurisdictional areas, and 0.23 acres of RWQCB jurisdictional areas, located at each of the crossings with City streets, where work may be conducted as part of the trail project. The jurisdictional delineation survey area is larger than the proposed trail area, and thus these numbers are conservative estimates. With up to 0.72 acres of project area under CDFW jurisdiction, a 1602 Streambed Alteration Agreement is required for all activities that alter streams and their associated riparian habitat, regardless of the extent of impacts. In order to reduce impacts to Waters of the State, the City must obtain a Streambed Alteration Agreement by submitting a copy of this Initial Study in addition to the formal application materials and fee (Mitigation Measure BIO-3).

The project area is located within the jurisdiction of the Colorado River RWQCB (Region 7). The RWQCB regulates impacts on Waters of the State of California 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 properties of the waterway. With up to 0.23 acres of project area under RWQCB jurisdiction, a Water Quality Certification is required for all activities that discharge into the waterways. As with the requirements of CDFW, in order to reduce impacts to Waters of the State, the City must obtain a Water Quality Certification by submitting a copy of this Initial Study in addition to the formal application materials and fee (Mitigation Measure BIO-3). With the implementation of this mitigation measure, impacts to Waters of the State will be less than significant.

d) **Less Than Significant Impact.** The project area is located in the downtown area and has been moderately to greatly altered from its natural state. The project site is surrounded/bisected by roadways and near residential and commercial developments. As discussed above, wildlife observed at the site is not abundant or diverse. Although it is used by common species and may provide marginal habitat for migratory birds and certain special status species, it is not identified as a nursery site.

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. Fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. As a result of a state interagency workshop, the Joshua Tree-Twentynine Palms Connection was designated within and near the City. The connection occurs in an ecological transition zone between the Mojave and Sonoran Desert eco-regions. The linkage connects areas of open space in Joshua Tree National Park and the Marine Base. The connection includes 307,807 acres, of which approximately 71 percent currently receives some level of conservation protection. The majority of the City is outside the connection area (General Plan Exhibit CO-3). Generally, four linkages occur across the City: two in the west, one in the north, and one in the east. The project area is not designated as or near any Wildlife Linkage Areas. Less than significant impacts are expected as a result of the project regarding wildlife corridors and nursery sites.

e-f) **No Impact.** As noted, the West Mojave Plan is still in development. The City of Twentynine Palms General Plan establishes goals and policies to ensure that natural resources, including the Oasis of Mara and desert tortoise within the Mesquite Dunes are protected. The San Bernardino County General Plan designates portions of the City's Sphere of Influence (SOI) as RC (Resource Conservation) land use district. The County's General Plan also includes a Biotic Resources (BR) Overlay to identify areas that include habitat for sensitive species. The project site is identified as Desert Tortoise – Sparse Population habitat and Burrowing Owl habitat on the County BR Overlay map.

The proposed project will occur within the City of Twentynine Palms (not the SOI) and will follow mitigation measures specified in the project-specific biological report, including surveys and potential measures for burrowing owls and nesting birds. As discussed above, the project biologist conducted a habitat assessment for the desert tortoise and determined that it is absent from the project site. Therefore, it will have no impact on the overlay districts nor any conflict with City or county regulations and plans.

Mitigation Measures:

BIO-1 Because the project site contains suitable potential habitat for burrowing owls, two take avoidance burrowing owl surveys shall be conducted to ensure that no owls have occupied the site subsequent to the project biological resources assessment.

CDFW recommends that the first survey take place between 14 and 30 days prior to ground disturbance, and the second survey within 24 hours of any ground-breaking activities.

BIO-2 If construction is to occur during the MBTA nesting season (February 1 – August 31), at least one nesting bird survey should be conducted by a qualified biologist, and more if deemed necessary by the biologist, ending no less than 3 days prior to grading. All vegetation and suitable nesting habitat (including open ground) on the project site, whether or not it will be removed or disturbed, shall be surveyed for nesting birds. If active nests of any native birds are found on the site, they will be avoided until after the young have fledged. If there are no nests present, ground disturbance activities can move forward. Non-occupied raptor nests are protected under Section 3505.5 of the State Fish and Game Code and permission must be granted by CDFW to remove them.

BIO-3 Prior to any ground disturbance on the site, the applicant shall secure a 1602 agreement from the CDFW and a Water Quality Certification from the RWQCB. The permits will include mitigation measures to reduce the impacts of the 0.73 acres of CDFW jurisdictional waters, and the 0.23 acres of RWQCB jurisdictional waters, respectively. These measures could include the purchase of land off-site or other measures as determined by the CDFW and the RWQCB.

Monitoring:

BIO-A Prior to the issuance of any permit to allow ground disturbance on the site, the City will receive and file all technical surveys and secure permits in the project file. **Responsible Parties:** Project proponent, project biologist, Planning Department, City Engineer.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES -- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?				X

Sources: Twentynine Palms General Plan (2012); Historical/Archaeological Resources Survey Report – Twentynine Palms Bike Trail Project, prepared by CRM TECH, August 11, 2021.

Environmental Setting

The City is located on the southern edge of the Mojave Desert. Archaeologists generally divide prehistory in the Mojave Desert into five periods marked by changes in archaeological remains that date back some 12,000 years. The Lake Mojave period (ca. 8000-5500 B.C.) is associated with small mobile groups of hunters and gatherers who inhabited the Mojave Desert. These groups continued to inhabit the region during the Pinto Period (ca. 5500-2500 B.C.), and relied more on ground foods, small and large game animals, and the collection of plants. Distinct cultural changes occurred during the Newberry Period (ca. 1500 B.C.-500 A.D.), when small residential groups moved between select localities, established a geographically expansive land-use pattern and engaged in long-distance trade. The two ensuing periods, Saratoga (ca. 500-1200 A.D.) and Tecopa (ca. 1200-1770s A.D.), are characterized by seasonal group settlements near accessible food sources and the intensification of the use of plant foods, as evidenced by groundstone artifacts and the evolution of pottery.

The City is located in an area historically occupied by two Native American groups, the Serrano and the Chemehuevi. The Serrano's homeland was centered in the nearby San Bernardino Mountains but also included lowlands along both flanks of the mountain range. The Chemehuevi, a subgroup of the Southern Paiute, traditionally occupied the Mojave Desert east to the Colorado River. The Serrano settled mostly near where flowing water emerged from the mountains, while the Chemehuevi, with fewer people spread over a much wider area, cultivated, gathered, and hunted in the open deserts, and were also known for their agricultural practices. Members of each tribe gathered at important base camps or villages for annual ceremonies and tribal interaction with neighboring groups.

In the Twentynine Palms area, the Serrano and the Chemehuevi relied on the waters of a desert oasis located approximately 0.94 miles to the southeast of the project location. The Serrano first settled in the oasis and named it *Maara*, "the place of little springs and much grass". The Chemehuevi began to settle around the oasis in the mid-19th century.

While European contact may have occurred as early as 1771 or 1772, direct European influence on Serrano and Chemehuevi lifeways did not begin until the mission system expanded to the edge of Serrano territory in the 1810s. By the early 20th century, the majority of Serrano and Chemehuevi population was incorporated into the reservation system. Today, most Serrano descendants live on the San Manuel and the Morongo Indian Reservations, while the Chemehuevi are divided among the Chemehuevi, the Colorado River, and the Morongo Reservations.

Non-Native settlement first occurred in the Twentynine Palms area by the late 1800s, when prospectors sought their fortunes in nearby gold camps. The first pioneer homesteaders arrived in 1910, and a small community started to grow. In 1952, the U.S. Defense Department established a marine base north of the oasis for glider training, now known as the U.S. Marine Corps Air Ground Combat Center. The City of Twentynine Palms was incorporated March 23, 1987.

Discussion of Impacts

a) **No Impact.** Between April and August 2021, CRM TECH performed a cultural resources study on the project site to determine whether the project would cause a substantial adverse change to any "historical resources," as defined by CEQA, that may exist in or around the project area. The study included a historical/archaeological resources records search, historical background research, a Native American Sacred Lands File search, and an intensive field survey.

The records search was conducted at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System. According to SCCIC records, the project site has not been surveyed for cultural resources in the past, and no historical or archaeological resources have been recorded within the project vicinity. SCCIC records identified eleven previous studies that recorded 24 historical/archaeological resources within a half-mile radius. Two of the recorded resources were prehistoric (i.e., Native American) in nature. Located roughly 800 feet and nearly a half-mile to the north of the project site, these two resources consist of scatters of andesite flakes with a few stone tools and, in one case, an associated quarry area. The other 22 sites dated to the historic period, and included segments of State Route 62, the Donnell Hill water tank, and 20 buildings or groups of buildings (mostly commercial) dating to the 1930s-1960s. Given the distance of these recorded resources from the project site, they will not be impacted by the project development.

The only manmade features in the project area are the Twentynine Palms Flood Control Channel and intersecting roadways (Split Rock Avenue, Tamarisk Avenue, and Adobe Road), all of which date to the late historic period. The channel and roadways are working components of the City's modern infrastructure and do not demonstrate any distinctively historical character; therefore, these common infrastructure segments are not considered potential historical resources for CEQA purposes. During the field survey, scattered domestic refuse was noted within the

project boundaries, including a large refuse deposit near the Adobe Road bridge over the channel. All refuse items are clearly modern in origin and none of them demonstrate any historical or archaeological interest.

No other potential historical resources were encountered within the project area during the records search and field survey. Therefore, the study concludes that no potential "historical resource" defined by CEQA exist within or adjacent to the project area that would require further study and formal evaluation, and the project will have no impact on any historical resource as defined in CEQA Section 15064.5.

b) Less Than Significant Impact with Mitigation. On April 27, 2021, CRM TECH submitted a written request to the State of California Native American Heritage Commission (NAHC) for a records search in the commission's Sacred Lands File. NAHC reported no Native American cultural resource(s) in the project vicinity. However, the NAHC recommended that eight local Native American groups be consulted for further information.

Between April 27 and June 14, 2021, CRM TECH also contacted the nearby Twentynine Palms Band of Mission Indians for additional information on potential Native American cultural resources in the project vicinity and to coordinate with the tribe on their participation in the archaeological field survey. The tribe did not provide any comments or information on potential Native American cultural resources in or near the project area, but had a monitor participate in the field survey.

The field survey did not encounter any potential historical resources, either prehistoric or historical in origin, within the project area. As discussed above, scattered modern refuse, of no historical or archaeological interest, was observed on the project site, including a large refuse deposit near the Adobe Road bridge over the channel. The ground surface in the project area has been cleared and leveled in association with construction and maintenance of the channel, and is not native soil or land.

Additionally, the City has undertaken independent consultation under AB 52, which is ongoing. If the City receives any response from the tribes, any requests and input from consultation will be included in conditions of approval and/or added to this Initial Study. This process is described in Section XVII, Tribal Cultural Resources.

Based on the findings stated above, the cultural resources study concluded that no other cultural resources investigation will be necessary for the project unless construction plans change to include areas not covered. In the unlikely event that unknown archaeological resources are uncovered during project construction, Mitigation Measure CUL-1 provides that all work within 50 feet of the discovery will be stopped until a qualified archaeologist can identify the potential resource and propose mitigation if the resource is culturally significant. Work shall resume after

consultation with the City and following implementation of the recommendations of the archaeologist and/or tribal monitor. This mitigation measure further ensures that any potential impact on buried archaeological resources remain less than significant.

c) **No Impact.** No cemeteries or human remains are known to occur onsite. The project site is not located near a known Native American burial site, and is a modern construct from the creation of the flood control channel. It is unlikely that human remains will be uncovered during project development. Should human remains be uncovered during grading of the site, California law requires that all activity stop, that the coroner be notified to determine the nature of the remains and whether Native American consultation is needed. This requirement assures that there will be no impact to cemeteries or human remains.

Mitigation Measures:

CUL-1 If buried cultural materials are encountered during any earth-moving operations associated with the project, all work within 50 feet of the discovery should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the find(s). The archaeologist shall determine what further steps are required, and when work can resume.

Monitoring:

CUL-A If resources are uncovered, the project archaeologist shall prepare a report of findings and provide it to the City within 30 days of completion of the investigation of the find(s).
Responsible Parties: Project archaeologist, City Planning Department

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
VI. ENERGY -- Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

Source: Twentynine Palms General Plan (2012).

Environmental Setting

Nuclear energy, fossil fuels (e.g. oil, coal and natural gas) and renewable sources (e.g. wind, solar, geothermal and hydropower) are various sources of energy. Southern California Edison (SCE) provides electricity to the City. Southern California Gas Company (SoCalGas) provides natural gas service to the City. Natural gas is mainly utilized for water heaters and heating of homes, as well as a broad range of commercial and industrial equipment. Both SCE and SoCalGas offer various programs and incentives for all users to help reduce energy consumption.

Discussion of Impacts

a, b) Less Than Significant Impact. The proposed project will result in a multi-use non-motorized trail. The project will utilize energy resources during construction only. Construction related energy demand comes from operation of construction equipment and manufacturing of construction materials.

Electricity consumed during Project construction would vary throughout the construction period based on the construction activities being performed. Activities requiring electricity could include powering outdoor security or worksite lighting, operation and charging of electronic equipment, and powering a temporary worksite office or trailer. Such electricity demand would be temporary, nominal, and would cease upon the completion of construction. Construction of the proposed trail would not involve the consumption of natural gas. Fuel consumed by construction equipment, such as gasoline and diesel, would be the primary energy resource expended over the course of construction. The project will adhere to the required state Low Carbon Fuel Standard for construction equipment and heavy-duty vehicle efficiency standards, which will reduce wasteful fuel consumption and help maximize fuel efficiency.

During operation, the project serves pedestrians, runners and bicyclists only and will not generate vehicle trips. The solar-panel-powered LED lane markers to be installed in the biker lane will not be connected to the grid or consume additional energy beyond that generated by the project solar panels. At buildout, the project

will provide a bike path and running path that connect to the existing Split Rock Avenue Class I trail that link existing trails and sidewalks to various destinations including schools and downtown. On the eastern side, the proposed trail will connect to the existing sidewalks that lead to the Civic Center, containing City Hall, Veteran's Park, the Library, and the San Bernardino County Department of Social Services. The project will encourage alternative transportation and help reduce fuel consumption related to vehicular travel. The project implements City's General Plan policies on alternative transportation (Policies CO-4.11 and CI-7.1).

In summary, the project will have less than significant impacts on energy resources and will not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS -- Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?				X
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X

Sources: Twentynine Palms General Plan Update (2012); of Twentynine Palms General Plan Update Draft Environmental Impact Report (2010); USGS Seismic Intensity; http://seismometer.ergondesign.net/appPages/scale-usgs-EN.html; “The magnitude distribution of earthquakes near Southern California faults,” published by Page et al., 2011; http://onlinelibrary.wiley.com/doi/10.1029/2010JB007933/ full.

Environmental Setting

The City is located within a wedge-shaped fault block known as the Mojave Block. The Mojave Block is located at the junction of two distinct geomorphic provinces: the Eastern Transverse Ranges Province, a region of low to moderately high mountains that includes

Joshua Tree National Park, the Little San Bernardino Mountains, the Pinto Mountains, and several ranges to the southeast; and the Mojave Desert Province, an arid region of alluvial fans, expansive desert plains, dry lakebeds and scattered mountain ranges. The Mojave Block is bounded by the Garlock Fault to the north, the San Andreas fault system to the west and southwest, and the southern Death Valley fault zone, Granite Mountains, and Packard Well faults to the east.

In the Twentynine Palms area, the trace of the Pinto Mountain Fault is recognized by a pressure ridge and divides into two splays. The northern splay of this fault is mostly buried by Quaternary valley fill but emerges where it joins the west splay of the Mesquite Lake Fault east of the City limits.

The region is susceptible to a range of geologic hazards, including ground rupture, major ground shaking, slope instability, and collapsible and expansive soils.

Soils

Soils in the City range from wind-blown sand and Playa sands on the valley floor, to igneous and metamorphic rock in the surrounding mountains. The project site contains light tan, fine- to coarse-grained sands mixed with small rocks, and imported soils are evident. Aside from the channel, the project area is generally flat with a slight incline to the west, occurring at an elevation range of approximately 1,985 feet to 2,015 feet above mean sea level.

Discussion of Impacts

a) i) **No Impact.** In the City of Twentynine Palms, two main faults and several secondary faults are identified by the State of California under the criteria of the Alquist-Priolo Act: the Pinto Mountain fault in a westerly direction and Mesquite Lake fault in a southeasterly direction. Secondary faults to these include several short traces both north and south of the main trace of the Pinto Mountain fault, and the Airfield and East Airfield faults to the east of the Mesquite Lake fault. All of these faults are potential sources of strong ground shaking and surface fault rupture.

According to the General Plan Safety Element and Land Use Element (Exhibit LU-6), the Pinto Mountain fault runs west of the project site, and the Alquist-Priolo Fault Zone ends at approximately 0.3 miles west of the project site. Since the project site is not located within any fault zone, fault rupture is not expected on the site. No impacts associated with fault rupture from the nearest Pinto Mountain Fault Zone are expected on the project site.

ii) **Less Than Significant Impact**. The project site is located in a seismically active region where local and regional faults can produce severe ground shaking. The two main faults crossing the City, Pinto Mountain fault and Mesquite Lake fault, have the potential of generating earthquakes of up to 7.3 magnitude on the Richter scale. The project proposes a multi-use non-motorized trail, which consists of open space only with limited amenities such as benches, a public art installation and a

water bottle filler. The proposed trail will serve non-motorized travel and recreational purposes for runners, cyclists, and pedestrians, and will not expose people to potential substantial adverse effects due to strong seismic ground shaking. Any project-related impacts will be less than significant.

iii) **Less Than Significant Impact**. Earthquake shaking can cause several types of ground failure including liquefaction and related hazards, collapse and slope failure (see subsection (iv) below).

Liquefaction typically occurs within 50 feet of the ground surface, in areas where fine- to medium-grained sandy to silty soils and shallow groundwater occur together. Lateral spreading, a type of liquefaction-induced failure, is the lateral displacement of surficial blocks of soil atop a liquefied layer, often described as shallow landslides. The General Plan has identified areas where ground failure could occur in the Liquefaction Susceptibility Overlay (Exhibits LU-6 and SF-1) and requires site-specific geotechnical studies that assess the potential for ground failure prior to project approval if a project occurs in this overlay. The project site is not located in or near an area covered by the Liquefaction Susceptibility Overlay. Therefore, impacts associated with ground failure including liquefaction will be less than significant.

iv) **No Impact.** Landslides generally occur in loosely consolidated, wet soil and/or rocks on steep sloping terrain. The project site is located approximately 1.35 miles north of the Queen Mountain foothills. The project site and surrounding area are characterized by generally flat topography except for the shallow, well-maintained flood control channel. The project area is not located within the Hillside Overlay or designated as an area susceptible to hazards associated with slope instability (GP EIR Exhibit 4.6-6). The project will result in a flat surface compacted and paved with asphalt/concrete or decomposed granite on the existing access road atop the channel banks. The project would not alter or impact the channel banks. No impact associated with landslides would occur.

b) **Less Than Significant Impact.** The dry, loose, sandy soils forming the alluvial fans occurring in the City are susceptible to erosion from high wind and flooding due to infrequent thunderstorms. This area is impacted, on average, by two to seven windstorm events per year. At buildout, the project site will contain native species landscaping, decomposed granite and pavement, thus minimizing long-term wind erosion potential.

Grading and construction may require removal of the topsoil; however, project-related impacts are expected to be less than significant because the project will be required to implement measures to control fugitive dust (see Air Quality, Section III), which will minimize potential adverse impacts associated with wind erosion. The City requires erosion/dust control plans that include the implementation of best management practices associated with stormwater flows on the project site (see Section X, Hydrology and Water Quality). These standard requirements assure that erosion resulting from storm flows are controlled on and off site. Overall impacts associated with soil erosion will be less than significant.

c) Less Than Significant Impact.

Landslide
See response to VII.a.iv, above.

Lateral Spreading
See response to VII.a.iii, above.

Subsidence
Ground subsidence is mostly caused by human activities such as water or oil extraction by pumping. In the Twentynine Palms region, groundwater has been naturally recharged by infiltration of stormwater runoff that percolates into the alluvial sediments. During the last few decades, the rate of groundwater extraction has exceeded natural replenishment, resulting in declining water levels and overdraft of the groundwater basin in more densely populated areas. To remedy this condition, local artificial recharge has been developed; the closest recharge sites to Twentynine Palms are percolation ponds in the Yucca Valley-Joshua Tree area. Subsidence has not been studied or detected as of 2012. The City's General Plan includes policies to help maintain groundwater levels and thus reduce the potential for subsidence by maintaining adequate groundwater levels. The project consists of a trail that will not require water extraction. The General Plan EIR concludes that impacts associated with subsidence will be less than significant in the City.

Liquefaction
See response to VII.a.iii, above.

Collapse
Soil collapse (or hydroconsolidation) typically occurs in Holocene-age soils deposited in an arid or semi-arid environment. When saturated, collapsible soils undergo a rearrangement of their grains and a loss of cementation, resulting in substantial and rapid settlement under relatively light loads. The young alluvial fan and aeolian sediments in the Twentynine Palms area are susceptible to this hazard. General soil stabilization techniques can be applied to mitigate collapsible soil, including over-excavation and soil recompaction. The project will result in a multi-use non-motorized trail that serves runners, pedestrians and bicyclists, which constitute minimal loads. Impacts associated with collapse or collapsible soils are expected to be less than significant using standard soil stabilization techniques.

d) Less Than Significant Impact. The majority of the Twentynine Palms area is underlain by silty sand, sand and gravel. Such soils typically have a low expansion potential, although pockets of fine-grained expansive soils may occur. According to the General Plan EIR Geologic and Engineering Soil Types Maps (Exhibit 4.6-2 & 4.6-3), the project site is underlain by young and older alluvium, which are classified as Site Class E (soft soil profile) and Site Class D (stiff soil profile), respectively. The City administers CBC regulations including the requirement of

soil testing to determine expansive characteristics for new development and mitigation of expansive conditions. This standard requirement will ensure that impacts associated with expansive soils will remain less than significant.

e) **No Impact.** There is currently no wastewater infrastructure within the project vicinity. The project will convert a dirt road to a non-motorized trail on the south bank of the Twentynine Palms Flood Control Channel. The project does not include any restroom facilities nor will it generate any wastewater. No impact will occur regarding septic tanks or alternative wastewater disposal systems.

f) **No Impact.** According to the City's General Plan, San Bernardino County, in general, has an extensive record of fossil life starting in Jurassic time, 150 million years ago. Fossilized remains are expected to occur within areas containing finer-grained fluvial, lacustrine, or aeolian deposits. The channel banks are modern, man-made constructions which were placed at this location. The trail will result in scraping of surface soils, and limited excavation into the channel bank to ramp down to street level at three locations. No paleontological resources occur in the channel bank, since it consists of imported fill. Therefore, no impact to paleontological resources will occur.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS -- Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

Sources: City of Twentynine Palm General Plan; San Bernardino County Regional Greenhouse Gas Reduction Plan (March 2014); CalEEMod Version 2020.4.0; project materials.

Environmental Setting

Certain gases in the earth's atmosphere, known as greenhouse gases (GHGs), play a critical role in determining the earth's surface temperature. The principal GHGs contributing to the greenhouse effect are CO_2, methane (CH_4), nitrous oxide (N_2O), and fluorinated compounds. GHG sources include both natural and anthropogenic processes. Anthropogenic GHG emissions in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to an overall trend of unnatural warming of the earth's climate, known as climate change or global warming.

State laws, such as Assembly Bill 32 (AB 32) and Senate Bill 32 (SB 32), require all cities to reduce greenhouse gas emissions to 1990 levels by the year 2020. SB 32 is the extension of AB 32 which requires the state to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030.

In 2014, SANBAG prepared a Regional Greenhouse Gas Inventory and Reduction Plan (March 2014) which included a greenhouse gas inventory and forecast for Twentynine Palms. The City participated in the plan development and set a goal to reduce its community GHG emissions to a level of 15% below 2008 GHG emissions level by 2020. The City is expected to meet and possibly exceed this goal with joint state and local efforts and reduction measures set forth by AB 32. The City's General Plan includes policies and measures to facilitate GHG emission reduction through encouraging alternative transportation, promoting renewable energy, and implementing energy efficient building technologies.

GHG Thresholds

According to the MDAQMD CEQA and Federal Conformity Guidelines, the annual threshold for greenhouse gases is 100,000 tons CO_2e annually, and 548,000 pounds daily. As described above in Section III, Air Quality, the California Emissions Estimator Model (CalEEMod) Version 2020.4.0 was used to quantify project air quality emission projections, including greenhouse gas emissions (Appendix A).

Discussion of Impacts

a, b) Less Than Significant Impact. The proposed project will generate GHG emissions during construction and minimal emissions during operation.

Construction

Construction activities will result in short-term GHG emissions associated with operation of construction equipment, worker commute, material hauling, and other construction activities. The MDAQMD daily threshold for GHG emissions is 548,000 pounds. According to the CalEEMod outputs, daily construction related GHG emissions would reach a maximum of 2,511.70 pounds per day, which is substantially below the established threshold. To determine if construction emissions will result in a cumulative considerable impact, GHG emissions were amortized over a 30-year period and added to annual operational emissions in comparison to applicable GHG thresholds (see **Table 3**, below).

Operation

At buildout, there are three emission source categories that can contribute either directly or indirectly to operational GHG emissions: water usage, solid waste disposal, or area emissions (pavement off-gassing). Operation of the proposed non-motorized trail will not generate emissions from energy/electricity usage or mobile sources. According to the CalEEMod outputs, daily operational GHG emissions would reach a maximum of 0.00789 pounds per day, which is substantially below the established daily threshold of 548,000 pounds. As shown in **Table 3**, the project will emit a total of 4.60 tons per year, which includes annual operational emissions and amortized construction emissions and is substantially below the established annual threshold of 100,000 tons.

Table 3
Projected GHG Emissions Summary
(Metric Tons)

Phase	CO_2e (MT/YR)
Construction (2022)	
Construction Total	76.05
Operation	
Construction: 30 year amortized[1]	2.53
Annual Operation	2.07
Total Operation	**4.60**
MDAQMD Threshold	**100,000.00**

1. Buildout construction GHG emissions were amortized over 30 years then added to buildout operational GHG emissions. 76.05/30 = 2.53

The proposed project will provide new, and link existing bike and pedestrian facilities, which furthers General Plan Policies CO-4.11 and CI-7.1 on encouraging alternative transportation. At buildout, the project will facilitate and encourage modal switch from automobiles to biking and walking and thus is consistent with local, regional and statewide goals and policies aimed at reducing the generation

of GHGs. The proposed project's GHG emissions would not constitute a cumulatively considerable contribution, or conflict with an applicable plan, policy, or regulation for the purposes of reducing greenhouse gas emissions. Impacts would be less than significant.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS --Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
g) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X

Source: Twentynine Palms General Plan (2012); State Water Resources Control Board, https://geotracker.waterboards.ca.gov/map/, accessed on September 16, 2021; California Department of Toxic Substances Control EnviroStor Database, https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=desert+hot+springs, accessed September 16, 2021.

Environmental Setting

A variety of products such as gasoline, paint, solvents, commercial cleaning products, refrigerants, and radioactive substances are categorized as hazardous materials. The proper management of hazardous materials is a common concern for all communities. Since the 1970s, governments at the federal, state, and local levels became increasingly concerned about the effects of hazardous materials on human health and the environment. Numerous laws and regulations were developed to investigate and mitigate these effects. As a result, the storage, use, generation, transport, and disposal of hazardous materials are highly regulated by federal, state, and local laws and regulations.

The San Bernardino County Fire Department's Hazardous Materials Division is the state designated Certified Unified Program Agency (CUPA) responsible for permit administration, compliance inspections and enforcement for over 7,000 regulated facilities in San Bernardino County. The Department of Toxic Substances Control (DTSC) lists 24 sites within the City that are either listed or permitted as hazardous material sites, primarily businesses located on or near Highway 62. Sites associated with cleanup of hazardous materials in and near the City have been primarily, and currently are those associated with the military installations at the Marine Corps base, north of the City.

Discussion of Impacts

a, b) **Less Than Significant Impact.** The proposed project will result in a 2,000-foot-long multi-use non-motorized trail with a bike path, running path and two trailheads. The trailheads will have native-species landscaping and limited amenities such as a water bottle filler, benches, trash receptacles and a public art installation. The project is expected to use small quantities of oils, chemicals and cleaning products mostly during construction, as operation would require minimal maintenance. These products would not be transported, stored or used in quantities sufficient to cause a hazard to the public. The project will not result in the release of hazardous materials, as no such materials will be required for the operation of the trail.

Construction of the project will involve the temporary use of heavy equipment that could require minor maintenance and/or re-fueling onsite, which may result in fuel and oil spills if not properly managed. The project contractor will be required to identify staging areas for storing materials and equipment and handle, use, and store hazardous materials in accordance with state law. During project construction, the handling, use, and storage of hazardous materials will be subject to applicable federal, state, and local laws including California Occupational Health and Safety Administration (CalOSHA) requirements. Overall, potential impacts regarding the use, transport and storage of hazardous materials will be less than significant.

c) **No Impact.** The nearest school to the project site is Oasis Elementary School, located approximately 0.38 miles northwest of the site. The proposed trail will not result in hazardous emissions, and is not located within ¼ mile of a school. No impact will occur.

d) **No Impact.** The project site consists of a dirt road on the south bank of the Twentynine Palms Flood Control Channel. According to the California Department of Toxic Substances Control "EnviroStor" database and the State Water Resources Control Board GeoTracker database, the project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, nor are any such sites located in the vicinity of the proposed project. Therefore, the project would not create a significant hazard to the public or the environment. No impact will occur.

e) **No Impact.** The Twentynine Palms Airport is located more than five miles east of the project site. The Marine Corps' airbase is located more than 4 miles north of the project site. The project is not located within the boundary of any airport land use plan, nor is it affected by noise from airport activities. No safety hazard will result, nor will excessive noise as a result of airport operations be experienced by runners, cyclists and pedestrians using the trail. No impact will occur.

f) **No Impact.** The project proposes a multi-use trail on a dirt road on the south bank of the flood control channel. The proposed trail will connect the existing Split Rock Avenue Class I trail on the west to Adobe Road with existing sidewalks on the east in the Downtown area. The trail will also intersect with Tamarisk Avenue between Split Rock Avenue and Adobe Road. Adequate transition, including accessible path striping, will be provided per City standards at all three intersections. The project will not modify or interfere with the existing street network, as the trail will serve non-motorized travel only. The project site will remain essentially open area as it is now. Therefore, the project will not impact emergency response or evacuation plans. No impact would occur.

g) **No Impact.** According to the General Plan (Exhibit SF-2), the project site is not located in or near a fire hazard zone. The site is located in the downtown area and not adjacent to forested areas or any other areas that carry significant fuel loads. Give the site location and buildout as a non-motorized trail with limited native species landscaping, there will be no impact associated with wildfires.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
(i) result in substantial erosion or siltation on- or off-site;			X	
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;			X	
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			X	
(iv) impede or redirect flood flows?			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

Sources: Twentynine Palms General Plan; Amended Final Urban Water Management Plan for Twentynine Palms Water District (TPWD), December 2016; U.S. Department of the Navy and U.S. Marine Corps, 2015; Twentynine Palms Wastewater Master Plan (2014).

Environmental Setting

Domestic Water

Twentynine Palms Water District (TPWD) manages and distributes the local ground water supply in the City of Twentynine Palms and portions of the surrounding unincorporated areas of San Bernardino County. The District's water service area spans 87 square miles, maintaining 200 miles of pipeline and 17 million gallons of water storage capacity. The District's water supply source is 100 percent local groundwater extracted from four subbasins south of the Pinto Mountain Fault, which are fed by rainfall in the Pinto

Mountains. The District overlays portions of the Indian Cove, Eastern and Fortynine Palms subbasins of the Joshua Tree Basin, and part of the Twentynine Palms Valley Basin.

As an urban water supplier, TPWD is mandated to prepare an Urban Water Management Plan (UWMP) per the California Water Code, undertaking water supply planning over a 20-year period in five-year increments by analyzing existing and projected water supply opportunities including recycled water for existing and future demands, in normal, single-dry and multiple-dry years, and implementing conservation and efficient use of urban water supplies.

Wastewater Treatment

The only Wastewater Treatment Plant (WWTP) in the region is located at the Marine Corps Air Ground Combat Center (MCAGCC). The facility treats all wastewater generated from the Mainside area of the MCAGCC. The City, including the project area, does not have a sanitary sewer system and currently operates with septic tanks.

In 2014, the City prepared a Wastewater Master Plan to identify and describe the potential facilities that would be required for a centralized sewer collection system and wastewater treatment plant to replace the septic systems in use. A new centralized system is envisioned to include the City and surrounding unincorporated areas. The City is currently initiating the planning and layout of the sewer system, but sanitary sewage in the City will not be available to the project area in the near term. The proposed project does not include restroom facilities and will not generate wastewater demand. No wastewater treatment facility is required.

Flood Control/Drainages

The City, including the project site, lies in the southern Mojave Desert. Although annual precipitation averages around 5 inches, infrequent thunderstorms occur in the area and can cause flooding in the City.

The project site is on a dirt road on the south bank of the Twentynine Palms Flood Control Channel, the only major drainage structure in the City. The channel was designed and constructed to protect the central business district and downtown area. The natural major drainages of Fortynine Palms Canyon, Twentynine Palms Wash, Indian Cove and Dog Wash, as well as small unnamed drainages in the Pinto Mountains can carry flash floods and impact downstream development in the City.

The San Bernardino County Flood Control District (SBFCD) is responsible for managing regional drainage within and in the vicinity of Twentynine Palms. The City works with SBFCD to manage local drainages in the City, which are divided between well-defined drainage courses, such as the project site, and areas of wide sheet flow. Development that may alter the direction of flow onsite is conditioned per standard San Bernardino County practices to maintain the existing site drainage patterns at inlets and outlets.

The project site will be subject to City requirements relating to flood control. The City implements standard requirements for stormwater retention and participates in the National Pollution Discharge Elimination System (NPDES) to protect surface waters from pollution. Development projects must retain the 100-year storm flow onsite.

Water Quality

Water quality is regulated by multiple agencies, depending on the source. The TPWD implements the standards of the Regional Water Quality Control Board (RWQCB) in its distribution of domestic water. The RWQCB also regulates septic tanks and alternative wastewater treatment systems, to protect the groundwater basin from pollution from those sources.

Surface water quality in the region is largely under the influence of land uses that affect runoff, such as urban and industrial uses. Runoff from stormwater can transport pollutants that collect on the ground surface and affect water quality of receiving streams, rivers, and channels. Because there is no receiving water body for the Morongo Basin, including the City of Twentynine Palms, RWQCB does not require a water quality management plans (WQMP). However, the City typically requires best management practices (BMPs) similar to those required in a WQMP.

Description of Impact

a) **Less Than Significant Impact.** All water providers are required to comply with Regional Water Quality Control Board (RWQCB) standards for the protection of water quality and local aquifers.

The proposed trail will generate a marginal demand for domestic water for the water bottle filler and for limited landscaping irrigation at trailheads. Construction of on-site connections will be subject to all standard requirements by TPWD. The project will not include restroom facilities and will not generate wastewater during operation. No wastewater treatment facility is required.

The proposed project will be required to comply with TPWD and RWQCB regulations to minimize the polluted load associated with urban activities. By complying with these standards, the proposed project will not violate water quality standards or waste discharge requirements. The imposition of conditions of approval and adherence to local, state and federal requirements will ensure that impacts associated with water quality standards are less than significant.

b) **Less Than Significant Impact.** The project will provide a water bottle filler at the Adobe Road trailhead and will connect to existing domestic water infrastructure located within Adobe Road. The project proposes a 2,000-foot-long non-motorized trail serving cyclists, runners and pedestrians. The project will generate a marginal water demand for the water bottle filler. The project also proposes native landscaping at the trailheads; the marginal area of landscaping with drought tolerant native species will result in a marginal demand for irrigation.

In order to prevent overdrafting, the California Department of Water Resources (DWR) has recommended pumping limits for both the Fortynine Palms and Indian Cove subbasins, which results in an overall limited pumping capacity at 6,995 acre-feet per year (AFY). Existing pumping in 2015 (2,404 AFY) represents approximately 30% of the total pumping capacity. As discussed above, the project will result in a negligible increase in pumping over the 2015 baseline level, and will represent a fraction of the limited pumping capacity recommended by DWR. The amended 2015 UWMP demonstrates that the District has adequate supplies to meet demands during normal, single-dry, and multiple-dry years throughout the 20-year planning period. Project impacts on groundwater supplies and recharge are expected to be minimal and less than significant.

c i) **Less Than Significant Impact.** The project site is generally flat and contains no rivers or streams, although it sits on a dirt road on the south bank of the man-made Twentynine Palms Flood Control Channel. Construction of the proposed Project can result in erosion and siltation when disturbing soil during grading and other earthmoving activities. However, these effects would be limited to the construction phase and prevented through the incorporation of best management practices (BMPs). BMPs may include phasing of construction activities, wind fences and sand fences, soil retention, mulching, and perimeter controls and sediment barriers. Soil erosion and/or siltation impacts would be less than significant with implementation of existing regulations.

c ii)- iii) Less Than Significant Impact. The project will convert a dirt road on the south bank of Twentynine Palms Flood Control Channel to a multi-use non-motorized trail. Development of the proposed project will marginally increase impermeable surfaces on site, and therefore may increase on-site storm flows. However, the new impermeable surfaces will be limited to the 21,840 square feet of asphalt and concrete pavement on the bike path and transition to existing roadways (see Exhibit 4). The running path will be covered with decomposed granite and remain permeable. Implementation of BMPs required by the City would also help reduce the volume of additional runoff through erosion and sediment control. The proposed project will be subject to City engineering review and be required to comply with all applicable permit regulations and approvals.

The project site will remain open space as it is now. Because it sits on the bank of an open flood control channel, runoff on the site will naturally flow into the channel given the slight incline of the bank (see Exhibit 4), as it does now. The proposed site design, location and compliance with existing regulatory programs will ensure flooding would not occur and that the project will not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Impacts will be less than significant.

c iv) Less Than Significant Impact. The project site is on the south bank of Twentynine Palms Flood Control Channel, which in its entirety is classified as a FEMA Flood Zone AE, indicating one percent annual chance flood hazard. The project will convert a dirt road to a multi-use non-motorized trail, and will not alter the open space nature of the site. The only vertical structures proposed are benches, trash receptables, a public art installation and limited native species landscaping at trailheads. The project will not impede or redirect storm flows. Impacts will be less than significant.

d) Less Than Significant Impact. The City is located inland and would not be subject to tsunami hazard. The flood control channel in the project area is an ephemeral drainage and only conveys flows after rain events. The project is not near any other water body, and the possibility of seiche hazard is low. The project site is on the south bank of the flood control channel and is located within a 100-year floodplain. However, given the proposed use as a non-motorized trail, there would be minimal pollutants on the project site and impacts would be less than significant regarding release of pollutants in an inundation event should water overflow to the channel bank.

e) Less Than Significant Impact. The proposed project will be required to comply with all applicable water quality standards and will implement erosion control and other best management practices required by the City for both construction activities and long-term operation of the site. As discussed above, the proposed project will generate minimal water demand with a water bottle filler and limited native landscaping that is drought-tolerant; therefore, it will not conflict with a sustainable groundwater management plan. Adherence to the City's standard requirements related to water quality and permit requirements set forth by RWQCB will ensure that potential impacts to a water quality control plan would be less than significant.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			X	

Sources: Google Earth; City of Twentynine Palms General Plan; project materials.

Environmental Setting

The City's General Plan designates the project site as Floodway. The City operates on a "one map" system, meaning that the General Plan designations are also utilized as zones in the Development Code. The Floodway land use designation identifies properties within the City under ownership by the San Bernardino County Flood Control District. Permitted uses on Floodway designated parcels are limited to flood control facilities, including drainage channels, basins and any other drainage infrastructure improvements as deemed necessary by the Flood Control District to protect the public safety of City residents. The Development Code defines Floodway as "the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than 1 foot."

Discussion of Impacts

a) **No Impact.** The project site occurs on a dirt road on the south bank of Twentynine Palms Flood Control Channel. The surrounding single/multi-family residences, college and commercial buildings operate independently of each other. The proposed conversion of the dirt road to a multi-use non-motorized trail does not change the open space nature of the project site and will not physically divide an established community. No impact will occur.

b) **Less Than Significant Impact.** The proposed project occurs on the south bank of the flood control channel. The proposed trail is set back by at least 5 feet from the top of the channel, and the project will not alter or physically impact the channel (potential impact to jurisdictional waters are discussed in Section IV). The proposed conversion of a dirt road to a non-motorized trail will not change the open space nature of the site, nor impact the flood control function of the site. The project does not conflict with the existing channel/drainage facilities or the development standards set for the Floodway zone (Development Code Section 19.22.040).

Overall, project-related impacts on land use planning and policy will be less than significant.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

Sources: Google Earth; City of Twentynine Palms General Plan.

Environmental Setting

The City is not identified as a mineral resource area of significance, although mining has previously occurred in and around the City. The General Plan uses the state mineral resource designations to determine the potential for mineral resources to exist in any given area.

Discussion of Impacts

a, b) No Impact. The project site is designated in the General Plan for Floodway land use, and is surrounded by properties identified for residential and commercial uses. The project area is not, nor has it been in the past, a mining site. There are no mines located in the vicinity of the project. The proposed use of the project site as a multi-purpose trail will have no impact on mineral resources.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
XIII. NOISE - Would the project result in:				
a) Generation of substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

Sources: Google Earth; City of Twentynine Palms General Plan.

Environmental Setting

The main sources of noise in an urban environment include road traffic, aircraft, railroads, construction, industry, noise in buildings, and consumer products. According to the United States Environmental Protection Agency (US EPA), in any city, the main sources of traffic noise are the motors and exhaust systems of autos, trucks, buses, and motorcycles. Temporary noise sources include landscape maintenance activities, home stereo systems, and barking dogs, which are governed by the provisions of the City Noise Ordinance (Chapter 19.80).

The City has established goals, policies, and programs to limit and reduce the effects of noise intrusion on sensitive land uses and set acceptable noise levels for varying types of land uses in its General Plan. The City uses the Community Noise Equivalent Level (CNEL) to guide acceptable noise levels in the community. The CNEL scale represents an average of noise levels over a 24-hour period, and is weighted for the quieter evening and nighttime periods. The CNEL scale establishes normally acceptable noise levels for single family homes at 50 to 60 dBA, and conditionally acceptable levels at 55 to 70 dBA. For multi-family dwellings, normally acceptable noise levels at 50 to 65 dBA, and conditionally acceptable levels at 60 to 70 dBA. For schools, normally acceptable noise levels are 50 to 70 dBA, and conditionally acceptable levels are 60 to 70 dBA. The General Plan also establishes exterior noise standards for open space uses at 65 dBA.

Discussion of Impacts

a) **Less Than Significant Impact.** The project site is currently vacant and consists of a dirt road on the south bank of Twentynine Palms Flood Control Channel. At buildout, the proposed non-motorized trail will generate minimal noise associated

with cyclists, runners and pedestrians. With development of the project, noise levels will temporarily increase during construction, but will not change from current levels during operation, given that the roadway is currently used as a de facto trail.

Construction of the proposed trail will consist primarily of grading, paving and concrete pouring for the path and installation of amenities at trailheads, which will result in temporary construction noise generated from the site. The highest noise levels can be expected to be generated by heavy equipment, such as graders during site grading. Heavy equipment can generate noise levels ranging from 70 to 90 dBA at a distance of 50 feet from the source. Such equipment, however, will be mobile and will not create a source of constant noise at any one location on the site.

The Municipal Code exempts construction activities from short-term, short-duration noise standards when they are conducted during permitted time frames. The project would be required to comply with the City's Municipal Code construction hours, between 7 a.m. to 7 p.m. excluding Sundays and Federal holidays. From May through September, construction activities are allowed to begin at 6 a.m.

The project site is surrounded by a flood control channel and single family homes and commercial buildings across the channel on the north, Split Rock Avenue and vacant land on the west, vacant land, single/multi-family dwellings and a college on the south, and Adobe Road and commercial uses on the east. The multi-family residences and college on the south are immediately adjacent to the project site. The nearest single-family residence is at least 70 feet to the west of the site. Noise attenuation of 6 dB can be expected with doubling of distance. Although heavy equipment may generate noise above the conditionally acceptable levels for the residences and college, these noises would be temporary (on certain days of the 4-month construction period), would occur during less sensitive daytime hours, and would be intermittent rather than continuous at any location given their mobile nature. Therefore, impacts associated with construction noise are considered less than significant.

The General Plan identified the project site in an area that currently experiences low noise levels of up to 55 dBA CNEL. The General Plan further determined that at build out, the noise levels will largely remain in this range in this area. The proposed project will not be subject to excessive noise at the General Plan buildout since the proposed trail will be subject to noise levels below the exterior noise standards for open space uses at 65 dBA. At General Plan buildout, the project will be surrounded by single/multi-family residences and commercial uses except for the channel and roadways. As discussed, noise associated with non-motorized travel on the proposed trail would be minimal and is not expected to raise the area's noise levels to exceed the City's standards of up to 70 dBA CNEL for residential uses in the vicinity. In summary, noise impacts associated with the project operation are expected to be less than significant.

b) **Less Than Significant Impact.** The operation of the proposed non-motorized trail will not generate groundborne vibration. Construction activities, however, could generate temporary and short-term vibration from the use of heavy equipment. Groundborne vibration also produces groundborne noise, described as a rumbling sound, that can be heard and felt by adjacent uses. The project will require 21,840 square feet of asphalt and concrete pavement on the bike path and transition to existing roadways (see Exhibit 4), and the running path (11,100 square feet) will be covered with decomposed granite. Construction of the proposed project would not require the use of equipment such as pile drivers, which are known to generate substantial construction vibration levels. The highest degree of groundborne vibration would be generated during the paving phase of construction due to the operation of a vibratory roller.

Based on Federal Transit Administration (FTA) data, vibration velocities from vibratory roller operations are estimated to be approximately 0.1980 inch-per-second PPV at 26 feet from the source of activity. As such, structures located greater than 26 feet from vibratory roller operations would not experience groundborne vibration above the Caltrans significance thresholds (i.e. 0.3 inch-per-second PPV for structures and 0.2 inch-per-second PPV for human annoyance). The nearest existing structures are multi-family residences immediately south of the project site, with an approximately 20-foot setback from the dirt road where a vibratory roller may be used (i.e. in preparation for paving the bike path). As such, there exists the possibility to marginally exceed the Caltrans significance thresholds when a vibratory roller operates within 26 feet of the residences. Nevertheless, as discussed for construction noises above, such vibration would be temporary (on certain days of the 4-month construction period), would occur during less sensitive daytime hours, and would be intermittent rather than continuous at any location given their mobile nature. Therefore, impacts would be considered less than significant regarding groundborne vibration.

c) **No Impact.** Aircraft noise in the City generally is the result of either general aviation operations or military overflights originating from or destined to the Marine Corps Air Ground Combat Center (Marine Base). The proposed project is located more than 11 miles southeast of the Marine Base airport and more than 5 miles west of the Twentynine Palms Airport, and well outside the noise contours of these airports. According to the City's General Plan Noise Element, none of the public or private aircraft facilities in and around the City have sufficient operations to generate noise contours (in terms of the CNEL noise scale) that would extend into the City or impact noise sensitive land uses. The airports will have no impact on noise levels at the proposed project location.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
XIV. POPULATION AND HOUSING – Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

Sources: Google Earth; City of Twentynine Palms General Plan.

Environmental Setting

In 2021, the City has an estimated population of 29,967 persons, up from 25,048 in 2010 – a 19.6% increase. The City has 9,693 housing units, consisting primarily of single family homes.

The project area is in the City's downtown. The surrounding General Plan land use designations will result in single-family units up to 4 du/ac and multi-family units up to 8 du/ac to the north and northwest, commercial uses to the east (including northeast and southeast), and high density residential and specific plan uses to the south and southwest.

Discussion of Impacts

a-b) No Impact. The project site occurs on a dirt road on the south bank of the Twentynine Palms Flood Control Channel. The project will result in a multi-use non-motorized trail in the City, which is consistent with the General Plan's goal to provide alternative transportation and trails for recreation and travel for City residents. The proposed project will not require the expansion of existing utilities, or the creation of new roads in the area. The trail will provide additional recreation and non-motorized travel facilities to existing residents, and to new residents as the City grows.

The project will not induce growth, insofar as it provides an amenity to residents, but does not encourage or necessitate additional development. The proposed project will not displace existing people or housing. No impacts associated with population or housing will result from the proposed project's implementation.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?			X	
Police protection?			X	
Schools?				X
Parks?				X
Other public facilities?				X

Sources: City of Twentynine Palms General Plan; Google Earth Pro 7.3.2.5491; Online Resources; Project materials.

Environmental Setting

Fire Protection

The San Bernardino County Fire Department (SBCoFD) is responsible for fire protection within the City. SBCoFD operates 57 fire stations in 24 cities and covers 19,200 square miles in the County. SBCoFD has a staff of 1,071 County fire personnel and 683 fire suppression personnel available for each 24-hour period. The nearest fire station to the project site is Station #44 at 6560 Adobe Road, approximately 0.45 miles to the south.

Police Protection

The San Bernardino County Sheriff's Department is responsible for law enforcement in the City. A total of 14 police personnel are assigned to the City and operate out of the Morongo Basin Station located at 63665 Highway 62 in Joshua Tree, approximately 12 miles west of the project site.

Schools

The City and the project site are located within the boundaries of the Morongo Unified School District (MUSD), which provides public school facilities to accommodate students. The MUSD currently operates nineteen schools and programs within its district, which stretches beyond Twentynine Palms to Yucca Valley and Morongo Valley. The nearest school to the project site is Oasis Elementary School, located approximately 0.38 miles northwest of the site.

Parks

There are a total of four existing parks (Bucklin Park, Luckie Park, Knott's Sky Park, and Veteran's Park) and a proposed park (Pioneer Park) in the City. The City's other major recreational facilities include Theatre 29, the Senior Community Center, Parks and Recreation Community Services Building, and Parks and Recreation Administration Building.

Discussion of Impacts

Fire Protection

Less Than Significant Impact. The project will convert a dirt road to a multi-use non-motorized trail on the south bank of Twentynine Palms Flood Control Channel. The project site will include surfaces paved with asphalt, concrete and decomposed granite and limited amenities and native landscaping at the trailheads. At buildout, the project is not expected to increase fire department calls.

Construction of the project will result in a marginal potential increase in fire and medical response demand associated with construction activities and equipment. The project site will be fully accessible by fire crews during construction through the surrounding roadway network. Proper maintenance and operation of construction equipment will minimize potential fire risks, which will end once construction is complete. Overall, impacts associated with fire suppression are expected to be less than significant.

Police Protection

Less Than Significant Impact. The proposed trail project may marginally increase the need for police services. The trail will bring more people (mostly cyclists, runners and pedestrians) to the area, but the project site will remain essentially as open space which has high visibility for patrolling officers on the surrounding streets. The limited structures/amenities at trailheads will result in minimal opportunities for mischief. Impacts associated with police protection are expected to be less than significant.

Schools:

No Impact. The proposed project will result in a multi-use non-motorized trail. No homes or businesses will be created by the project. Therefore, there is no potential for the project to generate new residents nor their associated school aged children. No impact to schools will occur.

Parks

No Impact. The proposed project will result in a multi-use non-motorized trail. The nearest park is the Veteran's Park located approximately 500 feet to the north. The project will not generate or induce population growth, as construction is expected to be fulfilled by the local labor market. The project will have no impact on parks in the City.

Other Public Facilities:

No Impact. The proposed trail will have no impact on other public facilities. The maintenance of the trail will constitute a minimal addition to the City's operational expenses, and such costs will be offset by increased revenues from population growth over time. No impact to other public facilities will occur.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
XVI. RECREATION --				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			X	

Sources: Google Earth; City of Twentynine Palms General Plan.

Environmental Setting

Discussion of Impacts

a) **No Impact.** The proposed trail consists of a bike path and a running path with limited amenities at two trailheads. The project expands and represents a beneficial impact to recreational facilities in the City. As discussed throughout this initial study, the project will not generate or induce population growth, as construction is expected to be fulfilled by the local labor market. The project will not result in increased use at existing parks or other recreational facilities. No impact will occur.

a) **Less Than Significant Impact.** The project proposes a 2,000-foot-long multi-use non-motorized trail. As described in this document, impacts to the environment associated with biological resources will be mitigated to less than significant levels. Impacts associated with construction of the proposed trail will be less than significant.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
XVIII. TRANSPORTATION/TRAFFIC -- Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?				X
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?				X
c) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d) Result in inadequate emergency access?			X	

Sources: City of Twentynine Palms General Plan; Google Earth; San Bernardino County Transportation Impact Study Guidelines, July 9, 2019; Technical Advisory on Evaluating Transportation Impacts in CEQA, State of California Governor's Office of Planning and Research, December 2018.

Environmental Setting

The City's Circulation Plan classifies roadways into the following types: 6-Lane Expressway, Arterial, Secondary, and Collector. The General Plan (2012) established a LOS "C" minimum service standard for all new streets within the city. While Caltrans targets LOS on State Highway facilities between LOS C and LOS D, they acknowledge that it may not always be feasible and if an existing State highway is operating at less than the target LOS, the existing LOS should be maintained. Traffic studies conducted in Twentynine Plans have generally assumed that Caltrans' region-wide goal for an acceptable LOS on all freeways, road segments and intersections is LOS D.

Currently, the project site consists of a dirt road on the south bank of Twentynine Palms Flood Control Channel. Existing roadways that intersect the project site include Split Rock Avenue, designated as a 66' Collector, Tamarisk Avenue, a local road, and Adobe Road, designated as a 104' Arterial. All these roadways are paved in the project area.

Changes to California Environmental Quality Act (CEQA) Guidelines were adopted in December 2018, which require all lead agencies to adopt VMT as a replacement for automobile delay-based level of service (LOS) as the new measure for identifying transportation impacts for land use projects. This statewide mandate went into effect July 1, 2020. To aid in this transition, the Governor's Office of Planning and Research (OPR) released a Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018).

Discussion of Impacts

a) **No Impact.** The project proposes the conversion of a dirt maintenance road on the channel bank to a multi-use non-motorized trail. The proposed 2,000-foot trail will include a bike path, a running path and two trailheads with limited amenities. The trail will serve non-motorized travel only and is an infrastructure rather than a development project. At buildout, the project will not generate vehicle trips except for incidental trail maintenance, and thus will not impact roadways in the project area.

Morongo Basin Transit Authority (MBTA) provides transit service in the Morongo Basin, including the City of Twentynine Palms. There is a bus stop by the Adobe Road trailhead (Adobe & Buena Vista), which is served by Route 1 (Yucca Valley-Twentynine Palms) and Route 3A (Twentynine Palms Marine Base). Bus Route 3B (Twentynine Palms Neighborhood) also serves the project area; the nearest stops are El Paseo & Bagley to the north and Gorgonio & Mesquite (Post Office) to the southeast, both located within ¼-mile of the proposed trail.

The project would contribute to the multi-modal circulation system by building new bike and pedestrian facilities and connecting existing facilities, as well as achieving synergy with transit services in the project area. The project will have a beneficial impact on alternative transportation.

Overall, the project will not conflict with adopted policies, plans, or programs regarding transit, roadway, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. No impact will occur.

b) **No Impact.** SB 743 requires amendments to the CEQA Guidelines (pre-2019) to provide an alternative to LOS for evaluating transportation impacts. Particularly within areas served by transit, those alternative criteria must "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." (Public Resources Code Section 21099(b)(1)). CEQA Guidelines were amended to require all lead agencies to adopt vehicle miles traveled (VMT) as a replacement for automobile delay-based level of service (LOS) for identifying transportation impacts. This statewide mandate went into effect July 1, 2020.

The project proposes a non-motorized trail which will not generate vehicle trips at buildout (except for incidental trail maintenance). The project will serve the local community and reduce VMTs by adding new and linking existing bike and pedestrian facilities in the downtown area. The proposed trail is adjacent to transit service, which will further encourage multi-modal transportation over private automobiles. The project will have a beneficial impact per CEQA Guidelines Section 15064.3 (b) and will not conflict with its provisions. No impact will occur.

c) **Less Than Significant Impact.** The proposed trail will occur within and replace the existing dirt road and intersect with three roadways, Split Rock Avenue at the western trailhead, Tamarisk Avenue in the middle, and Adobe Road at the eastern trailhead. The project will provide adequate transition including accessible path striping per City standards at all three intersections. Therefore, the project will not increase traffic hazards due to a design feature.

While construction at the trailhead and Tamarisk Avenue intersections may temporarily impact traffic, given the limited scope of work (transitions only) and current roadway conditions, the project is not expected to cause significant traffic delay or risks in the area. No incompatible uses are proposed for the trail project. Therefore, the proposed project will not result in significant impacts on traffic hazards.

d) **Less Than Significant Impact.** The project will result in a non-motorized trail on a dirt road on the channel bank and will not impact the street grid at buildout. The project site will remain in an open area condition and will not impact emergency access to any adjacent properties. While construction work may temporarily impact traffic flow on Adobe Road, Tamarisk Avenue and Split Rock Avenue, the work area is limited to transitions from the trail to roadways and the project is not expected to require lane closures. Therefore, the proposed project will not result in inadequate emergency access and potential impacts will be less than significant.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
XVII. TRIBAL RESOURCES-- Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or			X	
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe			X	

Sources: Twentynine Palms General Plan (2012); Historical/Archaeological Resources Survey Report – Twentynine Palms Bike Trail Project, prepared by CRM TECH, August 11, 2021.

Environmental Setting

As discussed in the Section V, Cultural Resources, the Mojave Desert, including the City of Twentynine Palms have been home to the Serrano and the Chemehuevi Native Americans for centuries. Today, most Serrano descendants are affiliated with the San Manuel and the Morongo Indian Reservations, while the Chemehuevi are divided among the Chemehuevi, the Colorado River, and the Morongo Reservations.

The City and surrounding areas contain significant cultural resources to the Native American people which are considered non-renewable resources because they provide important information about the past and are of high cultural value to the tribes.

Discussion of Impacts

a, b) Less Than Significant Impact. As discussed above in Section V, Cultural Resources, no historical or archaeological resources are known to occur on the project site. The ground surface in the project area has been cleared and leveled in association with construction and maintenance of the channel. There are no sites of traditional cultural value in the project vicinity based on the Sacred Lands File search by the NAHC. The Project site does not contain any tribal cultural resource listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), as confirmed by the City of Twentynine Palms as the lead agency.

The City initiated Tribal Consultation in conformance with AB 52 requirements and contacted 3 tribes in writing in October 2021. If the City receives further response from the tribes, any requests and input from consultation will be considered for inclusion in conditions of approval, project specifications, and/or as added to this Initial Study prior to completion of the environmental review process.

Compliance with standard requirements will ensure that impacts to tribal cultural resources would remain less than significant.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

Source: Twentynine Palms General Plan.

Environmental Setting

Domestic Water (please also see Hydrology and Water Resources)
The proposed project site is located within the Twentynine Palms Water District (TPWD) boundaries for domestic water services. The District's water supply source is 100 percent groundwater produced from District-owned and operated wells. The District maintains nearly 8,000 meter services and 200 miles of pipeline within an 87-square mile area.

Wastewater Treatment
The only Wastewater Treatment Plant (WWTP) in the region is located at the Marine Corps Air Ground Combat Center (MCAGCC). The City, including the project area, does not have a sanitary sewer system and currently operates with septic tanks.

Flood Control/Drainages
The San Bernardino County Flood Control District (SBFCD) is responsible for managing regional drainage within and in the vicinity of Twentynine Palms. The City works with SBFCD to manage local drainages in the City, which are divided between well-defined drainage courses (some have been channelized) and areas of wide sheet flow. The Twentynine Palms Flood Control Channel is the only major drainage structure in the City.

The channel was designed and constructed to protect the central business district and downtown area.

Solid Waste
Burrtec Waste Industries provides solid waste pick up and disposal, as well as recycling services in the City. Solid waste disposal and landfill siting is handled by the County of San Bernardino, Solid Waste Management Division. The project will utilize commercial services provided by Burrtec.

Other Utilities
The electrical energy to the City is provided by Southern California Edison (SCE). Natural gas service is provided to the City by Southern California Gas Company (SoCalGas). Telephone service is provided by a number of companies, including both land lines and cellular services.

Discussion of Impacts

a), c) Less Than Significant Impact. The proposed project will result in a multi-use non-motorized trail. The project does not include any restroom facilities and will not require wastewater treatment infrastructure or service. The proposed LED lane markers on the bike path will be powered by solar panels, and the project will not require electricity, natural gas or telecommunications facilities.

The project will include a water bottle filler at the Adobe Road trailhead, and will connect to existing water infrastructure located under the adjacent Adobe Road. The project will not require other new or expanded utility infrastructure.

As discussed in Section X, the project will result in limited new impermeable surfaces (21,840 square feet of asphalt and concrete pavement on the bike path and transition to existing roadways). The project will keep the open space nature of the site, which is on the south bank of Twentynine Palms Flood Control Channel. Runoff is expected to flow into the channel given the slight incline of the south bank. The project will be required to obtain a 1602 agreement from the CDFW and a Water Quality Certification from the RWQCB to mitigate potential impacts to the channel and jurisdictional waters. Compliance with existing regulatory programs will ensure that the project will not create or contribute runoff which would exceed the capacity of existing stormwater drainage systems. The project will not require new or expanded drainage infrastructure. Overall, impacts associated with construction, relocation or expansion of utility services or facilities are expected to be less than significant.

b) Less Than Significant Impact. As described in Section X., Hydrology and Water Resources, the proposed project will have a minimal impact on water demand. Existing pumping in 2015 (2,404 AFY) represents approximately 30% of the total pumping capacity. The project will generate minimal water demand from a water bottle filler and limited drought-tolerant landscaping at trailheads. The project will result in a negligible increase in pumping over the 2015 baseline level, and will represent a fraction of the limited pumping capacity recommended by DWR. The

amended 2015 UWMP demonstrates that the TPWD has adequate supplies to meet demands during normal, single-dry, and multiple-dry years throughout the 20-year planning period. The project will have a less than significant impact on water supply and service system.

d), e) Less Than Significant Impact. The City's solid waste disposal service is provided by Burrtec. Trash generated by the project will be hauled to the Twentynine Palms Transfer Station, east of the City, and then transported to Landers Landfill, a regional landfill located approximately 30 miles northwest of the City. Additional capacity will result from either the expansion of the Landers Landfill or the regional landfill in Barstow, approximately 100 miles north of the City. Twentynine Palms Transfer Station has a permitted throughput of 200 tons per day. Landers Landfill had a remaining capacity of 13,983,500 cubic yards as of 2017 and is estimated to close in 2072.

The project will generate limited solid waste, as materials will balance onsite for earthwork during construction and operational waste would be limited to trash collected by receptacles at trailheads. Burrtec and the existing landfills will have sufficient capacity to serve the project. Burrtec is required to meet all local, regional, state and federal standards for solid waste disposal. Impacts associated with solid waste are expected to be less than significant.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
XX. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

Sources: Twentynine Palms General Plan; Fire and Resources Assessment Program (FRAP) maps, California Department of Forestry and Fire Protection.

Environmental Setting

Wildfires can occur in undeveloped areas and spread to urban areas where the landscape and structures are not designed and maintained to be ignition resistant. A wildland-urban interface (WUI) is an area where urban development is located in proximity to open space or “wildland” areas. Wildland fires may pose a hazard where development is located in a WUI or within close proximity to unmanaged fuels or designated fire severity zones.

The California Department of Forestry and Fire Protection (CalFire) has mapped areas of significant fire hazards in the state through its Fire and Resources Assessment Program (FRAP).

According to the City’s General Plan, the project site is not in a State Responsibility Area or a Moderate Fire Hazard Zone. The site is in the downtown area and not adjacent to forested areas or areas carrying large fuel loads.

Discussion of Impacts

a)-d) No Impact. The FRAP does not identify any fire hazard severity zone or state responsibility area within the City. The project site is not located in or near a state responsibility area or a very high fire hazard severity zone. Because the City, including the proposed project, is not at high risk for wildfire, it is also not at risk for spread of wildfire, or for post-fire slope instability hazards including flooding and landslides. The project will convert a dirt road to a non-motorized trail in the downtown area. There is no need for installation or maintenance of infrastructure that may exacerbate fire risk. No impacts associated with wildfire will result from development of the proposed project.

Mitigation Measures:
None required.

Monitoring:
None required.

	Potentially Significant Impact	Less Than Significant w/ Mitigation	Less Than Significant Impact	No Impact
XXI MANDATORY FINDINGS OF SIGNIFICANCE --				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

Discussion of Impacts

a) **Less Than Significant Impact with Mitigation Incorporated.** As described above, the proposed project has the potential to impact biological (burrowing owl, migratory birds, and jurisdictional waters). The mitigation measures included in this document, however, will assure that the impacts associated with these resources are reduced to less than significant levels.

b) **Less Than Significant Impact.** Where appropriate above, the proposed project's impacts have been considered in relation to General Plan buildout. Under those cumulative conditions, the project was found to have less than significant impacts. The proposed project consists of a multi-use non-motorized trail. The impacts associated with the project, as mitigated, will be less than significant. When considered in the framework of General Plan buildout, the project is consistent with the buildout plans envisioned in the General Plan, and will increase alternative transportation facilities for travel and recreation in the project area and the City, now and into the future. Cumulative impacts are expected to be less than significant.

c) **Less Than Significant Impact.** As described above, the project will not have significant impacts on human beings. Air quality and noise impacts will both be less than significant. The project will have less than significant impacts on local traffic and transportation during construction, and is expected to have a beneficial impact at buildout especially regarding alternative transportation.

Appendix A

Air Quality - CalEEMod Output Tables

29 Palms Channel Trail - Mojave Desert AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

29 Palms Channel Trail

Mojave Desert AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.34	1000sqft	0.01	340.00	0
Other Non-Asphalt Surfaces	32.60	1000sqft	0.75	32,600.00	0
City Park	0.86	Acre	0.86	37,461.60	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	30
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - The project proposes a 2,000-foot-long trail in downtown 29 Palms.

Land Use - The project will disturb a total of 70600 sf, resulting in 340 sf asphalt, 21500 sf concrete and 11100 sf decomposed granite. City Park was selected to provide a highly conservative analysis.

Construction Phase - Assume 4-month construction starting 6.1.2021.

Grading - Materials will balance onsite.

On-road Fugitive Dust - Project area roads are fully paved.

Vehicle Trips - The project serves non-motorized travel only and will not generate trips.

Water And Wastewater - Project will not generate wastewater at buildout. Adjusted to 100% septic tank to reflect project area conditions.

Construction Off-road Equipment Mitigation -

29 Palms Channel Trail - Mojave Desert AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	50.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	PhaseEndDate	5/10/2023	9/28/2022
tblConstructionPhase	PhaseEndDate	4/12/2023	8/17/2022
tblConstructionPhase	PhaseEndDate	7/6/2022	6/8/2022
tblConstructionPhase	PhaseEndDate	4/26/2023	9/14/2022
tblConstructionPhase	PhaseEndDate	6/30/2022	6/2/2022
tblConstructionPhase	PhaseStartDate	4/27/2023	9/15/2022
tblConstructionPhase	PhaseStartDate	7/7/2022	6/9/2022
tblConstructionPhase	PhaseStartDate	7/1/2022	6/3/2022
tblConstructionPhase	PhaseStartDate	4/13/2023	8/18/2022
tblConstructionPhase	PhaseStartDate	6/29/2022	6/1/2022
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	100.00
tblWater	SepticTankPercent	10.33	100.00
tblWater	SepticTankPercent	10.33	100.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0686	0.4512	0.4713	8.9000e-004	0.0300	0.0209	0.0509	0.0124	0.0200	0.0324	0.0000	75.4128	75.4128	0.0136	9.9000e-004	76.0484
Maximum	**0.0686**	**0.4512**	**0.4713**	**8.9000e-004**	**0.0300**	**0.0209**	**0.0509**	**0.0124**	**0.0200**	**0.0324**	**0.0000**	**75.4128**	**75.4128**	**0.0136**	**9.9000e-004**	**76.0484**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0686	0.4512	0.4713	8.9000e-004	0.0300	0.0209	0.0509	0.0124	0.0200	0.0324	0.0000	75.4127	75.4127	0.0136	9.9000e-004	76.0483
Maximum	**0.0686**	**0.4512**	**0.4713**	**8.9000e-004**	**0.0300**	**0.0209**	**0.0509**	**0.0124**	**0.0200**	**0.0324**	**0.0000**	**75.4127**	**75.4127**	**0.0136**	**9.9000e-004**	**76.0483**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2022	8-31-2022	0.4602	0.4602
2	9-1-2022	9-30-2022	0.0574	0.0574
		Highest	0.4602	0.4602

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.6600e-003	0.0000	3.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-004	6.0000e-004	0.0000	0.0000	6.4000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0142	0.0000	0.0142	8.4000e-004	0.0000	0.0352
Water						0.0000	0.0000		0.0000	0.0000	0.0000	2.0189	2.0189	1.7000e-004	2.0000e-005	2.0293
Total	**3.6600e-003**	**0.0000**	**3.1000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0142**	**2.0195**	**2.0337**	**1.0100e-003**	**2.0000e-005**	**2.0652**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.6600e-003	0.0000	3.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-004	6.0000e-004	0.0000	0.0000	6.4000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0142	0.0000	0.0142	8.4000e-004	0.0000	0.0352
Water						0.0000	0.0000		0.0000	0.0000	0.0000	2.0189	2.0189	1.7000e-004	2.0000e-005	2.0293
Total	**3.6600e-003**	**0.0000**	**3.1000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0142**	**2.0195**	**2.0337**	**1.0100e-003**	**2.0000e-005**	**2.0652**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2022	6/2/2022	5	2	
2	Grading	Grading	6/3/2022	6/8/2022	5	4	
3	Building Construction	Building Construction	6/9/2022	8/17/2022	5	50	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Paving	Paving	8/18/2022	9/14/2022	5	20	
5	Architectural Coating	Architectural Coating	9/15/2022	9/28/2022	5	10	

Acres of Grading (Site Preparation Phase): 1.88

Acres of Grading (Grading Phase): 4

Acres of Paving: 0.76

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,976 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	6.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	30.00	12.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.2700e-003	0.0000	6.2700e-003	3.0000e-003	0.0000	3.0000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3100e-003	0.0146	7.0900e-003	2.0000e-005		6.2000e-004	6.2000e-004		5.7000e-004	5.7000e-004	0.0000	1.5115	1.5115	4.9000e-004	0.0000	1.5238
Total	**1.3100e-003**	**0.0146**	**7.0900e-003**	**2.0000e-005**	**6.2700e-003**	**6.2000e-004**	**6.8900e-003**	**3.0000e-003**	**5.7000e-004**	**3.5700e-003**	**0.0000**	**1.5115**	**1.5115**	**4.9000e-004**	**0.0000**	**1.5238**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.1000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0513	0.0513	0.0000	0.0000	0.0518
Total	**3.0000e-005**	**2.0000e-005**	**2.1000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0513**	**0.0513**	**0.0000**	**0.0000**	**0.0518**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.2700e-003	0.0000	6.2700e-003	3.0000e-003	0.0000	3.0000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3100e-003	0.0146	7.0900e-003	2.0000e-005		6.2000e-004	6.2000e-004		5.7000e-004	5.7000e-004	0.0000	1.5115	1.5115	4.9000e-004	0.0000	1.5238
Total	**1.3100e-003**	**0.0146**	**7.0900e-003**	**2.0000e-005**	**6.2700e-003**	**6.2000e-004**	**6.8900e-003**	**3.0000e-003**	**5.7000e-004**	**3.5700e-003**	**0.0000**	**1.5115**	**1.5115**	**4.9000e-004**	**0.0000**	**1.5238**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.1000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0513	0.0513	0.0000	0.0000	0.0518
Total	**3.0000e-005**	**2.0000e-005**	**2.1000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0513**	**0.0513**	**0.0000**	**0.0000**	**0.0518**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0142	0.0000	0.0142	6.8500e-003	0.0000	6.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0800e-003	0.0340	0.0184	4.0000e-005		1.4800e-003	1.4800e-003		1.3700e-003	1.3700e-003	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498
Total	**3.0800e-003**	**0.0340**	**0.0184**	**4.0000e-005**	**0.0142**	**1.4800e-003**	**0.0157**	**6.8500e-003**	**1.3700e-003**	**8.2200e-003**	**0.0000**	**3.6205**	**3.6205**	**1.1700e-003**	**0.0000**	**3.6498**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.3000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1282	0.1282	0.0000	0.0000	0.1296
Total	**7.0000e-005**	**5.0000e-005**	**5.3000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1282**	**0.1282**	**0.0000**	**0.0000**	**0.1296**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0142	0.0000	0.0142	6.8500e-003	0.0000	6.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0800e-003	0.0340	0.0184	4.0000e-005		1.4800e-003	1.4800e-003		1.3700e-003	1.3700e-003	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498
Total	**3.0800e-003**	**0.0340**	**0.0184**	**4.0000e-005**	**0.0142**	**1.4800e-003**	**0.0157**	**6.8500e-003**	**1.3700e-003**	**8.2200e-003**	**0.0000**	**3.6205**	**3.6205**	**1.1700e-003**	**0.0000**	**3.6498**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.3000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1282	0.1282	0.0000	0.0000	0.1296
Total	**7.0000e-005**	**5.0000e-005**	**5.3000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1282**	**0.1282**	**0.0000**	**0.0000**	**0.1296**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0412	0.3126	0.3182	5.5000e-004		0.0147	0.0147		0.0142	0.0142	0.0000	45.3942	45.3942	7.9100e-003	0.0000	45.5919
Total	**0.0412**	**0.3126**	**0.3182**	**5.5000e-004**		**0.0147**	**0.0147**		**0.0142**	**0.0142**	**0.0000**	**45.3942**	**45.3942**	**7.9100e-003**	**0.0000**	**45.5919**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.5000e-004	0.0129	5.6800e-003	6.0000e-005	2.0100e-003	1.7000e-004	2.1800e-003	5.8000e-004	1.6000e-004	7.4000e-004	0.0000	5.8267	5.8267	3.0000e-005	8.0000e-004	6.0652
Worker	2.4900e-003	1.8200e-003	0.0199	5.0000e-005	6.0500e-003	3.0000e-005	6.0800e-003	1.6100e-003	3.0000e-005	1.6400e-003	0.0000	4.8083	4.8083	1.6000e-004	1.5000e-004	4.8583
Total	**3.0400e-003**	**0.0148**	**0.0255**	**1.1000e-004**	**8.0600e-003**	**2.0000e-004**	**8.2600e-003**	**2.1900e-003**	**1.9000e-004**	**2.3800e-003**	**0.0000**	**10.6350**	**10.6350**	**1.9000e-004**	**9.5000e-004**	**10.9235**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0412	0.3126	0.3182	5.5000e-004		0.0147	0.0147		0.0142	0.0142	0.0000	45.3942	45.3942	7.9100e-003	0.0000	45.5918
Total	**0.0412**	**0.3126**	**0.3182**	**5.5000e-004**		**0.0147**	**0.0147**		**0.0142**	**0.0142**	**0.0000**	**45.3942**	**45.3942**	**7.9100e-003**	**0.0000**	**45.5918**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.5000e-004	0.0129	5.6800e-003	6.0000e-005	2.0100e-003	1.7000e-004	2.1800e-003	5.8000e-004	1.6000e-004	7.4000e-004	0.0000	5.8267	5.8267	3.0000e-005	8.0000e-004	6.0652
Worker	2.4900e-003	1.8200e-003	0.0199	5.0000e-005	6.0500e-003	3.0000e-005	6.0800e-003	1.6100e-003	3.0000e-005	1.6400e-003	0.0000	4.8083	4.8083	1.6000e-004	1.5000e-004	4.8583
Total	**3.0400e-003**	**0.0148**	**0.0255**	**1.1000e-004**	**8.0600e-003**	**2.0000e-004**	**8.2600e-003**	**2.1900e-003**	**1.9000e-004**	**2.3800e-003**	**0.0000**	**10.6350**	**10.6350**	**1.9000e-004**	**9.5000e-004**	**10.9235**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.8800e-003	0.0677	0.0881	1.4000e-004		3.4700e-003	3.4700e-003		3.2100e-003	3.2100e-003	0.0000	11.7696	11.7696	3.7300e-003	0.0000	11.8629
Paving	1.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.8900e-003**	**0.0677**	**0.0881**	**1.4000e-004**		**3.4700e-003**	**3.4700e-003**		**3.2100e-003**	**3.2100e-003**	**0.0000**	**11.7696**	**11.7696**	**3.7300e-003**	**0.0000**	**11.8629**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.2000e-004	3.4400e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	0.0000	2.8000e-004	0.0000	0.8334	0.8334	3.0000e-005	3.0000e-005	0.8421
Total	**4.3000e-004**	**3.2000e-004**	**3.4400e-003**	**1.0000e-005**	**1.0500e-003**	**1.0000e-005**	**1.0500e-003**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**0.0000**	**0.8334**	**0.8334**	**3.0000e-005**	**3.0000e-005**	**0.8421**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.8800e-003	0.0677	0.0881	1.4000e-004		3.4700e-003	3.4700e-003		3.2100e-003	3.2100e-003	0.0000	11.7696	11.7696	3.7300e-003	0.0000	11.8629
Paving	1.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.8900e-003**	**0.0677**	**0.0881**	**1.4000e-004**		**3.4700e-003**	**3.4700e-003**		**3.2100e-003**	**3.2100e-003**	**0.0000**	**11.7696**	**11.7696**	**3.7300e-003**	**0.0000**	**11.8629**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.2000e-004	3.4400e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	0.0000	2.8000e-004	0.0000	0.8334	0.8334	3.0000e-005	3.0000e-005	0.8421
Total	**4.3000e-004**	**3.2000e-004**	**3.4400e-003**	**1.0000e-005**	**1.0500e-003**	**1.0000e-005**	**1.0500e-003**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**0.0000**	**0.8334**	**0.8334**	**3.0000e-005**	**3.0000e-005**	**0.8421**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0115					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	**0.0125**	**7.0400e-003**	**9.0700e-003**	**1.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	7.0000e-005	7.9000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.1923	0.1923	1.0000e-005	1.0000e-005	0.1943
Total	**1.0000e-004**	**7.0000e-005**	**7.9000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.1923**	**0.1923**	**1.0000e-005**	**1.0000e-005**	**0.1943**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0115					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	**0.0125**	**7.0400e-003**	**9.0700e-003**	**1.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	7.0000e-005	7.9000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.1923	0.1923	1.0000e-005	1.0000e-005	0.1943
Total	**1.0000e-004**	**7.0000e-005**	**7.9000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.1923**	**0.1923**	**1.0000e-005**	**1.0000e-005**	**0.1943**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.522706	0.056540	0.174672	0.143027	0.031214	0.007930	0.006101	0.021782	0.000496	0.000161	0.028412	0.000923	0.006036
Other Asphalt Surfaces	0.522706	0.056540	0.174672	0.143027	0.031214	0.007930	0.006101	0.021782	0.000496	0.000161	0.028412	0.000923	0.006036

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Other Non-Asphalt Surfaces	0.522706	0.056540	0.174672	0.143027	0.031214	0.007930	0.006101	0.021782	0.000496	0.000161	0.028412	0.000923	0.006036

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.6600e-003	0.0000	3.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-004	6.0000e-004	0.0000	0.0000	6.4000e-004
Unmitigated	3.6600e-003	0.0000	3.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-004	6.0000e-004	0.0000	0.0000	6.4000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.4800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	3.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-004	6.0000e-004	0.0000	0.0000	6.4000e-004
Total	**3.6500e-003**	**0.0000**	**3.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**6.0000e-004**	**6.0000e-004**	**0.0000**	**0.0000**	**6.4000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.4800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	3.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-004	6.0000e-004	0.0000	0.0000	6.4000e-004
Total	**3.6500e-003**	**0.0000**	**3.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**6.0000e-004**	**6.0000e-004**	**0.0000**	**0.0000**	**6.4000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.0189	1.7000e-004	2.0000e-005	2.0293
Unmitigated	2.0189	1.7000e-004	2.0000e-005	2.0293

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.02467	2.0189	1.7000e-004	2.0000e-005	2.0293
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.0189**	**1.7000e-004**	**2.0000e-005**	**2.0293**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.02467	2.0189	1.7000e-004	2.0000e-005	2.0293
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.0189**	**1.7000e-004**	**2.0000e-005**	**2.0293**

8.0 Waste Detail

8.1 Mitigation Measures Waste

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0142	8.4000e-004	0.0000	0.0352
Unmitigated	0.0142	8.4000e-004	0.0000	0.0352

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.07	0.0142	8.4000e-004	0.0000	0.0352
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0142**	**8.4000e-004**	**0.0000**	**0.0352**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.07	0.0142	8.4000e-004	0.0000	0.0352
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0142**	**8.4000e-004**	**0.0000**	**0.0352**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

11.0 Vegetation

29 Palms Channel Trail - Mojave Desert AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

29 Palms Channel Trail

Mojave Desert AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.34	1000sqft	0.01	340.00	0
Other Non-Asphalt Surfaces	32.60	1000sqft	0.75	32,600.00	0
City Park	0.86	Acre	0.86	37,461.60	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	30
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - The project proposes a 2,000-foot-long trail in downtown 29 Palms.

Land Use - The project will disturb a total of 70600 sf, resulting in 340 sf asphalt, 21500 sf concrete and 11100 sf decomposed granite. City Park was selected to provide a highly conservative analysis.

Construction Phase - Assume 4-month construction starting 6.1.2021.

Grading - Materials will balance onsite.

On-road Fugitive Dust - Project area roads are fully paved.

Vehicle Trips - The project serves non-motorized travel only and will not generate trips.

Water And Wastewater - Project will not generate wastewater at buildout. Adjusted to 100% septic tank to reflect project area conditions.

Construction Off-road Equipment Mitigation -

29 Palms Channel Trail - Mojave Desert AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	50.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	PhaseEndDate	5/10/2023	9/28/2022
tblConstructionPhase	PhaseEndDate	4/12/2023	8/17/2022
tblConstructionPhase	PhaseEndDate	7/6/2022	6/8/2022
tblConstructionPhase	PhaseEndDate	4/26/2023	9/14/2022
tblConstructionPhase	PhaseEndDate	6/30/2022	6/2/2022
tblConstructionPhase	PhaseStartDate	4/27/2023	9/15/2022
tblConstructionPhase	PhaseStartDate	7/7/2022	6/9/2022
tblConstructionPhase	PhaseStartDate	7/1/2022	6/3/2022
tblConstructionPhase	PhaseStartDate	4/13/2023	8/18/2022
tblConstructionPhase	PhaseStartDate	6/29/2022	6/1/2022
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	100.00
tblWater	SepticTankPercent	10.33	100.00
tblWater	SepticTankPercent	10.33	100.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.5180	17.0057	13.8781	0.0268	7.1647	0.7427	7.9074	3.4465	0.6833	4.1298	0.0000	2,490.4087	2,490.4087	0.6477	0.0415	2,511.6966
Maximum	**2.5180**	**17.0057**	**13.8781**	**0.0268**	**7.1647**	**0.7427**	**7.9074**	**3.4465**	**0.6833**	**4.1298**	**0.0000**	**2,490.4087**	**2,490.4087**	**0.6477**	**0.0415**	**2,511.6966**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.5180	17.0057	13.8781	0.0268	7.1647	0.7427	7.9074	3.4465	0.6833	4.1298	0.0000	2,490.4087	2,490.4087	0.6477	0.0415	2,511.6966
Maximum	**2.5180**	**17.0057**	**13.8781**	**0.0268**	**7.1647**	**0.7427**	**7.9074**	**3.4465**	**0.6833**	**4.1298**	**0.0000**	**2,490.4087**	**2,490.4087**	**0.6477**	**0.0415**	**2,511.6966**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

29 Palms Channel Trail - Mojave Desert AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0202	3.0000e-005	3.4600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.4000e-003	7.4000e-003	2.0000e-005		7.8900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0202**	**3.0000e-005**	**3.4600e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**		**7.4000e-003**	**7.4000e-003**	**2.0000e-005**	**0.0000**	**7.8900e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0202	3.0000e-005	3.4600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.4000e-003	7.4000e-003	2.0000e-005		7.8900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0202**	**3.0000e-005**	**3.4600e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**		**7.4000e-003**	**7.4000e-003**	**2.0000e-005**	**0.0000**	**7.8900e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2022	6/2/2022	5	2	
2	Grading	Grading	6/3/2022	6/8/2022	5	4	
3	Building Construction	Building Construction	6/9/2022	8/17/2022	5	50	
4	Paving	Paving	8/18/2022	9/14/2022	5	20	
5	Architectural Coating	Architectural Coating	9/15/2022	9/28/2022	5	10	

Acres of Grading (Site Preparation Phase): 1.88

Acres of Grading (Grading Phase): 4

Acres of Paving: 0.76

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,976 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	6.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	30.00	12.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2662	0.0000	6.2662	3.0041	0.0000	3.0041			0.0000			0.0000
Off-Road	1.3122	14.6277	7.0939	0.0172		0.6225	0.6225		0.5727	0.5727		1,666.1738	1,666.1738	0.5389		1,679.6457
Total	**1.3122**	**14.6277**	**7.0939**	**0.0172**	**6.2662**	**0.6225**	**6.8887**	**3.0041**	**0.5727**	**3.5768**		**1,666.1738**	**1,666.1738**	**0.5389**		**1,679.6457**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0317	0.0177	0.2477	6.1000e-004	0.0657	3.3000e-004	0.0661	0.0174	3.0000e-004	0.0177		61.9009	61.9009	1.8500e-003	1.7100e-003	62.4559
Total	**0.0317**	**0.0177**	**0.2477**	**6.1000e-004**	**0.0657**	**3.3000e-004**	**0.0661**	**0.0174**	**3.0000e-004**	**0.0177**		**61.9009**	**61.9009**	**1.8500e-003**	**1.7100e-003**	**62.4559**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2662	0.0000	6.2662	3.0041	0.0000	3.0041			0.0000			0.0000
Off-Road	1.3122	14.6277	7.0939	0.0172		0.6225	0.6225		0.5727	0.5727	0.0000	1,666.1738	1,666.1738	0.5389		1,679.6457
Total	**1.3122**	**14.6277**	**7.0939**	**0.0172**	**6.2662**	**0.6225**	**6.8887**	**3.0041**	**0.5727**	**3.5768**	**0.0000**	**1,666.1738**	**1,666.1738**	**0.5389**		**1,679.6457**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0317	0.0177	0.2477	6.1000e-004	0.0657	3.3000e-004	0.0661	0.0174	3.0000e-004	0.0177		61.9009	61.9009	1.8500e-003	1.7100e-003	62.4559
Total	**0.0317**	**0.0177**	**0.2477**	**6.1000e-004**	**0.0657**	**3.3000e-004**	**0.0661**	**0.0174**	**3.0000e-004**	**0.0177**		**61.9009**	**61.9009**	**1.8500e-003**	**1.7100e-003**	**62.4559**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**7.0826**	**0.7423**	**7.8249**	**3.4247**	**0.6829**	**4.1076**		**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0396	0.0221	0.3096	7.7000e-004	0.0822	4.1000e-004	0.0826	0.0218	3.8000e-004	0.0222		77.3761	77.3761	2.3100e-003	2.1300e-003	78.0699
Total	**0.0396**	**0.0221**	**0.3096**	**7.7000e-004**	**0.0822**	**4.1000e-004**	**0.0826**	**0.0218**	**3.8000e-004**	**0.0222**		**77.3761**	**77.3761**	**2.3100e-003**	**2.1300e-003**	**78.0699**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**7.0826**	**0.7423**	**7.8249**	**3.4247**	**0.6829**	**4.1076**	**0.0000**	**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0396	0.0221	0.3096	7.7000e-004	0.0822	4.1000e-004	0.0826	0.0218	3.8000e-004	0.0222		77.3761	77.3761	2.3100e-003	2.1300e-003	78.0699
Total	**0.0396**	**0.0221**	**0.3096**	**7.7000e-004**	**0.0822**	**4.1000e-004**	**0.0826**	**0.0218**	**3.8000e-004**	**0.0222**		**77.3761**	**77.3761**	**2.3100e-003**	**2.1300e-003**	**78.0699**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**		**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0226	0.4903	0.2229	2.4400e-003	0.0814	6.8500e-003	0.0882	0.0234	6.5500e-003	0.0300		256.7376	256.7376	1.3200e-003	0.0351	267.2290
Worker	0.1188	0.0664	0.9288	2.3000e-003	0.2464	1.2400e-003	0.2477	0.0654	1.1400e-003	0.0665		232.1283	232.1283	6.9300e-003	6.4000e-003	234.2096
Total	**0.1414**	**0.5567**	**1.1517**	**4.7400e-003**	**0.3278**	**8.0900e-003**	**0.3359**	**0.0888**	**7.6900e-003**	**0.0965**		**488.8659**	**488.8659**	**8.2500e-003**	**0.0415**	**501.4385**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689	0.0000	2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**	**0.0000**	**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0226	0.4903	0.2229	2.4400e-003	0.0814	6.8500e-003	0.0882	0.0234	6.5500e-003	0.0300		256.7376	256.7376	1.3200e-003	0.0351	267.2290
Worker	0.1188	0.0664	0.9288	2.3000e-003	0.2464	1.2400e-003	0.2477	0.0654	1.1400e-003	0.0665		232.1283	232.1283	6.9300e-003	6.4000e-003	234.2096
Total	**0.1414**	**0.5567**	**1.1517**	**4.7400e-003**	**0.3278**	**8.0900e-003**	**0.3359**	**0.0888**	**7.6900e-003**	**0.0965**		**488.8659**	**488.8659**	**8.2500e-003**	**0.0415**	**501.4385**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	1.3100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6890**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**		**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0515	0.0288	0.4025	1.0000e-003	0.1068	5.4000e-004	0.1073	0.0283	4.9000e-004	0.0288		100.5889	100.5889	3.0000e-003	2.7700e-003	101.4908
Total	**0.0515**	**0.0288**	**0.4025**	**1.0000e-003**	**0.1068**	**5.4000e-004**	**0.1073**	**0.0283**	**4.9000e-004**	**0.0288**		**100.5889**	**100.5889**	**3.0000e-003**	**2.7700e-003**	**101.4908**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205	0.0000	1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	1.3100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6890**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**	**0.0000**	**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0515	0.0288	0.4025	1.0000e-003	0.1068	5.4000e-004	0.1073	0.0283	4.9000e-004	0.0288		100.5889	100.5889	3.0000e-003	2.7700e-003	101.4908
Total	**0.0515**	**0.0288**	**0.4025**	**1.0000e-003**	**0.1068**	**5.4000e-004**	**0.1073**	**0.0283**	**4.9000e-004**	**0.0288**		**100.5889**	**100.5889**	**3.0000e-003**	**2.7700e-003**	**101.4908**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.2897					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**2.4942**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0238	0.0133	0.1858	4.6000e-004	0.0493	2.5000e-004	0.0495	0.0131	2.3000e-004	0.0133		46.4257	46.4257	1.3900e-003	1.2800e-003	46.8419
Total	**0.0238**	**0.0133**	**0.1858**	**4.6000e-004**	**0.0493**	**2.5000e-004**	**0.0495**	**0.0131**	**2.3000e-004**	**0.0133**		**46.4257**	**46.4257**	**1.3900e-003**	**1.2800e-003**	**46.8419**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.2897					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**2.4942**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0238	0.0133	0.1858	4.6000e-004	0.0493	2.5000e-004	0.0495	0.0131	2.3000e-004	0.0133		46.4257	46.4257	1.3900e-003	1.2800e-003	46.8419
Total	**0.0238**	**0.0133**	**0.1858**	**4.6000e-004**	**0.0493**	**2.5000e-004**	**0.0495**	**0.0131**	**2.3000e-004**	**0.0133**		**46.4257**	**46.4257**	**1.3900e-003**	**1.2800e-003**	**46.8419**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.522706	0.056540	0.174672	0.143027	0.031214	0.007930	0.006101	0.021782	0.000496	0.000161	0.028412	0.000923	0.006036
Other Asphalt Surfaces	0.522706	0.056540	0.174672	0.143027	0.031214	0.007930	0.006101	0.021782	0.000496	0.000161	0.028412	0.000923	0.006036
Other Non-Asphalt Surfaces	0.522706	0.056540	0.174672	0.143027	0.031214	0.007930	0.006101	0.021782	0.000496	0.000161	0.028412	0.000923	0.006036

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0202	3.0000e-005	3.4600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.4000e-003	7.4000e-003	2.0000e-005		7.8900e-003
Unmitigated	0.0202	3.0000e-005	3.4600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.4000e-003	7.4000e-003	2.0000e-005		7.8900e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.2700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0136					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.2000e-004	3.0000e-005	3.4600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.4000e-003	7.4000e-003	2.0000e-005		7.8900e-003
Total	**0.0202**	**3.0000e-005**	**3.4600e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**7.4000e-003**	**7.4000e-003**	**2.0000e-005**		**7.8900e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.2700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0136					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.2000e-004	3.0000e-005	3.4600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.4000e-003	7.4000e-003	2.0000e-005		7.8900e-003
Total	**0.0202**	**3.0000e-005**	**3.4600e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**7.4000e-003**	**7.4000e-003**	**2.0000e-005**		**7.8900e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

29 Palms Channel Trail - Mojave Desert AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

29 Palms Channel Trail

Mojave Desert AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.34	1000sqft	0.01	340.00	0
Other Non-Asphalt Surfaces	32.60	1000sqft	0.75	32,600.00	0
City Park	0.86	Acre	0.86	37,461.60	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	30
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - The project proposes a 2,000-foot-long trail in downtown 29 Palms.

Land Use - The project will disturb a total of 70600 sf, resulting in 340 sf asphalt, 21500 sf concrete and 11100 sf decomposed granite. City Park was selected to provide a highly conservative analysis.

Construction Phase - Assume 4-month construction starting 6.1.2021.

Grading - Materials will balance onsite.

On-road Fugitive Dust - Project area roads are fully paved.

Vehicle Trips - The project serves non-motorized travel only and will not generate trips.

Water And Wastewater - Project will not generate wastewater at buildout. Adjusted to 100% septic tank to reflect project area conditions.

Construction Off-road Equipment Mitigation -

29 Palms Channel Trail - Mojave Desert AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	50.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	PhaseEndDate	5/10/2023	9/28/2022
tblConstructionPhase	PhaseEndDate	4/12/2023	8/17/2022
tblConstructionPhase	PhaseEndDate	7/6/2022	6/8/2022
tblConstructionPhase	PhaseEndDate	4/26/2023	9/14/2022
tblConstructionPhase	PhaseEndDate	6/30/2022	6/2/2022
tblConstructionPhase	PhaseStartDate	4/27/2023	9/15/2022
tblConstructionPhase	PhaseStartDate	7/7/2022	6/9/2022
tblConstructionPhase	PhaseStartDate	7/1/2022	6/3/2022
tblConstructionPhase	PhaseStartDate	4/13/2023	8/18/2022
tblConstructionPhase	PhaseStartDate	6/29/2022	6/1/2022
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	100.00
tblWater	SepticTankPercent	10.33	100.00
tblWater	SepticTankPercent	10.33	100.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.5156	17.0064	13.6980	0.0265	7.1647	0.7427	7.9074	3.4465	0.6833	4.1298	0.0000	2,464.8727	2,464.8727	0.6477	0.0417	2,486.2276
Maximum	**2.5156**	**17.0064**	**13.6980**	**0.0265**	**7.1647**	**0.7427**	**7.9074**	**3.4465**	**0.6833**	**4.1298**	**0.0000**	**2,464.8727**	**2,464.8727**	**0.6477**	**0.0417**	**2,486.2276**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.5156	17.0064	13.6980	0.0265	7.1647	0.7427	7.9074	3.4465	0.6833	4.1298	0.0000	2,464.8727	2,464.8727	0.6477	0.0417	2,486.2276
Maximum	**2.5156**	**17.0064**	**13.6980**	**0.0265**	**7.1647**	**0.7427**	**7.9074**	**3.4465**	**0.6833**	**4.1298**	**0.0000**	**2,464.8727**	**2,464.8727**	**0.6477**	**0.0417**	**2,486.2276**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

29 Palms Channel Trail - Mojave Desert AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0202	3.0000e-005	3.4600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.4000e-003	7.4000e-003	2.0000e-005		7.8900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0202**	**3.0000e-005**	**3.4600e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**		**7.4000e-003**	**7.4000e-003**	**2.0000e-005**	**0.0000**	**7.8900e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0202	3.0000e-005	3.4600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.4000e-003	7.4000e-003	2.0000e-005		7.8900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0202**	**3.0000e-005**	**3.4600e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**		**7.4000e-003**	**7.4000e-003**	**2.0000e-005**	**0.0000**	**7.8900e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2022	6/2/2022	5	2	
2	Grading	Grading	6/3/2022	6/8/2022	5	4	
3	Building Construction	Building Construction	6/9/2022	8/17/2022	5	50	
4	Paving	Paving	8/18/2022	9/14/2022	5	20	
5	Architectural Coating	Architectural Coating	9/15/2022	9/28/2022	5	10	

Acres of Grading (Site Preparation Phase): 1.88

Acres of Grading (Grading Phase): 4

Acres of Paving: 0.76

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,976 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	6.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	30.00	12.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2662	0.0000	6.2662	3.0041	0.0000	3.0041			0.0000			0.0000
Off-Road	1.3122	14.6277	7.0939	0.0172		0.6225	0.6225		0.5727	0.5727		1,666.1738	1,666.1738	0.5389		1,679.6457
Total	**1.3122**	**14.6277**	**7.0939**	**0.0172**	**6.2662**	**0.6225**	**6.8887**	**3.0041**	**0.5727**	**3.5768**		**1,666.1738**	**1,666.1738**	**0.5389**		**1,679.6457**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0285	0.0182	0.1974	5.4000e-004	0.0657	3.3000e-004	0.0661	0.0174	3.0000e-004	0.0177		54.9806	54.9806	1.8800e-003	1.7400e-003	55.5450
Total	**0.0285**	**0.0182**	**0.1974**	**5.4000e-004**	**0.0657**	**3.3000e-004**	**0.0661**	**0.0174**	**3.0000e-004**	**0.0177**		**54.9806**	**54.9806**	**1.8800e-003**	**1.7400e-003**	**55.5450**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2662	0.0000	6.2662	3.0041	0.0000	3.0041			0.0000			0.0000
Off-Road	1.3122	14.6277	7.0939	0.0172		0.6225	0.6225		0.5727	0.5727	0.0000	1,666.1738	1,666.1738	0.5389		1,679.6457
Total	**1.3122**	**14.6277**	**7.0939**	**0.0172**	**6.2662**	**0.6225**	**6.8887**	**3.0041**	**0.5727**	**3.5768**	**0.0000**	**1,666.1738**	**1,666.1738**	**0.5389**		**1,679.6457**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0285	0.0182	0.1974	5.4000e-004	0.0657	3.3000e-004	0.0661	0.0174	3.0000e-004	0.0177		54.9806	54.9806	1.8800e-003	1.7400e-003	55.5450
Total	**0.0285**	**0.0182**	**0.1974**	**5.4000e-004**	**0.0657**	**3.3000e-004**	**0.0661**	**0.0174**	**3.0000e-004**	**0.0177**		**54.9806**	**54.9806**	**1.8800e-003**	**1.7400e-003**	**55.5450**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**7.0826**	**0.7423**	**7.8249**	**3.4247**	**0.6829**	**4.1076**		**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0356	0.0228	0.2468	6.8000e-004	0.0822	4.1000e-004	0.0826	0.0218	3.8000e-004	0.0222		68.7258	68.7258	2.3500e-003	2.1700e-003	69.4312
Total	**0.0356**	**0.0228**	**0.2468**	**6.8000e-004**	**0.0822**	**4.1000e-004**	**0.0826**	**0.0218**	**3.8000e-004**	**0.0222**		**68.7258**	**68.7258**	**2.3500e-003**	**2.1700e-003**	**69.4312**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**7.0826**	**0.7423**	**7.8249**	**3.4247**	**0.6829**	**4.1076**	**0.0000**	**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0356	0.0228	0.2468	6.8000e-004	0.0822	4.1000e-004	0.0826	0.0218	3.8000e-004	0.0222		68.7258	68.7258	2.3500e-003	2.1700e-003	69.4312
Total	**0.0356**	**0.0228**	**0.2468**	**6.8000e-004**	**0.0822**	**4.1000e-004**	**0.0826**	**0.0218**	**3.8000e-004**	**0.0222**		**68.7258**	**68.7258**	**2.3500e-003**	**2.1700e-003**	**69.4312**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**		**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0216	0.5185	0.2313	2.4500e-003	0.0814	6.8700e-003	0.0883	0.0234	6.5700e-003	0.0300		257.1526	257.1526	1.2700e-003	0.0352	267.6759
Worker	0.1069	0.0683	0.7403	2.0400e-003	0.2464	1.2400e-003	0.2477	0.0654	1.1400e-003	0.0665		206.1773	206.1773	7.0400e-003	6.5100e-003	208.2937
Total	**0.1285**	**0.5867**	**0.9715**	**4.4900e-003**	**0.3278**	**8.1100e-003**	**0.3359**	**0.0888**	**7.7100e-003**	**0.0965**		**463.3298**	**463.3298**	**8.3100e-003**	**0.0417**	**475.9695**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689	0.0000	2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**	**0.0000**	**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0216	0.5185	0.2313	2.4500e-003	0.0814	6.8700e-003	0.0883	0.0234	6.5700e-003	0.0300		257.1526	257.1526	1.2700e-003	0.0352	267.6759
Worker	0.1069	0.0683	0.7403	2.0400e-003	0.2464	1.2400e-003	0.2477	0.0654	1.1400e-003	0.0665		206.1773	206.1773	7.0400e-003	6.5100e-003	208.2937
Total	**0.1285**	**0.5867**	**0.9715**	**4.4900e-003**	**0.3278**	**8.1100e-003**	**0.3359**	**0.0888**	**7.7100e-003**	**0.0965**		**463.3298**	**463.3298**	**8.3100e-003**	**0.0417**	**475.9695**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	1.3100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6890**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**		**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0463	0.0296	0.3208	8.8000e-004	0.1068	5.4000e-004	0.1073	0.0283	4.9000e-004	0.0288		89.3435	89.3435	3.0500e-003	2.8200e-003	90.2606
Total	**0.0463**	**0.0296**	**0.3208**	**8.8000e-004**	**0.1068**	**5.4000e-004**	**0.1073**	**0.0283**	**4.9000e-004**	**0.0288**		**89.3435**	**89.3435**	**3.0500e-003**	**2.8200e-003**	**90.2606**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205	0.0000	1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	1.3100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6890**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**	**0.0000**	**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0463	0.0296	0.3208	8.8000e-004	0.1068	5.4000e-004	0.1073	0.0283	4.9000e-004	0.0288		89.3435	89.3435	3.0500e-003	2.8200e-003	90.2606
Total	**0.0463**	**0.0296**	**0.3208**	**8.8000e-004**	**0.1068**	**5.4000e-004**	**0.1073**	**0.0283**	**4.9000e-004**	**0.0288**		**89.3435**	**89.3435**	**3.0500e-003**	**2.8200e-003**	**90.2606**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.2897					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**2.4942**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0214	0.0137	0.1481	4.1000e-004	0.0493	2.5000e-004	0.0495	0.0131	2.3000e-004	0.0133		41.2355	41.2355	1.4100e-003	1.3000e-003	41.6587
Total	**0.0214**	**0.0137**	**0.1481**	**4.1000e-004**	**0.0493**	**2.5000e-004**	**0.0495**	**0.0131**	**2.3000e-004**	**0.0133**		**41.2355**	**41.2355**	**1.4100e-003**	**1.3000e-003**	**41.6587**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.2897					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**2.4942**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0214	0.0137	0.1481	4.1000e-004	0.0493	2.5000e-004	0.0495	0.0131	2.3000e-004	0.0133		41.2355	41.2355	1.4100e-003	1.3000e-003	41.6587
Total	**0.0214**	**0.0137**	**0.1481**	**4.1000e-004**	**0.0493**	**2.5000e-004**	**0.0495**	**0.0131**	**2.3000e-004**	**0.0133**		**41.2355**	**41.2355**	**1.4100e-003**	**1.3000e-003**	**41.6587**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.522706	0.056540	0.174672	0.143027	0.031214	0.007930	0.006101	0.021782	0.000496	0.000161	0.028412	0.000923	0.006036
Other Asphalt Surfaces	0.522706	0.056540	0.174672	0.143027	0.031214	0.007930	0.006101	0.021782	0.000496	0.000161	0.028412	0.000923	0.006036
Other Non-Asphalt Surfaces	0.522706	0.056540	0.174672	0.143027	0.031214	0.007930	0.006101	0.021782	0.000496	0.000161	0.028412	0.000923	0.006036

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

29 Palms Channel Trail - Mojave Desert AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0202	3.0000e-005	3.4600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.4000e-003	7.4000e-003	2.0000e-005		7.8900e-003
Unmitigated	0.0202	3.0000e-005	3.4600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.4000e-003	7.4000e-003	2.0000e-005		7.8900e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.2700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0136					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.2000e-004	3.0000e-005	3.4600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.4000e-003	7.4000e-003	2.0000e-005		7.8900e-003
Total	**0.0202**	**3.0000e-005**	**3.4600e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**7.4000e-003**	**7.4000e-003**	**2.0000e-005**		**7.8900e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.2700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0136					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.2000e-004	3.0000e-005	3.4600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.4000e-003	7.4000e-003	2.0000e-005		7.8900e-003
Total	**0.0202**	**3.0000e-005**	**3.4600e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**7.4000e-003**	**7.4000e-003**	**2.0000e-005**		**7.8900e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B

Biological Resources Assessment Report

Biological Resources Assessment Report

Twentynine Palms Channel Trail Project
Twentynine Palms, San Bernardino County, California

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August 2021

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Channel Trail Project
Twentynine Palms, San Bernardino County, California

Biological Resources Assessment

1.0 INTRODUCTION

This report presents the results of a biological resources assessment conducted by Wood Environment and Infrastructure Solutions, Inc. (Wood) for a proposed multi-use trail along the top of bank on the south side of the existing flood control channel between Split Rock Avenue and Adobe Road, in the city of Twentynine Palms, San Bernardino County, California. Wood was contracted to perform this work by Terra Nova Planning and Research. This report presents the regulatory framework, methods, and results of baseline biological surveys for the proposed project.

1.1 Project Description/Existing Conditions

The project is generally located north of State Route 62 (SR-62), south of Two Mile Road, east of Larrea Avenue, and west of Adobe Road (Figure 1 – Appendix A). The project is located within the southeast quarter of Section 29, Township 1 North, Range 9 East, as shown on the United States Geological Survey (USGS) 7.5-minute Twentynine Palms, California quadrangle (Figure 2 – Appendix A). As shown on Figure 3, the Project is bounded on the west by Split Rock Avenue and open space; by Adobe Road and commercial development of “downtown Twentynine Palms” on the east; by residential development and Buena Vista Drive on the south; and by disturbed open space, residential development, Mesquite Springs Road (dirt), Bagley Avenue (paved), and Civic Center Drive (paved) to the north. An existing manmade drainage channel runs along the entire northern edge of the proposed trail. The trail appears to be located entirely within an existing dirt access road that borders the southern edge of the existing flood control channel (please see Photographs # and in Appendix B). Elevations within the project site range from approximately 2,019 feet above mean sea level (AMSL) at Split Rock Avenue to approximately 1,989 feet AMSL at Adobe Road. The average rainfall for the area (City of Twentynine Palms) is 6.3 inches per year (distributed more or less across 21 days of precipitation), with an average of 285 sunny days per year (Best Places Climate 2021).

1.2 Regulatory Framework

1.2.1 Federal

1.2.1.1 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's 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 habitat (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.

Section 10(a) of the ESA authorizes the issuance of incidental take permits and establishes standards for the content of habitat conservation plans (see Section 3.3 below).

1.2.1.2 Migratory Bird Treaty Act (MBTA) –

Treaties signed by the U.S., Great Britain, Mexico, Japan, and the countries 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 the 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.

1.2.1.3 National Environmental Policy Act (NEPA) –

If portions of a proposed project could fall under the jurisdiction of a federal agency (i.e., U.S. Army Corps of Engineers) they are subject to environmental review pursuant to NEPA. 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."

1.2.1.4 Section 404 of the Clean Water Act –

This section of the Clean Water Act, 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 of 0.5 acre for

nationwide permits, takes steps to avoid impacts to wetlands where practicable, minimizes potential impacts to wetlands, and provides 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.

1.2.2 State

California Endangered Species Act (CESA) – This legislation is similar to the federal ESA, but it is administered by the California Department of Fish and Wildlife (CDFW – formerly Department of Fish and Game). 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. 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 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.

1.2.2.1 California Environmental Quality Act (CEQA) –

The basic goal of CEQA is to maintain a high-quality environment now and in the future. The specific goals are for California's public agencies to:

1) identify the significant environmental effects of their actions; and, either
2) avoid those significant environmental effects, where feasible; or
3) mitigate those significant environmental effects, where feasible.

CEQA applies to "projects" proposed to be undertaken or requiring approval by state and local government agencies. Projects are activities that 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, CEQA requires one of these public agencies to serve as the "lead agency."

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

1) Determine if the activity is a "project" subject to CEQA;
2) Determine if the "project" is exempt from CEQA;
3) 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:
    a) Negative Declaration if it finds no "significant" impacts;
    b) Mitigated Negative Declaration if it finds "significant" impacts but revises the project to avoid or mitigate those significant impacts;
    c) Environmental Impact Report (EIR) if it finds "significant" impacts.

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

1.2.2.2 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 CESA. However, the list of species afforded protection in accordance with the NPPA includes those listed as rare and endangered under CESA. 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 CDFW, pursuant to section 1903.5 that a rare or endangered plant is growing on their property, the landowner shall notify CDFW at least 10 days prior to the changing of land uses to allow CDFW to salvage the plants.

1.2.2.3 Natural Community Conservation Planning (NCCP) Program –

The NCCP, which is managed by the CDFW, is intended to conserve multiple species and their associated habitats, while also providing for compatible use of private lands. Through local planning, the NCCP planning process is designed to provide protection for wildlife and natural habitats before the environment becomes so fragmented or degraded by development that species listing are required under CESA. Instead of conserving small, often isolated "islands" of habitat for just one listed species, agencies, local jurisdictions, and/or other interested parties have an opportunity through the NCCP to work cooperatively to develop plans that consider broad areas of land for conservation that would provide habitat for many species. Partners enroll in the programs and, by mutual consent, areas considered to have high conservation priorities or values are set aside and protected from development. Partners may also agree to study, monitor, and develop management plans for these high value "reserve" areas. The NCCP provides an avenue for fostering economic growth by allowing approved development in areas with lower conservation value. See further discussion in Section 3.3 below.

1.2.2.4 Sections 1600-1603 of the State Fish and Game Code –

The California Fish and Game (Wildlife) 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, CDFW jurisdiction is assessed in the field based on one, or a combination, of the following criteria:

1) At minimum, intermittent and seasonal flow through a bed or channel with banks and that also supports fish or other aquatic life.
2) A watercourse having a surface or subsurface flow regime that supports or that has supported riparian vegetation.
3) Hydrogeomorphically distinct top-of-embankment to top-of-embankment limits.
4) Outer ground cover and canopy extents of, typically, riparian associated vegetation species that would be sustained by surface and/or subsurface waters of the watercourse.

The 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 on at least a 1:1 ratio.

1.2.2.5 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 reasonably available and shall include consideration of the species' capability to survive and reproduce.

1.2.2.6 Section 3505.5 of the State Fish and Game Code –

This section makes it unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds-of-prey, e.g.: owls, hawks, eagles, etc.) or to take, possess, or destroy the nest or eggs of any bird-of-prey.

2.0 METHODS

Methods employed in the performance of this biological assessment consisted of a literature review, followed by a reconnaissance-level site survey to obtain a general inventory of plant and wildlife species on the project site; and to determine the potential for, or presence of, sensitive biological resources or their habitat on the project site. In addition to the general biological assessment described herein, a Wood biologist also performed a habitat assessment for burrowing owl (*Athene cunicularia*) on the project site in accordance with the methodology presented in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game, March 7, 2012). The biologist also performed a habitat assessment addressing the potential for desert tortoise (*Gopherus agassizii*) to occur in and/or utilize the project footprint and Biological Study Area (BSA).

2.1 Literature Review

A literature review was conducted to identify sensitive biological resources known from the vicinity of the project site. This included a review of the CDFW's California Natural Diversity Data Base (CNDDB 2021) computerized data base (Rarefind 5), and a review of the California Native Plant Society's (CNPS) *Rare and Endangered Vascular Plants of California* (2021). Pertinent documents from the Wood library and files were also consulted.

2.2 Biological Reconnaissance of the Project Site

The project site was surveyed on foot from 0849 to 1015 on 27 July 2021, by Wood senior biologist Nathan T. Moorhatch. Weather conditions during the survey consisted of clear skies (0% clouds) with temperatures ranging from 85°F to 92°F (degrees Fahrenheit), and light winds between 0 and 2 mph. Surveys were conducted systematically, visually inspecting all areas of the site and adjacent accessible areas for components of sensitive species habitat and potential sign of sensitive biological resources.

The assessment of the potential for occurrence of sensitive biological resources known from the project vicinity was based on geographic range, CNDDB records, habitat associations, the

biologists' experience in the region, general site conditions, and observable soil types. All plant and vertebrate species observed were recorded in field notes.

Some wildlife species were identified through indirect sign (*e.g.*, scat, tracks, nests, burrows, vocalizations, etc.). Scientific nomenclature for this report is from the following standard reference sources: plant communities, Sawyer, Keeler-Wolf, and Evens (2008), reptiles and amphibians, Stebbins and McGinnis (2012); birds, California Bird Records Committee (2021); and mammals, CDFW (2016). Vegetation nomenclature follows The Jepson eFlora, Vascular Plants of California, (website 2020). When the Jepson eFlora does not list a common name, common name nomenclature follows the United States Department of Agriculture, Natural Resources Conservation Service (USDA) Plants Database (USDA 2021).

During the biological field survey, it was determined that habitat that was potentially suitable for the burrowing owl (*Athene cunicularia*) was present; but upon closer inspection there were no burrows or manmade burrow surrogates such as old, abandoned pipe segments, concrete slab rubble piles, etc. present that could provide the necessary shelter sites required for burrowing owl occupation. No burrowing owl sign (whitewash, pellets, or feathers) or burrowing owls were observed on the project alignment or immediately adjacent areas. Similarly, the project footprint and immediately adjacent areas (there are four small vacant lot areas that border the southern edge of the proposed trail alignment) did not have any burrows capable of supporting desert tortoise. No tortoises or tortoise sign were observed in the BSA.

3.0 RESULTS

3.1 Soils

The USDA online Web Soil Survey (Online website 2021) was consulted to determine the soil types mapped as occurring within the Project area. Unfortunately, there is not existing soil data present for the project alignment and immediate vicinity.

3.2 Vegetation and Flora

Appendix B includes the scientific and common names for plant species identified during the surveys. Eighteen (18) plant species were identified. Of the plant species detected on the site during the survey, 17% were non-native species.

The project site occurs in an area that has experienced significant development and disturbance during the past. In addition to the project footprint, the area surrounding the proposed trail alignment has been moderately to greatly altered from its natural state and is located in close proximity to areas of both residential and commercial development (please see Figure 2 – Appendix A). The proposed trail is located within an existing dirt access road that has been completely cleared and compacted (please see Photographs & in Appendix B). Most of the plant species observed in the BSA were associated with the drainage channel and included but were not limited to the following: desert willow (*Chilopsis linearis* ssp. *arcuata*), smoke tree (*Psorothamnus spinosus*), catclaw (*Senegalia greggii*), bladderpod (*Peritoma arborea*), Mexican palo verde (*Parkinsonia aculeata*), and Thurber's sandpaper plant (*Petalonyx thurberi*).

3.3 Wildlife

The list of vertebrate animals detected on the project site during the survey totaled nine (9) species (1 reptile, 6 birds and 2 mammals). This low number is a direct reflection of the semi-urban/residential setting of the project site which is located more or less in "downtown"

Twentynine Palms. The inventory was also limited by the seasonal timing and short duration of the survey period, and by the nocturnal and fossorial habits of many animals.

Only one reptile was observed, a young northern desert iguana (*Dipsosaurus dorsalis dorsalis*). A few additional species would be expected to occur, including, but not limited to, western side-blotched lizard (*Uta stansburiana elegans*), Great Basin whiptail (*Aspidoscelis tigris tigris*), and red racer (*Coluber [=Maticophis] flagellum piceus*). The disturbed nature of the project site reduces the potential for use of the site by a greater variety of desert reptiles, as many of these species require better quality natural habitats, and some are substrate specialists (typically on dunes or wind-deposited sands).

Birds observed during the survey included a mix of native and non-native species common to desert edge habitats and developed areas of the Mojave Desert. The birds observed included verdin (*Auriparus flaviceps*), cactus wren (*Campylorhynchus brunneicapillus*), Eurasian collared-dove (*Streptopelia decaocto*), house finch (*Haemorhous mexicanus*), common raven (*Corvus corax*), and mourning dove (*Zenaida macroura*).

Round-tailed ground squirrels (*Xerospermophilus tereticaudus*) and desert cottontail (*Sylvilagus audubonii*) were the only mammals detected during the surveys. Other mammals that may be present include coyote *(Canis latrans*), kangaroo rats (*Dipodomys* sp.), and various other small rodents.

3.4 Sensitive Elements

Plant or animal taxa may be considered "sensitive" due to declining populations, vulnerability to habitat change or loss, or because of restricted distributions. Certain sensitive species have been listed as Threatened or Endangered by the USFWS or by the CDFW and are protected by the federal and state ESAs and the California Native Plant Protection Act. Other species have been identified as sensitive by the USFWS, the CDFW, or by private conservation organizations, including the CNPS, but have not been formally listed as Threatened or Endangered. Impacts to such species can still be considered significant under CEQA.

The literature review and Wood biologists' knowledge of the project vicinity indicated that as many as twenty-two (22) sensitive biological resources potentially occur in the vicinity of the project site (within a five-mile radius of the project). For a summary of sensitive species and habitats known to occur or potentially occurring in the vicinity of the project site, see Tables 1 through 5 and Figure 3.

Table 1. Sensitive Plants: Twentynine Palms Channel Trail Project.

Species	Protective Status	Habitat	Flowering Period	Occurrence Probability
Jaffueliobryum wrightii Wright's Jaffueliobryum moss	F: ND C: ND CNPS List: 2B.3 State Rank: S2S3	Has been found in dry openings (such as rock crevices), carbonate deposits in alpine dwarf scrub, Mojavean desert scrub, and Pinyon – Juniper Woodland. 525 – 8,205 feet elevation	N/A (mosses are not flowering plants)	Absent (No habitat in project BSA)
Ayenia compacta California ayenia	F: ND C: ND CNPS List: 2B.3 State Rank: S3	Sandy and gravelly washes, dry canyons, 490 – 3,595 feet elevation.	March - April	Absent (Project alignment is a bare, compacted existing dirt access road. No habitat for this species present, also not likely in disturbed manmade channel adjacent to proposed trail)
Calochortus striatus Alkali Mariposa-Lily	F: ND C: ND CNPS List: 1B.2 State Rank: S2S3	Alkaline (mesic) areas in chaparral, chenopod scrub, Mojavean desert scrub, meadows, and seeps. Between 230 – 5,235 feet elevation.	April - June	Absent The author has surveyed for and seen this species, this site and BSA does not have habitat for this plant.
Lasthenia glabrata ssp. *coulteri* Coulter's Goldfields	F: ND C: ND CNPS List: 1B.1 State Rank: S2	Coastal salt marshes and swamps, playas, and vernal pools, 5-4,005 feet elevation.	February - June	Absent (Suitable habitat is not present on site or BSA for this species, according to CNPS species is assumed to be extirpated in the 29 Palms area)
Linanthus maculatus ssp. *maculatus*	F: ND C: ND CNPS List: 1B.2 State Rank: S2	Endemic to California and currently only known from a few locales (sandy flats) in the Little San Bernardino Mountains and adjacent Palm Springs area in the northern end of the Coachella Valley. 460 – 4005 feet elevation.	March - May	Absent The project site is not within the currently understood range of the species and does not have habitat for this plant.
Menodora spinescens var. *mohavensis* Mojave Menodora	F: ND C: ND CNPS: List 2B.2 State Rank: S2	Mojavean desert scrub with andesite gravel, rocky hillsides, and canyons 2,265 – 6,560 feet elevation.	April – May	Absent (Suitable habitat not present on site for this species, site is below preferred elevation range)

Species	Protective Status	Habitat	Flowering Period	Occurrence Probability
Monardella robisonii Robison's Monardella	F: ND C: ND CNPS: List 2B.2 State Rank: S2	A California endemic, known only from Mojave Desert mountains primarily within Joshua Tree N.P. and lower elevations in Sand to Snow Nat. Monument. Grows among granitic boulders in desert chaparral and pinyon-juniper woodlands. 2,000 – 4,920 feet elevation.	(February) April – September (October)	Absent (Habitat not present in the project BSA, site is not within currently known range of species).
Sidalcea neomexicana Salt Spring Checkerbloom	F: ND C: ND CNPS: List 2B.2 State Rank: S2	Alkaline and mesic areas in chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub and playas. 50 – 5,020 feet elevation.	March - June	Absent (habitat not present within project BSA for this species)
Streptanthus bernardinus Laguna Mountains Jewelflower	F: ND C: ND CNPS: List 4.3 State Rank: S3S4	Known from the Transverse Ranges around Los Angeles and the Peninsular Ranges to the south (including the Laguna Mountains east of San Diego). Grows in temperate coniferous forest and chaparral on slopes. 2,200 – 8,205 feet elevation.	May - August	Absent Site is outside the known range of the species, no habitat in the BSA, and site is also below the elevation range of the species.
Wislizenia refracta Jackass-clover	F: ND C: ND CNPS: List 2B.2 State Rank: S1	Low, sandy or alkaline soil in deserts and arid grasslands, often along roads or washes, 1,970 – 2,625 feet elevation	April - November	Absent (suitable habitat not present, species not observed during survey [even after recent rain])

Table 2. Sensitive Habitats: Twentynine Palms Channel Trail Project.

Species	Protective Status (F=Federal, C=California)	Habitat	Occurrence Probability
Desert Fan Palm Oasis Woodland	State rank: S3	This designation does not include cultivated (planted) stands of California fan palm. Restricted to areas with permanent water such as moist alkaline areas near seeps, springs, and streams. Also found on hillsides or canyons, arroyos, or washes. Often adjacent to fault areas (upwelling).	Absent (This plant community is not present in the project BSA)

Table 3. Sensitive Reptiles: Twentynine Palms Channel Trail Project.

Species	Protective Status (F=Federal, C=California)	Habitat	Occurrence Probability
Desert Tortoise (*Gopherus agassizii*)	F: THR C: THR State rank: S2S3	Found in a variety of Mojave Desert habitats from sandy flats to rocky hills, alluvial fans, washes, and canyons with suitable soils for burrow/den excavation, most often in Creosote bush scrub habitat, although occurs in other vegetation communities too.	Absent Site is located in an area of residential and commercial development, no tortoise sign or burrows capable of supporting species on site or surrounding area.
Red Diamond Rattlesnake (*Crotalus ruber*)	F: ND C: SSC State rank: S3	Inhabits arid scrub, coastal chaparral, oak and pine woodlands, rocky grasslands, desert slopes of mountains onto adjacent rocky flats.	Absent Despite the map showing a potential CNDDB record north of the site, the NE extent of this species range is understood to be Pioneertown and Morongo Valley, habitat on project site too disturbed to be likely to support this species

Table 4. Sensitive Birds: Twentynine Palms Channel Trail Project.

Species	Protective Status (F=Federal, C=California)	Habitat	Occurrence Probability
Burrowing Owl (*Athene cunicularia*)	F: ND C: CSC State rank: S2	Inhabits a variety of open habitats (including edges of ag. fields), often occupies unused ground squirrel burrows	Absent (Focused burrow search survey was negative at the time of the survey). However, potentially suitable habitat is present on site; and future occupation is possible (albeit low probability).
Prairie Falcon (*Falco mexicanus*)	F: ND C: WL State rank: S4	Inhabits a variety of open terrain, nests on cliffs	Low (foraging) Absent (nesting) (Foraging only, no nesting habitat present)
Loggerhead Shrike (*Lanius ludovicianus*)	F: ND C: SSC State rank: S4	A variety of open habitats throughout southern California, fairly dense shrubs and/or brush used for nesting	Moderate (foraging) Absent (nesting)

Table 5. Sensitive Mammals: Twentynine Palms Channel Trail Project.

Species	Protective Status (F=Federal, C=California)	Habitat	Occurrence Probability
Pallid San Diego Pocket Mouse (*Chaetodipus fallax pallidus*)	F: ND C: SSC State rank: S3S4	Often in desert border areas in desert wash, scrubs, pinyon-juniper, canyons	Absent (on project alignment) Low (in adjacent channel) (No suitable habitat on project alignment for this species. Low potential in adjacent channel)
Western Yellow Bat (*Lasiurus xanthinus)*	F: ND C: SSC State rank: S3	This uncommon bat is known from Lost Angeles and San Bernardino Counties south to the Mexican border. Usually below 600 m in elevation in valley foothill and desert riparian areas, desert wash and palm oasis habitats. Strongly associated with palm trees in CA for roosting.	Absent (on project alignment) Low (BSA) No palm trees on project alignment, low potential for species to utilize adjacent desert riparian elements in adjacent channel.
Spotted Bat (*Euderma maculatum*)	F: ND C: SSC State rank: S3	Known from a small number of localities in our state. Mostly in foothills, mountains, and desert regions from below sea level to above 3,000 m (New Mexico). Prefers to roost in rock crevices, occasionally in caves and buildings, cliffs are best roosting habitat.	Absent (on project alignment) Low (foraging over BSA) The proposed trail alignment does not have any roosting habitat for this bat, there is a low probability it could forage over the BSA.
Pallid Bat (*Antrozous pallidus*)	F: ND C: SSC State rank: S3	A locally common species of a wide variety of low elevation habitats in California; including grasslands, shrublands, woodlands, and forests from sea level up to coniferous montane forests. Most common in dry, open areas with rocky areas for roosting. Roost areas must be able to protect individuals from high temps.	Absent (on project alignment) Moderate (foraging over BSA) The proposed trail alignment does not have any roosting habitat for this bat, there is a low probability it could forage over the BSA.
Desert Bighorn Sheep (*Ovis canadensis* ssp. *nelson*)	F: ND C: FP State rank: S3	Desert bighorn sheep inhabit rocky slopes and canyons, washes and alluvial fans; often with rugged and open terrain with grasses and forbs for grazing.	Absent No habitat for this species in BSA. Project site is not located in close proximity to rocky hillsides where this species could wander in from in search of water or forage.

Species	Protective Status (F=Federal, C=California)	Habitat	Occurrence Probability
American Badger (*Taxidea taxus*)	F: ND C: SSC State rank: S3	This is an uncommon mammal throughout the state. Badgers are most abundant in drier open areas of shrub, forest, and grassland areas. They can be somewhat tolerant of human activities but tend to not occur in areas of high use.	Absent No habitat for this species in BSA. Project site is located close to residential and commercial development, areas that are not likely to support this species.

Note: Four bat species of concern are noted in the CNDDB, but no suitable roosting or maternity sites occur at or near the Project site. One or more of these species may forage in the area

Definitions of status designations and occurrence probabilities.

Definitions of occurrence probability:

Occurs: Observed on the site by Wood personnel or recorded on-site by other qualified biologists.

High: 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.

Moderate: 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.

Low: Site is within the known range of the species but habitat on the site is rarely used by the species.

Absent: A focused study failed to detect the species, or, no suitable habitat is present.

Federal designations: (federal Endangered Species Act, US Fish and Wildlife Service):

END: Federally listed, Endangered.
THR: Federally listed, Threatened.
BCC: Birds of Conservation Concern
C: Candidate for Federal listing
ND: Not designated.

State designations: (California Endangered Species Act, California Dept. of Fish and Game)

END: State listed, Endangered.
THR: State listed, Threatened.
RARE: State listed as Rare (Listed "Rare" animals have been re-designated as Threatened, but Rare plants have retained the Rare designation.)
CSC: California Special Concern Species.
ND: Not designated.

California Native Plant Society (CNPS) designations: (Non-regulatory, compilation by a non-profit organization which tracks rare plants)

CNPS California Rare Plant Ranks (CRPR) Note: According to the CNPS (http://www.cnps.org/programs/Rare_Plant/inventory/names.htm), ALL plants on Lists 1A, 1B, 2A, and 2B meet definitions for state listing as threatened or endangered under Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code. Certain plants on Lists 3 and 4 do as well.
The CDFW (http://www.dfg.ca.gov/hcpb/species/t_e_spp/nat_plnt_consv.shtml) states that plants on Lists 1A, 1B, 2A, and 2B of the CNPS Inventory consist of plants that may qualify for listing, and recommends they be addressed in CEQA projects (CEQA Guidelines Section 15380). However, a plant need not be in the Inventory to be considered a rare, threatened, or endangered species under CEQA. In addition, CDFW recommends, and local governments may require, protection of plants which are regionally significant, such as locally rare species, disjunct populations of more common plants, or plants on the CNPS Lists 3 and 4.

List 1A: Plants presumed extinct in California.
List 1B: Plants rare and endangered in California and throughout their range.
List 2A: Plants presumed extirpated in California, but more common elsewhere.
List 2B: Plants rare, threatened, or endangered in California, but more common elsewhere.
List 3: Plants for which more information is needed.

List 4: Plants of limited distribution; a "watch list."
CA Endemic: Taxa that occur only in California

CNPS Threat Code:

.1 - Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 – Fairly endangered in California (20-80% occurrences threatened)

.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)

Note: All List 1A (presumed extinct in California) and some List 3 (need more information- a review list) plants lacking any threat information receive no threat code extension. Also, these Threat Code guidelines represent a starting point in the assessment of threat level. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are also considered in setting the Threat Code.

CDFW CNDDB rankings: Animals

S1 = Extremely endangered: <6 viable occurrences or <1,000 individuals, or < 2,000 acres of occupied habitat
S2 = Endangered: about 6-20 viable occurrences or 1,000 - 3,000 individuals, or 2,000 to 10,000 acres of occupied habitat
S3 = Restricted range, rare: about 21-100 viable occurrences, or 3,000 – 10,000 individuals, or 10,000 – 50,000 acres of occupied habitat
S4 = Apparently secure; some factors exist to cause some concern such as narrow habitat or continuing threats
S5 = Demonstrably secure; commonly found throughout its historic range
SH = all sites are historical, this species may be extinct, further field work is needed

CDFW CNDDB rankings: Plants and Vegetation Communities

S1 = Less than 6 viable occurrences OR less than 1,000 individuals OR less than 2,000 acres
S1.1 = very threatened
S1.2 = threatened
S1.3 = no current threats known
S2 = 6-20 viable occurrences OR 1,000-3,000 individuals OR 2,000-10,000 acres
S2.1 = very threatened
S2.2 = threatened
S2.3 = no current threats known
S3 = 21-80 viable occurrences or 3,000-10,000 individuals OR 10,000-50,000 acres
S3.1 = very threatened
S3.2 = threatened
S3.3 = no current threats known
S4 = Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern; i.e. there is some threat, or somewhat narrow habitat.
S5 = Demonstrably secure to ineradicable in California.

Table 1 lists ten (10) sensitive plants known from the general project vicinity, and none of these species would be expected to occur on the project site due to lack of habitat, incorrect elevational range, and unsuitable microhabitat characteristics. These plants are listed in Table 1, and the reasons for their occurrence potential (or lack thereof) is described for each species in this table.

Desert fan palm oasis woodland is a distinctive and easily identifiable sensitive habitat. The project alignment and BSA are in an area of residential and commercial development and would not be expected to support this vegetation community. Note that cultivated (planted) stands of California fan palm are not considered to belong to this vegetation community. This sensitive habitat is not present in the project BSA.

Table 3 lists two sensitive reptile species that are known to occur in the region: red diamond rattlesnake (*Crotalus ruber*) and desert tortoise (*Gopherus agassizii*). A search of the current CNDDB online database revealed that there is an apparent 1945 record for red diamond rattlesnake from what is now the MCAGCC Visitor's Center parking lot and Adobe Road. This record may have been recorded incorrectly or could represent an animal moved by human means.

Twentynine Palms is not located in the currently accepted range of this species, as red diamond rattlesnakes are supposed to reach their northeastern limit in the Morongo Valley and Pioneertown area. As stated previously, the project alignment and BSA is located in a largely developed residential and commercial area. A careful examination of the both the proposed trail alignment and adjacent undeveloped areas (including four small vacant lots that border the alignment on the south side) did not reveal any desert tortoise sign or any burrows capable of supporting desert tortoise. It is Wood's opinion that these species are absent from the project area.

None of the three sensitive bird species listed in Table 4 were detected on the site. There is a low probability that prairie falcons (*Falco mexicanus*) could forage over the greater project BSA, but this species is more commonly encountered in less developed, more open habitat. No nesting habitat for this species exists in the BSA. Similarly, there is a moderate potential for loggerhead shrikes (*Lanius ludovicianus*) to forage in the project BSA, but nesting is not expected in the project area due to its proximity to neighborhoods and commercial development. Loggerhead shrikes are not listed as threatened or endangered. They are considered a CDFW California Special Concern Species (SSC). Prairie falcons are considered a "Watch list" (WL) species by the CDFW. The open nature of the project site, and specifically, habitat found along the manmade drainage channel provides (low) potential habitat for burrowing owls *(Athene cunicularia)*. In California, burrowing owls often occur in association with colonies of the California ground squirrel (*Otospermophilus beecheyi*) or other ground squirrel species, where they often make use of the squirrels' burrows. In southern California, burrowing owls are not only found in undisturbed natural areas, but also fallow agricultural fields, margins of active agricultural areas, berms and levees of flood control and creek channels, livestock farms, airports, golf courses, and vacant lots. The burrowing owl has been designated a Species of Special Concern (CSC) by CDFW, and is protected by the federal MBTA and the California Fish and Game Code. See Section 3.4.1 for the results of focused burrowing owl burrow survey.

No sensitive mammal species were observed on the project site or BSA during the surveys. None of the six mammals listed in Table 5 are expected to occur on the project alignment, apart from a low potential for the various sensitive bat species discussed in the Table to occasionally forage over the project BSA. As stated previously, the project alignment and BSA is located in a largely developed residential and commercial area; and does not have habitat to support these species. The proposed trail alignment is a cleared, compacted dirt access road; and does not provide habitat for any of the species treated in Table 5.

3.4.1 Results of Burrowing Owl Burrow Search Surveys

No burrowing owls were observed during the general biological survey or the focused survey for potential burrowing owl burrows. No burrowing owl sign (feathers, pellets, or whitewash) or burrows or burrow surrogates were found during the burrow search survey that could support burrowing owls. Based on the lack of burrows and of burrowing owl sign, Wood has determined that focused burrowing owl surveys for this project are not necessary at this time.

4.0 DISCUSSION

4.1 Potential Impacts of the Proposed Project

4.1.1 Potential Impacts to Federally Listed Endangered or Threatened Species or Listed Critical Habitat

Based on the results of this biological resource assessment, Wood has determined that no adverse effects will occur to federally listed endangered or threatened species, proposed endangered or threatened species, federally-designated critical habitats, or to state-designated listed or sensitive species. As a precautionary measure, Wood advises that prior to any ground-disturbing activities or any irretrievable commitment of resources, that appropriate state and federal resource agencies be encouraged to review this document for appropriate comments.

4.1.2 Potential Impacts to Nesting Birds

All native birds are protected while nesting under the federal MBTA. Grading and other project activities have the potential to impact nesting birds, including in those areas containing open ground.

4.2 Suggested Mitigation Measures

To comply with the MBTA, any vegetation removal, or grading or other site disturbance occurring between February 1 to August 31 and having the potential to impact nesting birds shall require a qualified biologist to conduct at least one nesting bird survey, and more if deemed necessary by the consulting biologist, ending no less than 3 days prior to grading. All vegetation and suitable nesting habitat (including open ground) on the project site, whether or not it will be removed or disturbed, shall be surveyed for nesting birds. If active nests of any native birds are found on the site, they will be avoided until after the young have fledged. If there are no nests present, ground disturbance activities can move forward. Conducting construction activities outside the breeding season (September 1 through January 31) can avoid having to implement these measures, although even non-occupied raptor nests are protected under *Section 3505.5 of the State Fish and Game Code* and permission must be granted by CDFW to remove them.

Because the project site does contain suitable potential habitat for burrowing owls, CDFW recommends that there be two take avoidance burrowing owl surveys for the project. These “preconstruction” surveys ensure that no owls have occupied the site subsequent to this report. The CDFW recommends that the first survey take place between 14 and 30 days prior to ground disturbance, and the second survey within 24 hours of any ground-breaking activities.

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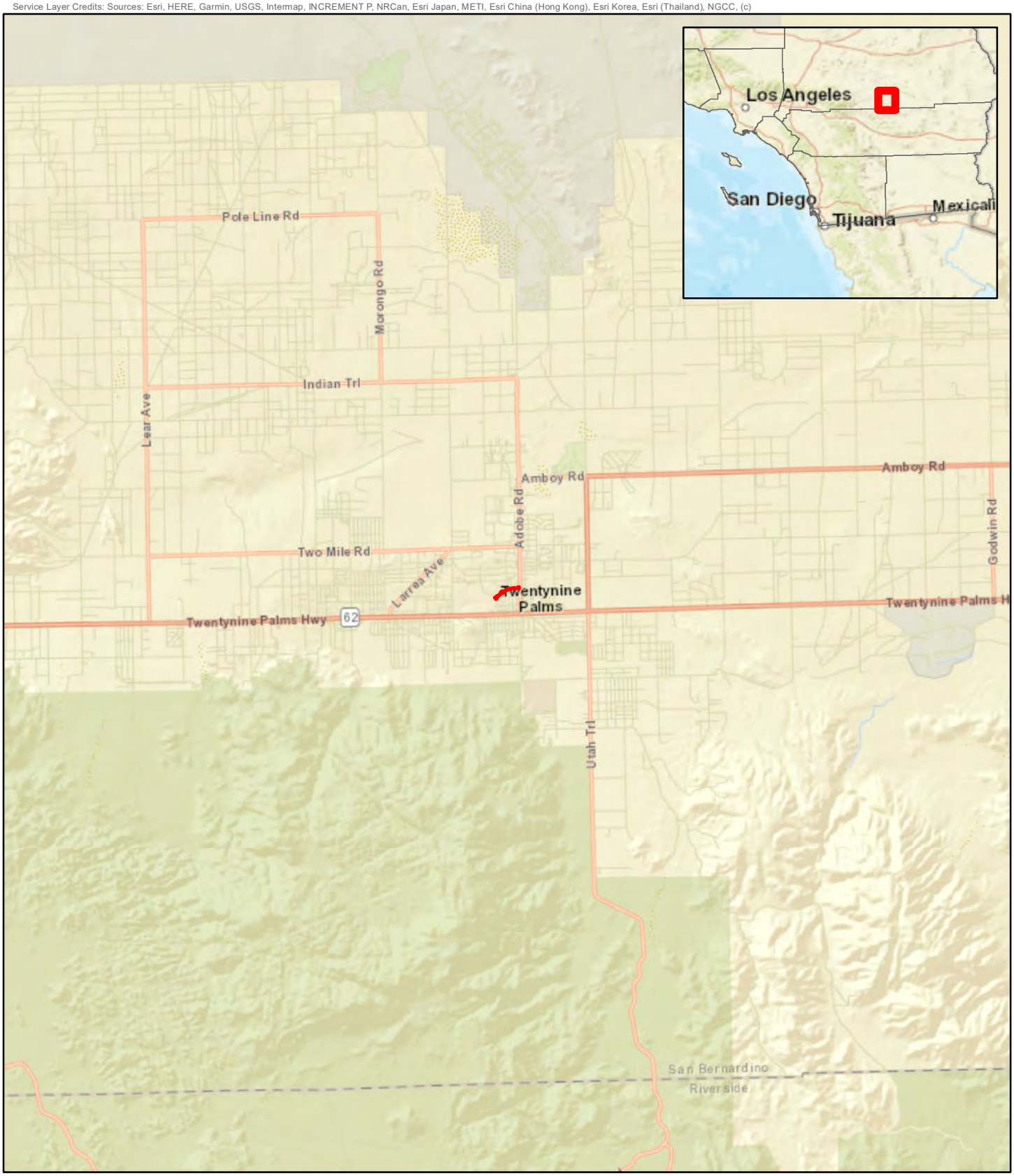
Appendix A

Figures and Maps



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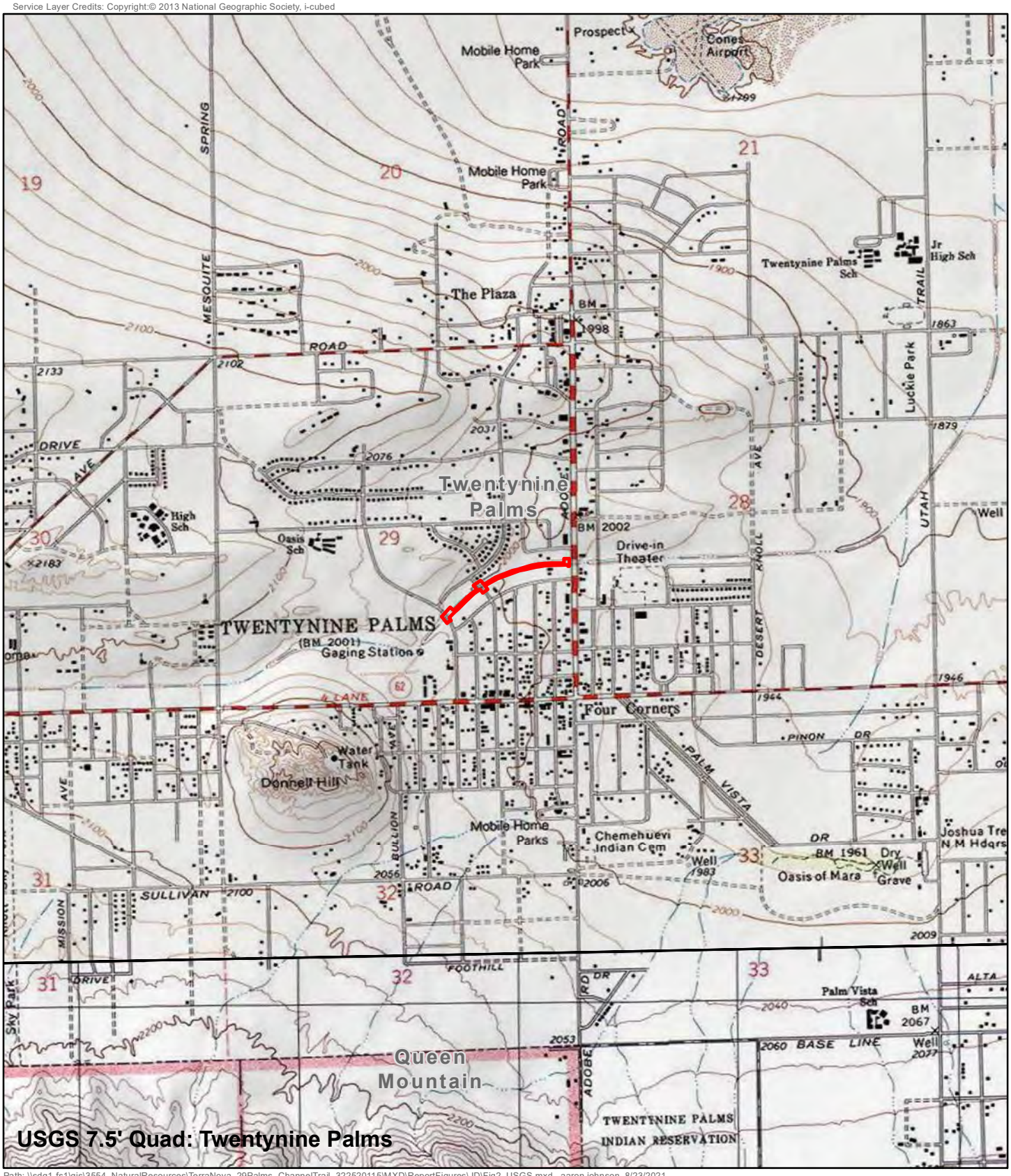
1 inch = 2 miles
0 1 2 Miles

wood.

Project Boundary

FIGURE 1

Regional Map
Channel Trail Project
Twentynine Palms, CA



USGS 7.5' Quad: Twentynine Palms

Path: \\sdg1-fs1\gis\3554_NaturalResources\TerraNova_29Palms_ChannelTrail_322520115\MXD\ReportFigures\JD\Fig2_USGS.mxd, aaron.johnson 8/23/2021

1 inch = 0 miles

0 1,000 2,000 Feet

wood.

Project Boundary

FIGURE 2

USGS Topo
Channel Trail Project
Twentynine Palms, CA

Path: \\sdg1-fs1\gis\3554_NaturalResources\TwentyninePalms_ChannelTrail_322520115\MXD\ReportFigures\Fig2_Vicinity.mxd, aaron.johnson 8/10/2021

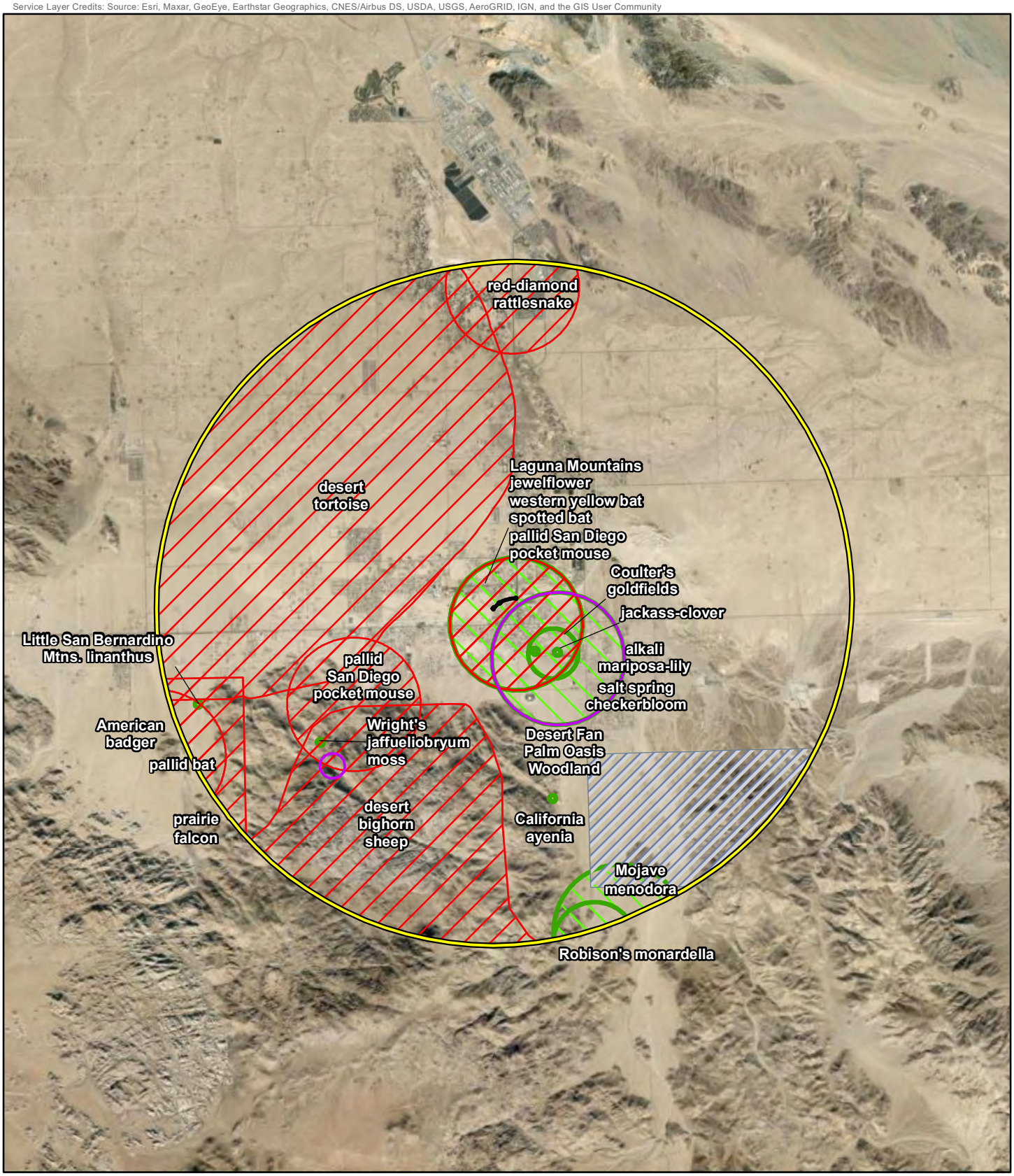
1 inch = 300 feet
0 150 300 Feet

wood.

Project Boundary

FIGURE 3

Project Vicinity
Channel Trail Project
Twentynine Palms, CA



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Project Boundary

Desert Tortoise Critical Habitat (USFWS)

CNDDB Occurrences (CDFW)

Plants

Wildlife

Sensitive Vegetation Communities

1 inch = 2 miles

0 1 2 Miles

wood.

FIGURE 4

CNDDB and
USFWS Critical Habitat
Channel Trail Project
Twentynine Palms, CA

Appendix B

Photographs of the Project Site

Twentynine Palms Channel Trail Project, San Bernardino County, California

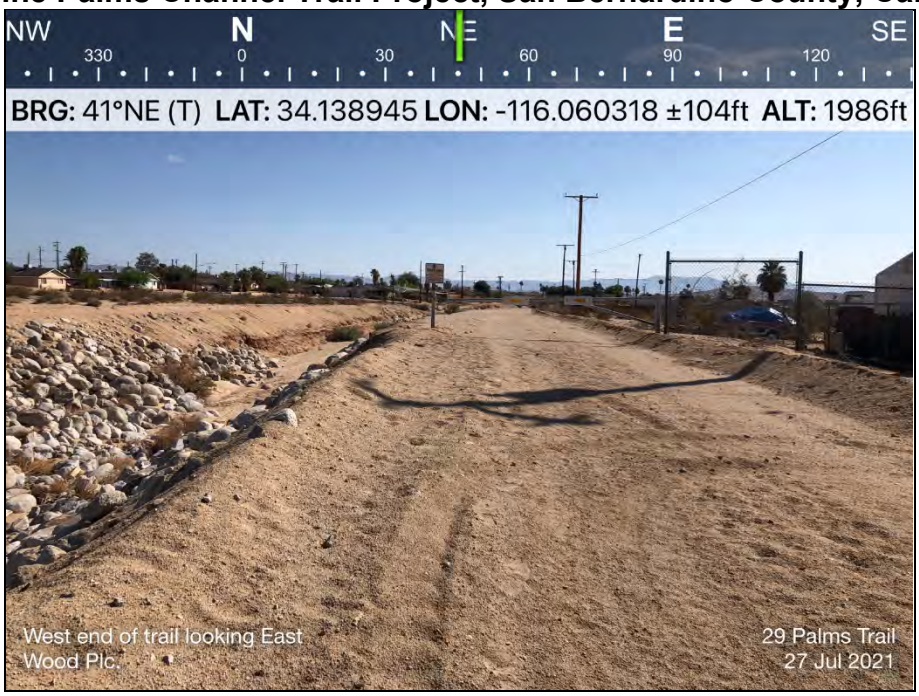

Photo 1. West end of proposed trail route at Split Rock Road facing east.

Photo 2. Photo showing the western-most vacant lot bordering the southwest edge of proposed trail. Surrounded by residential development.

Photo 3. Photo showing the view of the proposed trail at the intersection of Tamarisk Avenue facing east.

Photo 4. Photo showing the vegetation present in the channel that borders the proposed trail route, east of Tamarisk Avenue.

Photo 5. Vehicle tracks across one of the vacant lots bordering the trail route (example of human-caused disturbance).

Photo 6. Eastern portion of trail route with Adobe Boulevard in the background.

Photo 7. Photo showing the eastern end of the proposed trail route at its terminus at Adobe Boulevard. There were homeless people living under the bridge at the time of this visit.

Photo 8. East end of the proposed trail at Adobe Boulevard, view facing west. Also showing gate barring vehicle access to the site.

Photo 9. Photo showing two of the four corrugated steel culvert outlets that drain urban runoff into the channel.

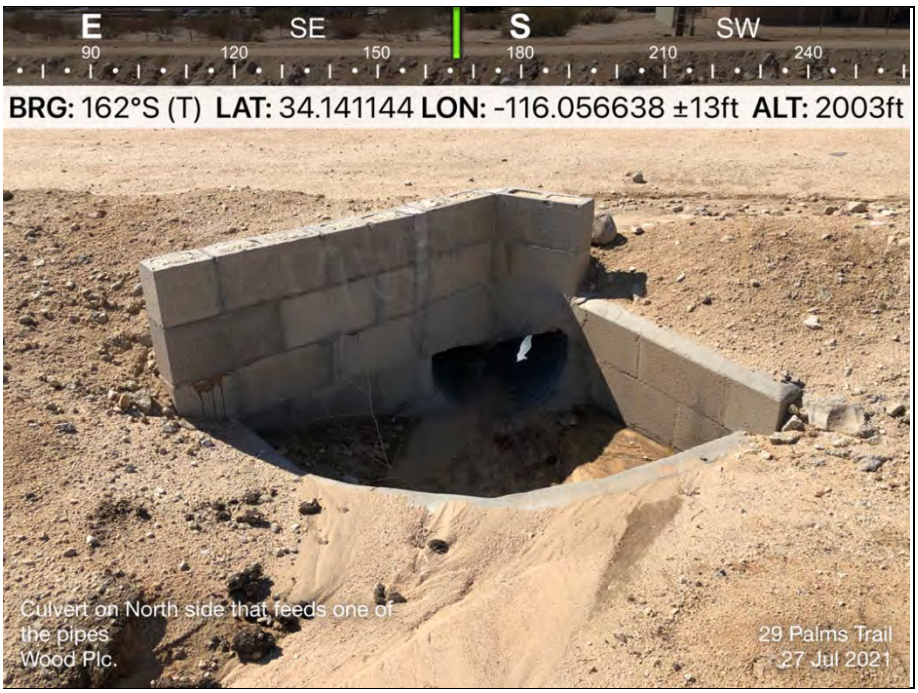

Photo 10. Culvert intake for one of the pipes shown in Photo 9.

Appendix C

PLANTS AND VERTEBRATE SPECIES OBSERVED ON-SITE

Vascular Plants

EUDICOT FLOWERING PLANTS

Asteraceae	**Sunflower Family**
Ambrosia acanthicarpa	annual bur-sage
Ambrosia dumosa	white bur-sage
Ambrosia salsola	cheesebush
Bignoniaceae	**Trumpet-creeper Family**
Chilopsis linearis ssp. *arcuata*	desert willow
Boraginaceae	**Borage Family**
Cryptantha sp. (dead)	unidentified Cryptantha
Cactaceae	**Cactus Family**
Cylindropuntia echinocarpa	golden cholla
Chenopodiaceae	**Goosefoot Family**
Atriplex canescens	fourwing saltbush
**Salsola tragus*	Russian thistle
Cleomaceae	**Spiderflower Family**
Peritoma arborea	bladderpod
Euphorbiaceae	**Spurge Family**
Euphorbia polycarpa	smallseed sandmat
Fabaceae	**Pea Family**
**Parkinsonia aculeata*	Mexican palo verde
Psorothamnus spinosus	smoke tree
Senegalia greggii	catclaw
Krameriaceae	**Rhatany Family**
Krameria bicolor	white rhatany
Loasaceae	**Loasa Family**
Petalonyx thurberi	Thurber’s sandpaper plant
Solanaceae	**Nightshade Family**
Datura wrightii	sacred datura

MONOCOT FLOWERING PLANTS

Poaceae	**Grass Family**
Hilaria rigida	big galleta
**Schismus* sp.	Mediterranean grass

* - denotes a non-native species

Vertebrate Animals

REPTILES	**REPTILIA**
Iguanids	**Iguanidae**
northern desert iguana	*Dipsosaurus dorsalis dorsalis*
BIRDS	**AVES**
Pigeons and Doves	**Columbidae**
Eurasian collared-dove*	*Streptopelia decaocto*
mourning dove	*Zenaida macroura*
Jays, Magpies, and Crows	**Corvidae**
common raven	*Corvus corax*
Verdins	**Remizidae**
verdin	*Auriparus flaviceps*
Wrens	**Troglodytidae**
cactus wren	*Campylorhynchus brunneicapillus*
Fringilline and Cardueline Finches	**Fringillidae**
house finch	*Haemorhous mexicanus*
MAMMALS	**MAMMALIA**
Hares and Rabbits	**Leporidae**
desert cottontail	*Sylvilagus audubonii*
Squirrels, Chipmunks and Marmots	**Sciuridae**
round-tailed ground squirrel	*Xerospermophilus tereticaudus*

* - denotes a non-native species

Appendix C

Delineation of Jurisdictional Waters

DELINEATION OF JURISDICTIONAL WATERS
TWENTY-NINE PALMS CHANNEL TRAIL PROJECT

TWENTY-NINE PALMS
IN SAN BERNARDINO COUNTY, CALIFORNIA

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August 2021

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ACRONYMS AND ABBREVIATIONS

AMSL	above mean sea level
BSA	Biological Survey Area
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
NL	not listed
NOAA	National Oceanic and Atmospheric Administration
NWI	National Wetlands Inventory
NWP	Nationwide Permit
OBL	obligate
OHWM	ordinary high-water mark
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

At the request of Terra Nova Planning and Research (Terra Nova), Wood Environment & Infrastructure Solutions, Inc. (Wood) conducted a jurisdictional delineation for a proposed multi-use path along the top of bank on the south side of the existing flood control channel between Split Rock Avenue and Adobe Road, 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 project is generally located north of State Route 62 (SR-62), south of Two Mile Road, east of Lear Avenue and west of Adobe Road (Figure 1 - Appendix A). The project is located within the southeast quarter of Section 29, Township 1 North, Range 9 East, as shown on the United States Geological Survey (USGS) 7.5 minute *Twentynine Palms*, California quadrangle (Figure 2 – Appendix A). Specifically, the project is bounded on the north by Bagley Avenue and Civic Center Drive, on the south by Buena Vista Drive, on the east by Adobe Road, and on the west by Split Rock Avenue. An existing manmade drainage channel runs along the entire immediate northern edge of the proposed trail. The trail appears to be located entirely within an existing dirt access road that borders the southern edge of the drainage channel. Elevations within the project site range from approximately 2,019 feet above mean sea level (AMSL) at Split Rock Avenue to approximately 1,989 feet AMSL at Adobe Road. The average rainfall for the area (Twentynine Palms) is 6.3 inches per year (distributed more or less across 21 days of precipitation), with an average of 285 sunny days per year (Best Places Climate 2021).

2.0 REGULATORY FRAMEWORK

2.1 U.S. Army Corps of Engineers

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

2.1.1 Waters of the U.S.

CWA regulations (33 CFR 328.3(a)) previously defined WOTUS as follows:

- 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;
- All interstate waters including interstate wetlands;
- 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 travellers 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;
- All impoundments of waters otherwise defined as WOTUS under the definition;
- Tributaries of WOTUS;
- The territorial seas;
- Wetlands adjacent to WOTUS (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 WOTUS involves further assessment in accordance with the regulations, case law, and clarifying guidance.

2.1.2 Wetlands and Other Special Aquatic Sites

Wetlands are defined at 33 CFR 328.3(c) as " [a]reas 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." 33 C.F.R. § 328.3 (c) (16) (2020)

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.

2.1.3 Supreme Court Decisions

1.1.1.1 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. U.S. Army Corps of Engineers (2001) 531 U.S. 159, 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. The Court held that: "nonnavigable, isolated, intrastate waters, which . . . did not actually abu[t] on a navigable waterway, were not included as "waters of the United States." 531 U.S., at 167, 171; Rapanos v. U.S. (2006) 547 U.S. 715, 726.

1.1.1.2 Rapanos/Carabell

In the next Supreme Court case Rapanos v. U.S. (2006) 547 U.S. 715 the Court clarified the extent of USACE jurisdiction under the CWA by interpreting the phrase "the Waters of The United States". The Court held that: " term "navigable waters," under CWA, includes only relatively permanent, standing or flowing bodies of water, not intermittent or ephemeral flows of water, and only those wetlands with a continuous surface connection to bodies that are waters of the United States in their own right are adjacent to such waters and covered by the CWA." Rapanos v. U.S. (2006) 547 U.S. 715. The Court interpreted that: "[T]he phrase "the waters of the United States" [which defines term "navigable waters" in the Clean Water Act], includes only those relatively permanent, standing or continuously flowing bodies of water "forming geographic features" that are described . . . as "streams, oceans, rivers, and lakes." [T]he phrase does not include channels through which water flows intermittently or

ephemerally, or channels that periodically provide drainage for rainfall." Id. at 739. "[Only] those wetlands with a continuous surface connection to bodies that are "waters of the United States" in their own right, so that there is no clear demarcation between "waters" and wetlands, are "adjacent to" such waters and covered by the Act." Id. at 742. [E]stablishing that wetlands are covered by the Clean Water Act requires two findings: first, that the adjacent channel contains a "water" of the United States, [that is,] a relatively permanent body of water connected to traditional interstate navigable waters, and second, that the wetland has a continuous surface connection with that water, making it difficult to determine where the "water" ends and the "wetland" begins. Id.

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.

2.1.4 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:

Jurisdictional by Rule: TNWs, Interstate Waters, Territorial Seas, and Impoundments of Jurisdictional Waters.

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.

Connected Waters: Adjacent or neighbouring waters that have a significant nexus to waters listed in 1) above.

Other Waters: waters that, individually or as a group, significantly affect the chemical, physical, or biological integrity of waters listed in 1) above.

2.1.5 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: Definition of "Waters of the United States". This final rule was developed consistently with decision in Rapanos v. U.S. (2006) 547 U.S. 715 and superseded all previous rules. 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, and was codified under 33 C.F.R. § 328.3 Definitions (2020), effective June 22, 2020.
In this final rule, the definition of WOTUS for the purposes of CWA encompasses:

- 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 WOTUS all waters or features not mentioned above, specifically clarifying that WOTUS 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.

2.2 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 WOTUS 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 WOTUS 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.

2.3 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.

CDFW follows definition of a stream under California Code of Regulations as: "A stream is a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation." Cal. Code Regs., tit. 14, § 1.72

3.0 METHODS

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

- Aerial photographs 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 (if available); and
- USFWS National Wetlands Inventory map to identify areas mapped as wetland features (Figure 3 - Appendix A).

The project site was surveyed on foot from 0849 to 1015 on 27 July 2021, by Wood biologist senior biologist Nathan T. Moorhatch. Weather conditions during the survey consisted of clear skies (0% clouds) with temperatures ranging from 85°F to 92°F (degrees Fahrenheit), and light winds between 0 and 2 mph. The survey consisted of checking all areas where potential jurisdictional areas were observed within the survey area. The entire project site was walked to determine which areas meet the minimum criteria to be considered under the jurisdiction of USACE, RWQCB, and CDFW. Visual observations of vegetation types and changes in hydrology and soil texture, and culvert locations were used to locate areas for evaluation.

USACE regulated WUS, including wetlands, and RWQCB 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 in order 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.

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. WSC/CDFW jurisdictional areas were determined by the bankfull channel edge and RWQCB jurisdictional areas were determined by the edge of the OHWM. In some areas the eroded banks were vertical, so these areas shared the same jurisdictional boundary lines.

The drainage typical of dryland fluvial systems with unvegetated, sand bottom channels, or engineered concrete channels. Therefore, no soil pits were dug, and no wetland data forms were used to collect information.

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. Concrete channels were mapped using GIS and aerial photographs because of safety and accessibility limitations. 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.

4.0 ENVIRONMENTAL SETTING

4.1 Existing Conditions

The survey area contains a trapezoidal earthen channel with a dirt road along the southern bank and three paved streets cross the channel. There are two Arizona Crossings, and a three-section box culvert at Adobe Street. The survey area contains mostly bare soil with some scattered vegetation within the channel.

4.2 Hydrology

The average rainfall for the area is 6.3 inches per year (distributed more or less across 21 days of precipitation), with an average of 285 sunny days per year (Best Places Climate 2021). The delineation survey was conducted following a year of below average rainfall.

The Project Area contains one (1) jurisdictional drainage, which is a soft bottom engineered channel. The drainage generally flow north to south and are part of the San Bernardino County, flood control systems.

The on-site drainage is within the Fortynine Palms Canyon watershed. (1810010021). The drainage flows to the east and at times of high rain, would flow into a dry lakebed west of Ironage Road and north of SR 62. The drainage within the adjacent feature is ephemeral and only conveys flows after rain events.

4.3 Vegetation

Eighteen plant species were identified. Of the plant species detected on the site during the survey, 17% were non-native species.

The project site occurs in an area that has experienced significant development and disturbance during the past. In addition to the project footprint, the area surrounding the proposed trail alignment has been moderately to greatly altered from its natural state and is located in close proximity to areas of both residential and commercial development. The proposed trail is located within an existing dirt access road that has been completely cleared and compacted. Most of the plant species observed were associated with the drainage channel and included but were not limited to the following: desert willow (*Chilopsis linearis* ssp. *arcuata*), smoke tree (*Psorothamnus spinosus*), catclaw (*Senegalia greggii*), bladderpod (*Peritoma arborea*), Mexican palo verde (*Parkinsonia aculeata*), and Thurber's sandpaper plant (*Petalonyx thurberi*). None of the plants observed are considered hydric and do not have wetland indicator status. Many of the plants are generally associated with dry desert washes but do not indicate the presence of wetland conditions under the as defined by USACE and the EPA.

4.4 Soils

The USDA online Web Soil Survey (Online website 2021) was consulted to determine the soil types mapped as occurring within the Project area. Unfortunately, soil data is not present for the project alignment and greater project vicinity.

The soils observed within the survey area consist of coarse sandy soils. There were no signs of redox or any other wetland soil indicators.

4.3 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, 2021) was accessed on-line to review mapped wetlands within the project study areas.

The NWI mapper (Figure 4, Appendix A) shows the drainage within the survey area classified as Riverine (R), Intermittent (4), Streambed (SB), Intermittently Flooded (J), Excavated (x) (R4SBJx) which matches the observation in the field.

5.0 RESULTS

The Survey Area contains a total of one (1) jurisdictional drainage, which is a soft bottomed engineered channel. Some portions of the channel contain riprap, but it is not contiguous throughout the survey area. The trapezoid channel was determined to have CDFW jurisdiction to the top of the bank, and RWCQB jurisdiction at the base of the channel. The drainage is ephemeral and therefor is not currently under USACE jurisdiction.

There had been some light rain within the week prior to the survey and some evidence of storm runoff were observed. There was not enough rain for flows to travel though the whole channel. The soil within the channel is coarse sand with no signs of redox or any other wetland soil indicator.

No wetlands were observed within the survey area. The drainages within the survey area contain 5.31 acres of CDFW jurisdictional areas, and 1.94 acres of RWQCB jurisdictional areas.

The USACE, in combination with the 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.

6.0 IMPACTS TO JURISDICTIONAL AREAS

Based on current project designs, the project will impact 0.23 acres of and 406 linear feet of RWQCB jurisdictional area, and 0.72 acres and 406 linear feet of CDFW jurisdictional area. The applicant will require permits for CDFW and RWQCB.

It is recommended that no work be done in the channel while water is flowing. Equipment should not be parked in the channel overnight, and no fueling or maintenance should be done in the channel.

7.0 PERMITTING REQUIREMENTS

The proposed project requires temporary and permanent impacts to jurisdictional drainages and therefore, authorizations from the RWQCB and CDFW are required as described below.

U.S. Army Corps of Engineers

The drainage within the survey area is ephemeral. As of June 22, 2020, under the new 2020 USACE ruling, ephemeral drainages would not be considered WUS. USACE would likely not assert jurisdiction over the onsite drainage. If the USACE did assert jurisdiction over the on-site drainages, or if the applicant decided to use a preliminary determination of jurisdictional status, and permit as jurisdictional status, then a 404 permit may be required as described below.

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. The onsite drainage is currently not USACE jurisdictional due to the drainage being ephemeral. There is a potential for the 2020 Navigable Waters Rule update to be changed or overturned in the future. Final jurisdictional determination will be determined by USACE.

Regional Water Quality Control Board

The project areas occur in the Colorado River RWQCB (Region 7). 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.

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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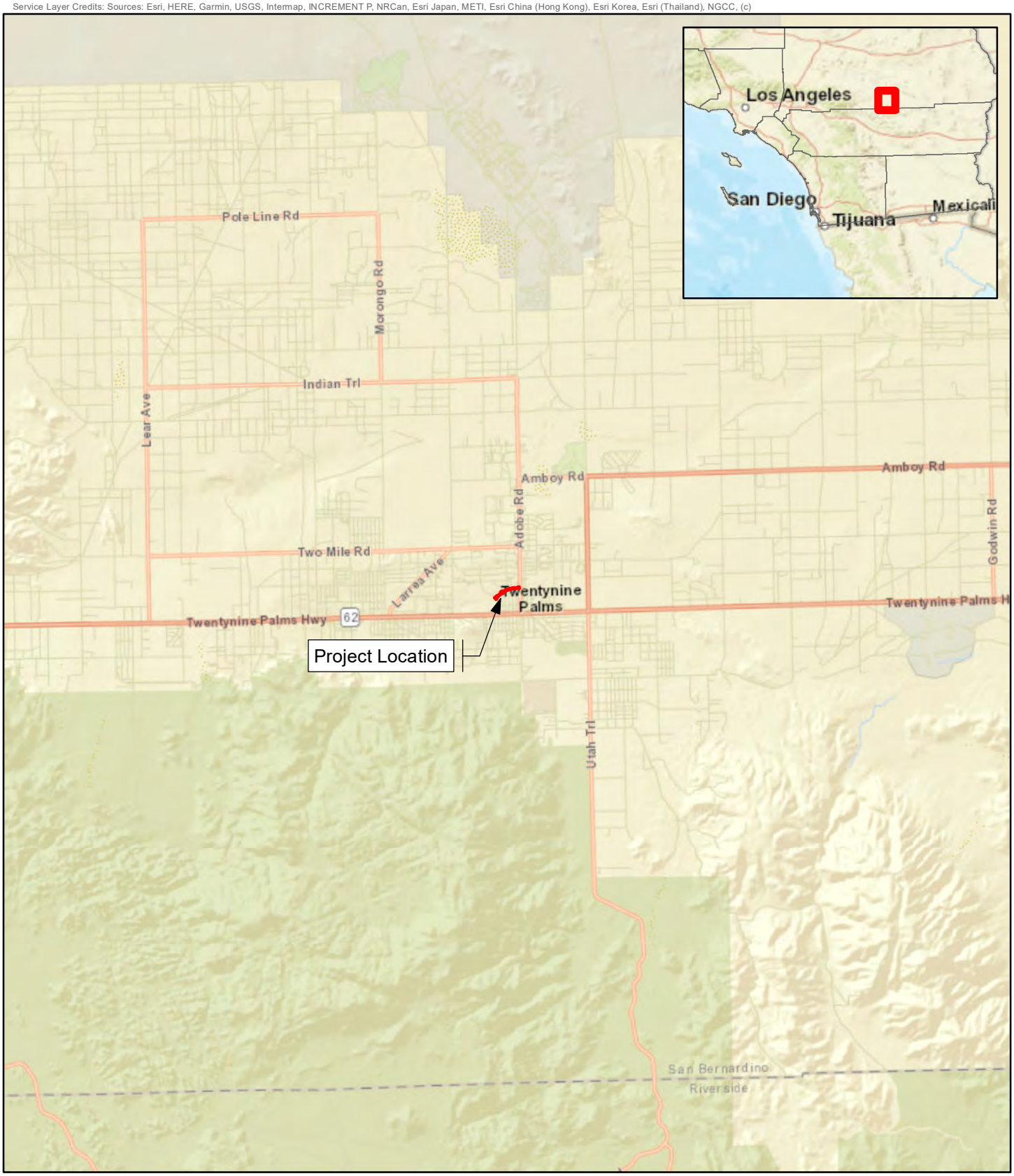
APENDIX A

JURISDICTIONAL MAPS



Path: \\sdg1-fs1\gis\3554_NaturalResources\TerraNova_29Palms_ChannelTrail_322520115\MXD\ReportFigures\JD\Fig1_Regional.mxd, aaron.johnson 8/23/2021

1 inch = 2 miles

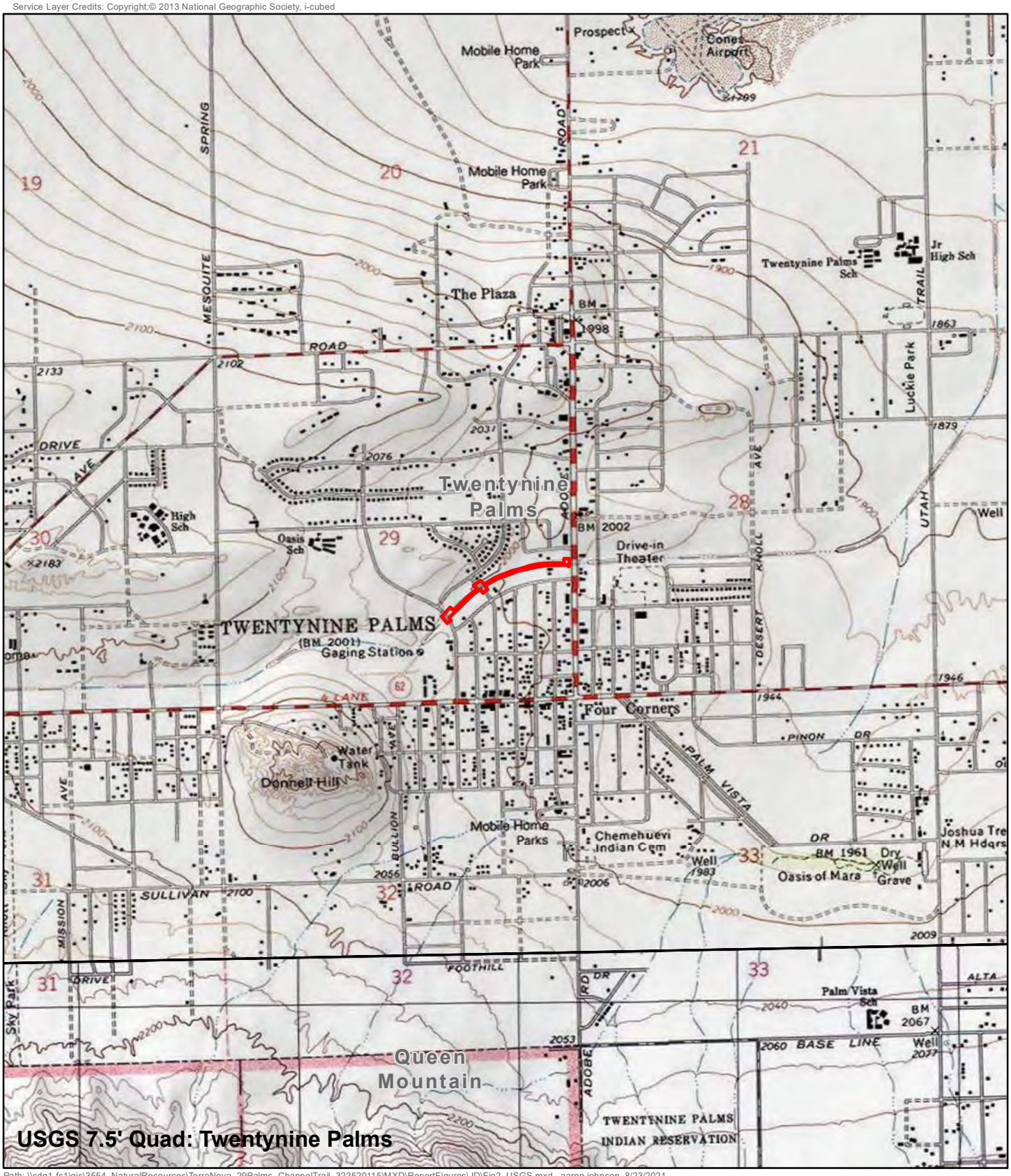
0 1 2 Miles

wood.

Project Boundary

FIGURE 1

Regional Map
Channel Trail Project
Twentynine Palms, CA



USGS 7.5' Quad: Twentynine Palms

Path: \\sdg1-fs1\gis\3554_NaturalResources\TerraNova_29Palms_ChannelTrail_322520115\MXD\ReportFigures\JD\Fig2_USGS.mxd, aaron.johnson 8/23/2021

1 inch = 0 miles

0 1,000 2,000 Feet

wood.

Project Boundary

FIGURE 2

USGS Topo
Channel Trail Project
Twentynine Palms, CA

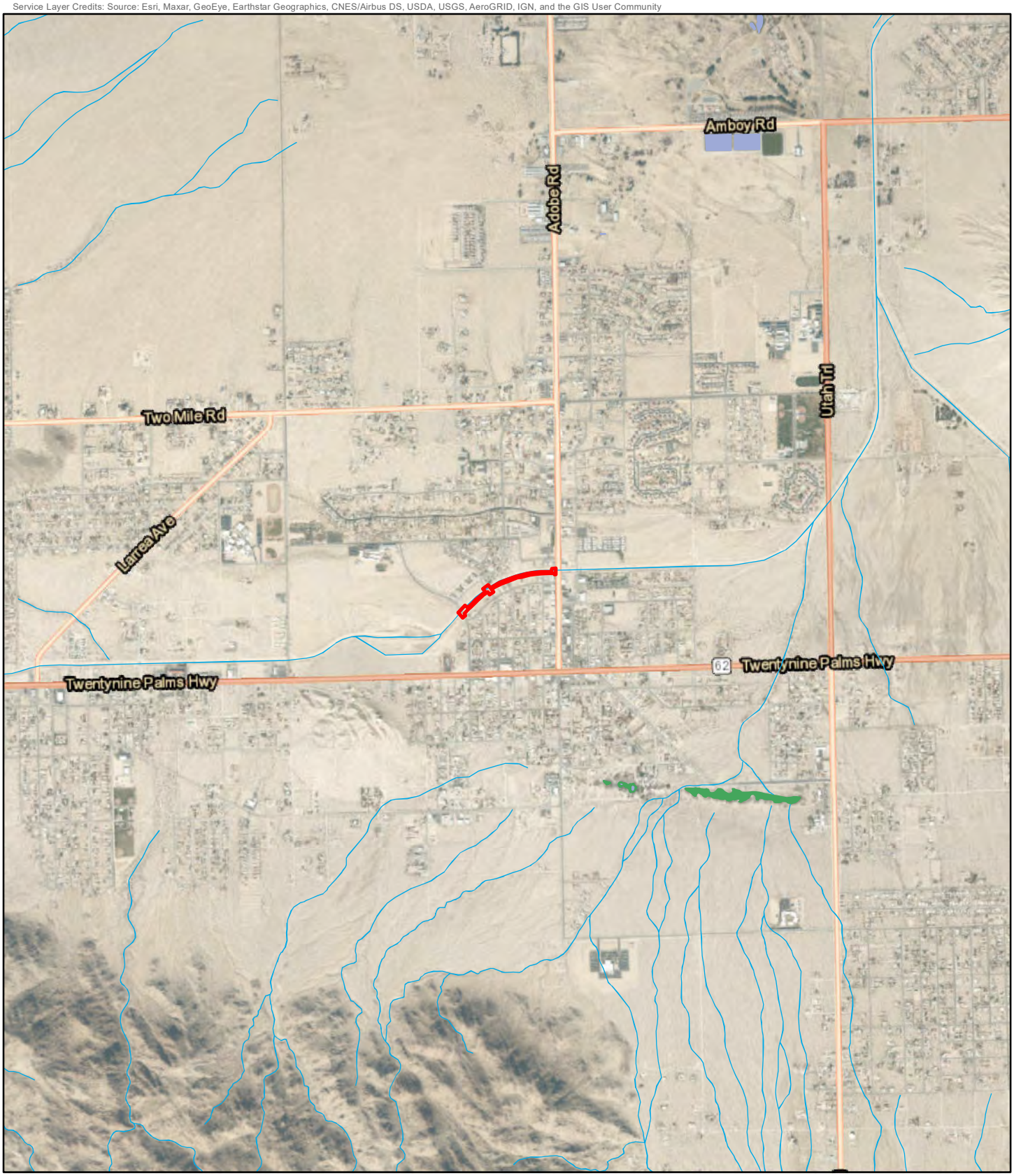
wood.

Project Boundary

NHD HUC 12 Watershed

FIGURE 3

Watersheds
Channel Trail Project
Twentynine Palms, CA



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1 inch = 0.5 miles

0 0.25 0.5 Miles

Project Boundary
Freshwater Forested/Shrub Wetland
Freshwater Pond
Riverine

wood.

FIGURE 4

NWI
Channel Trail Project
Twentynine Palms, CA

Path: \\sdg1-fs1\gis\3554_NaturalResources\TerraNova_29Palms_ChannelTrail_322520115\MXD\ReportFigures\JD\Fig5_JD.mxd, aaron.johnson 8/26/2021

1 inch = 300 feet
0 150 300 Feet

Project Boundary

Jurisdiction

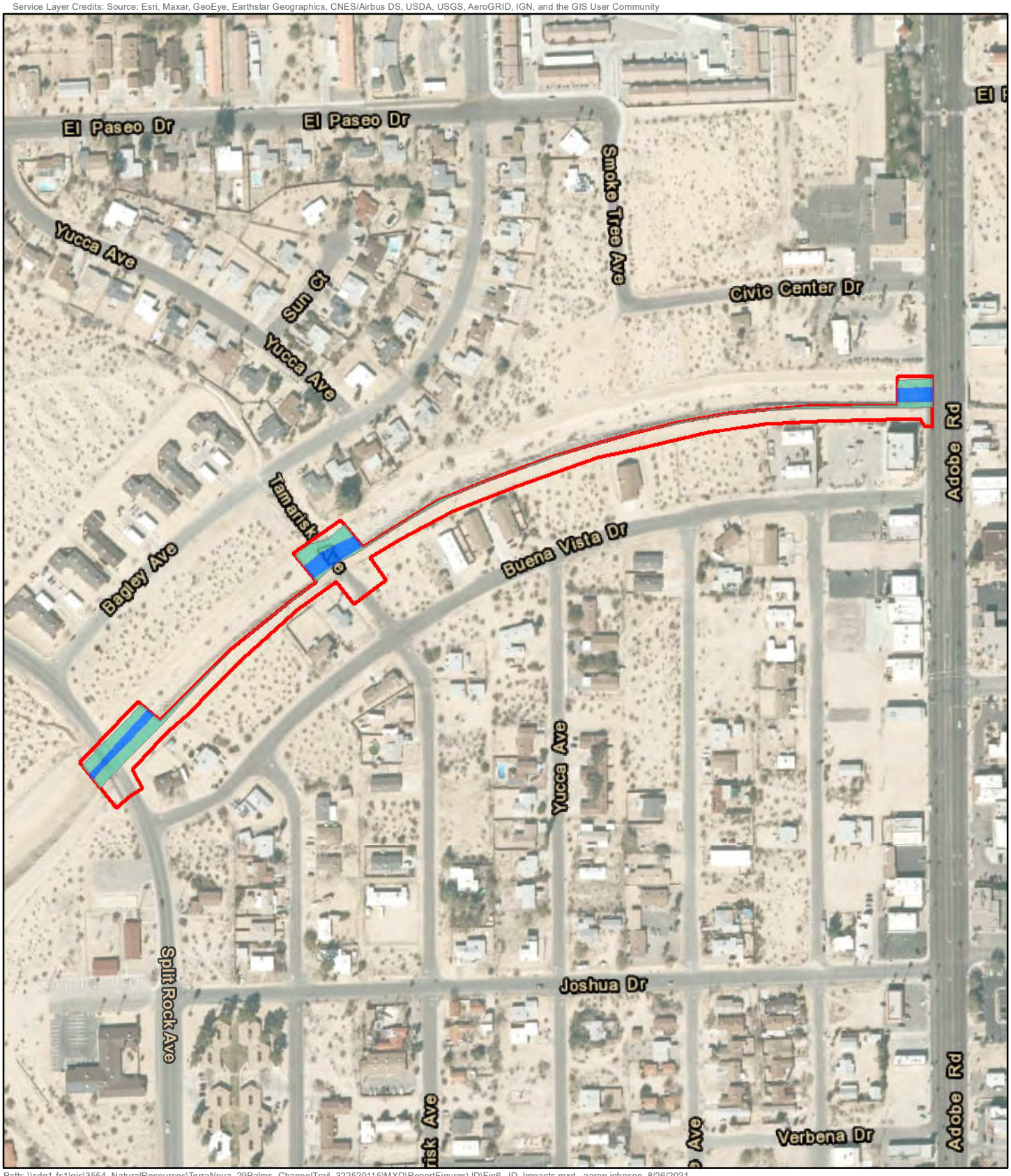
RWQCB

CDFW

wood.

FIGURE 5

Jurisdictional Delineation
Channel Trail Project
Twentynine Palms, CA



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1 inch = 300 feet
0 150 300 Feet

Project Boundary

Impacts to Jurisdictional Waters

RWQCB (0.23 acres)

CDFW (0.72 acres)

wood.

FIGURE 6

Impacts to Jurisdictional Waters
Channel Trail Project
Twentynine Palms, CA

APENDIX B

SITE PHOTOGRAPHS

Photo 1. View of unnamed drainage looking west (upstream) from Split Rock Avenue.

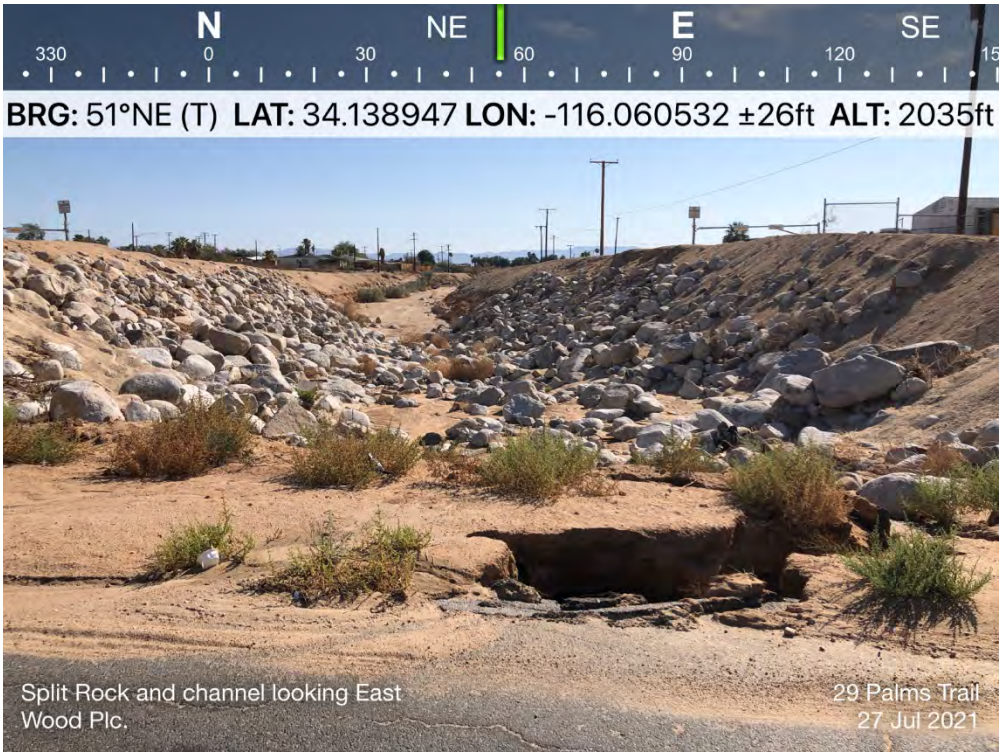

Photo 2. View of unnamed drainage looking east (downstream) from Split Rock Avenue.

Photo 3. Looking northeast showing vegetation within the channel.

Photo 4. Looking west (upstream) from Adobe Road.

Photo 5. Looking east (downstream) showing the box culvert crossing at the Adobe bridge.

Photo 6. Existing dirt road on top of bank where new trail will be installed.

Appendix D

Historical/Archaeological Resources Survey Report

HISTORICAL/ARCHAEOLOGICAL RESOURCES SURVEY REPORT

TWENTYNINE PALMS BIKE TRAIL PROJECT

City of Twentynine Palms
San Bernardino County, California

For Submittal to:

Community Development Department, Planning Division
City of Twentynine Palms
6136 Adobe Road
Twentynine Palms, CA 92277

Prepared for:

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

Prepared by:

CRM TECH
1016 East Cooley Drive, Suite A/B
Colton, CA 92324

Bai "Tom" Tang, Principal Investigator
Michael Hogan, Principal Investigator

August 11, 2021
CRM TECH Contract No. 3731

Title: Historical/Archaeological Resources Survey Report: Twentynine Palms Bike Trail Project, City of Twentynine Palms, San Bernardino County, California

Author(s): Bai "Tom" Tang, Principal Investigator/Historian
Deirdre Encarnación, Archaeologist/Report Writer
Nina Gallardo, Archaeologist/Native American Liaison

Consulting Firm: CRM TECH
1016 East Cooley Drive, Suite A/B
Colton, CA 92324
(909) 824-6400

Date: August 11, 2021

For Submittal to: Community Development Department, Planning Division
City of Twentynine Palms
6136 Adobe Road
Twentynine Palms, CA 92277
(760) 367-6799

Prepared for: Nicole Sauviat Criste, Vice President
Terra Nova Planning and Research, Inc.
42635 Melanie Place, Suite 101
Palm Desert, CA 92211
(760) 341-4800

USGS Quadrangle: Twentynine Palms, Calif., 7.5' quadrangle (Section 29, T1N R9E, San Bernardino Baseline and Meridian)

Project Size: Approximately 0.5 linear mile

Keywords: Southern Mojave Desert region; Phase I historical/archaeological resources survey; no "historical resources" under CEQA

MANAGEMENT SUMMARY

Between April and August 2021, at the request of Terra Nova Planning and Research, Inc., CRM TECH performed a cultural resources study on 0.5 linear mile of existing flood control channel right-of-way in the City of Twentynine Palms, San Bernardino County, California. The subject property of the study is located to the north of Buena Vista Drive and between Split Rock Avenue on the western end and Adobe Road on the eastern end, in the southeast quarter of Section 29, T1N R9E, San Bernardino Baseline and Meridian, as depicted in the United States Geological Survey (USGS) Twentynine Palms, California, 7.5' quadrangle.

The study is part of the environmental review process for the proposed construction of a bicycle trail along the south bank of the flood control channel. The City of Twentynine Palms, as the lead agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA). The purpose of this study is to provide the City with the necessary information and analysis to determine whether the project would cause a substantial adverse change to any "historical resources," as defined by CEQA, that may exist in or near the project area.

In order to identify such resources, CRM TECH initiated a historical/archaeological resources records search and a Native American Sacred Lands File search, pursued historical background research, and carried out an intensive-level field survey. Throughout these research procedures, no "historical resources" were encountered within or adjacent to the project area. Therefore, CRM TECH recommends to the City of Twentynine Palms a finding of *No Impact* regarding "historical resources."

No further cultural resources investigation is recommended for the project unless construction plans undergo such changes as to include areas not covered by this study. However, if buried cultural materials are encountered during any earth-moving operations associated with the project, all work within 50 feet of the discovery should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

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LIST OF FIGURES

INTRODUCTION

Between April and August 2021, at the request of Terra Nova Planning and Research, Inc., CRM TECH performed a cultural resources study on 0.5 linear mile of existing flood control channel right-of-way in the City of Twentynine Palms, San Bernardino County, California (Fig. 1). The subject property of the study is located to the north of Buena Vista Drive and between Split Rock Avenue on the western end and Adobe Road on the eastern end, in the southeast quarter of Section 29, T1N R9E, San Bernardino Baseline and Meridian, as depicted in the United States Geological Survey (USGS) Twentynine Palms, California, 7.5' quadrangle (Figs. 2, 3).

The study is part of the environmental review process for the proposed construction of a bicycle trail along the south bank of the flood control channel. The City of Twentynine Palms, as the lead agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA; PRC §21000, et seq.). The purpose of this study is to provide the City with the necessary information and analysis to determine whether the project would cause a substantial adverse change to any "historical resources," as defined by CEQA, that may exist in or near the project area.

In order to identify such resources, CRM TECH initiated a historical/archaeological resources records search and a Native American Sacred Lands File search, pursued historical background research, and carried out an intensive-level field survey. The following report is a complete account of the methods, results, and final conclusion of the study. Personnel who participated in the study are named in the appropriate sections below, and their qualifications are provided in Appendix 1.

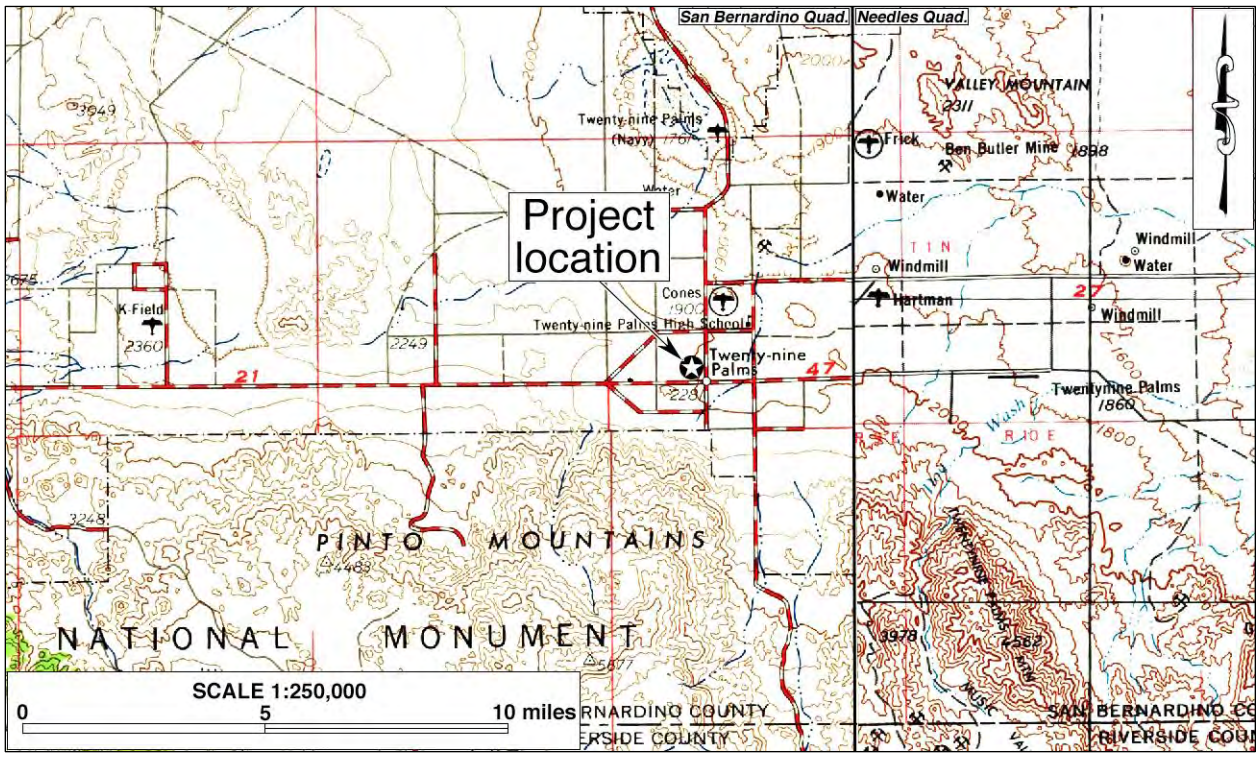

Figure 1. Project vicinity. (Based on USGS San Bernardino, Calif., and Needles, Calif.-Ariz., 120'x60' quadrangles [USGS 1969a; 1969b])

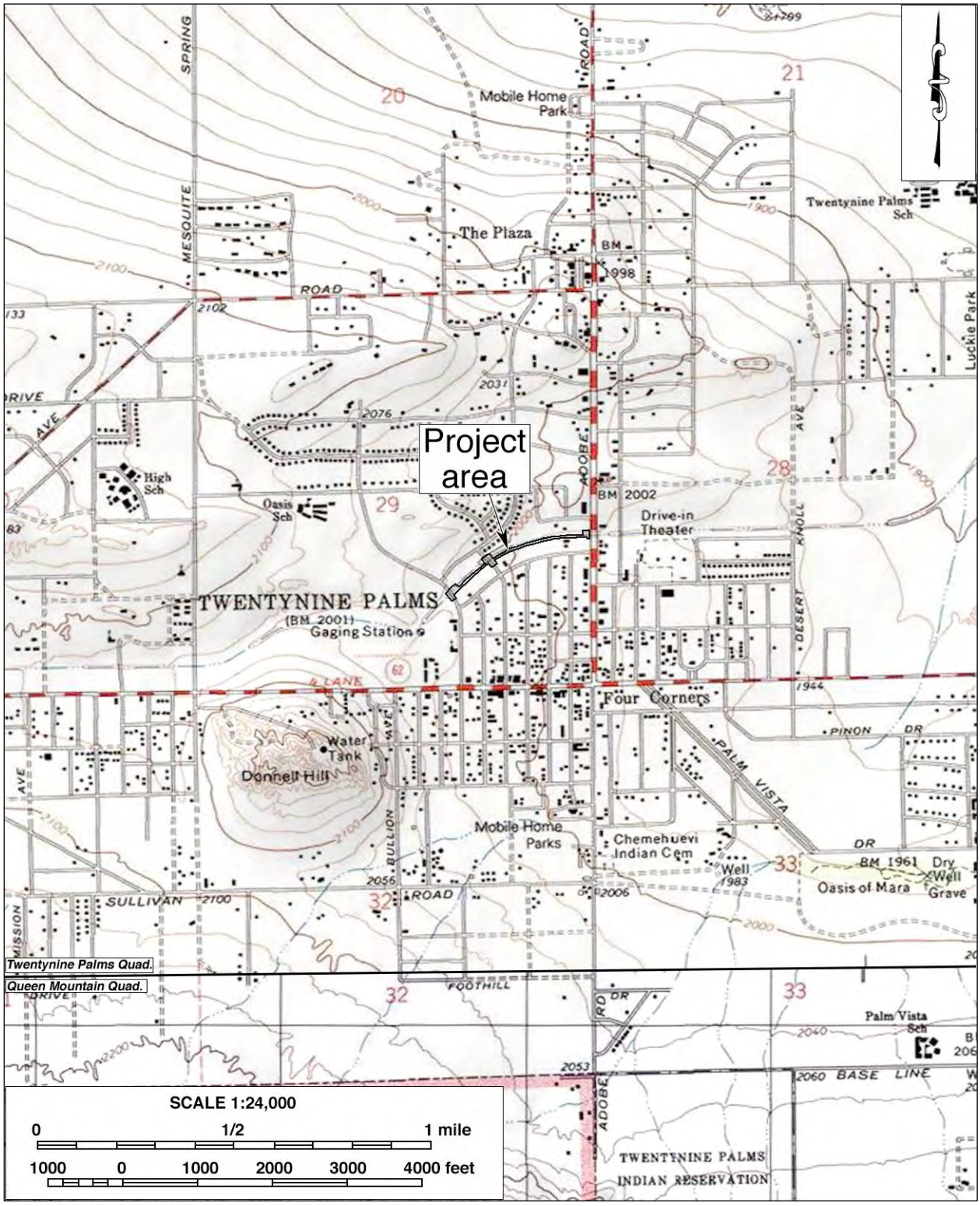

Figure 2. Project area. (Based on USGS Twentynine Palms and Queen Mountain, Calif., 7.5' quadrangles [USGS 1994; 1995])

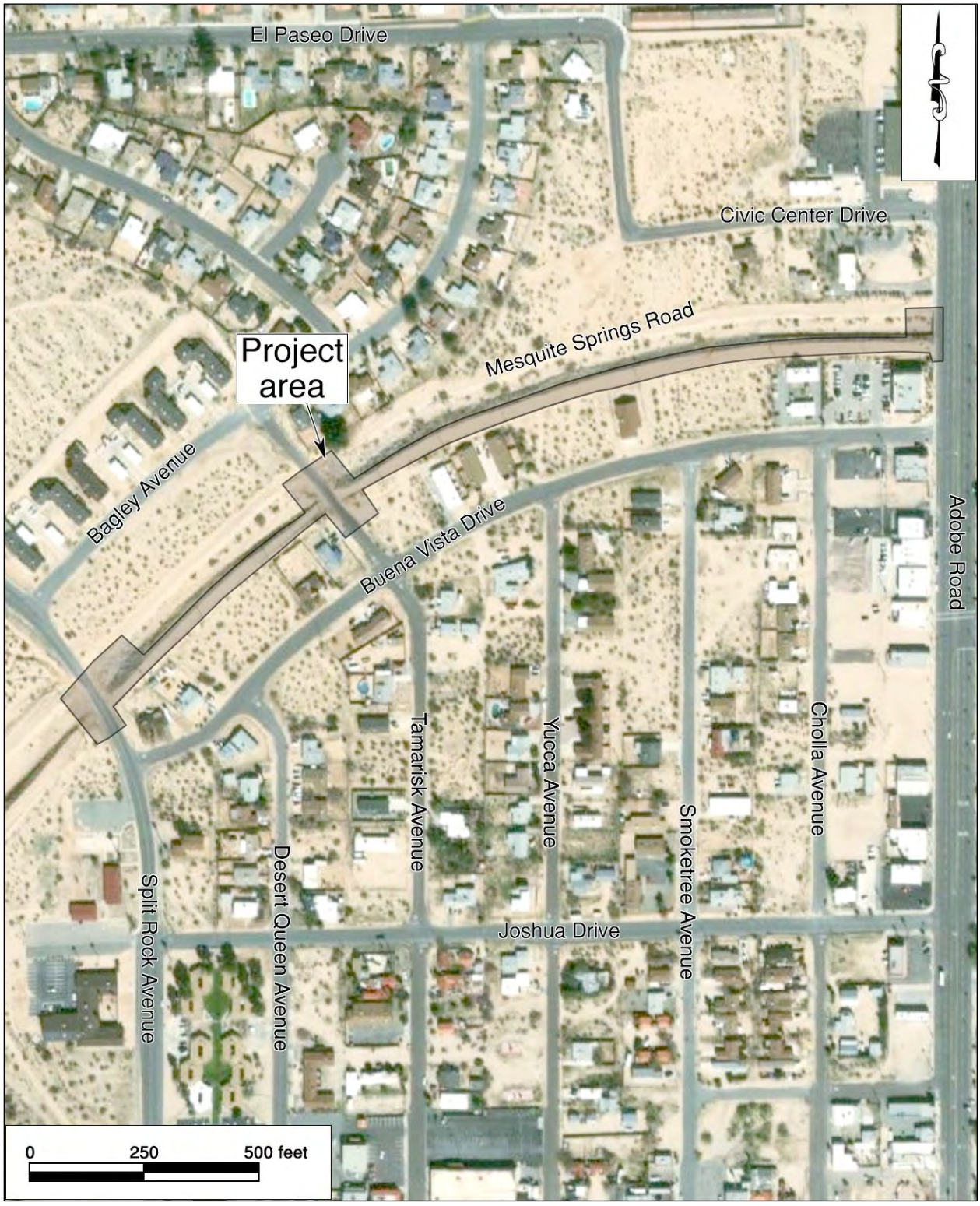

Figure 3. Aerial view of the project area.

SETTING

CURRENT NATURAL SETTING

The City of Twentynine Palms is located on an alluvial fan in the Morongo Basin, at the southern edge of the Mojave Desert, and to the north of the Pinto Mountains. The climate and environment of the area is typical of southern California "high desert" country, a reference to its higher elevation than that of the Colorado Desert to the south. The climate is marked by extremes in temperature and aridity, with summer highs reaching well over 110ºF and winter lows dipping below freezing. The average annual precipitation is less than five inches.

The linear project area is situated along an existing flood control channel on the edge of the Twentynine Palms city center, in an area bounded roughly by Buena Vista Drive on the south, Split Rock Avenue on the west, Bagley Avenue and Civic Center Driver on the north, and Adobe Road on the east (Fig. 3). The man-made channel is well-maintained and features earthen berms, metal retaining walls, and riprap build-up at the Split Rock Avenue and Tamarisk Avenue crossings (Fig. 4). Elevations in the project area range around 1,985-2,015 feet above mean sea level. Aside from the channel, the terrain is generally level, with a slight incline to the west.

The sparse vegetation growth in the project area consists primarily of creosote with some invasive weeds such as mustard and tumbleweed. The ground surface in the project area has been cleared and leveled in association with construction and maintenance of the channel. Soils are of light tan, fine- to coarse-grained sands mixed with small rocks, and imported soils are evident. In its native state, the project area is a part of the Joshua Tree Woodland Plant Community, which typically also features Joshua tree, juniper, buckwheat, Apache plume, desert alyssum, and various types of cacti.

Figure 4. Overview of the current natural setting of the project area. (Photograph taken on June 17, 2021; view to the southwest from the northeast corner)

CULTURAL SETTING

Prehistoric Context

In order to understand the progress of Native American cultures prior to European contact, archaeologists have devised chronological frameworks on the basis of artifacts and site types that date back some 12,000 years. Currently, the chronology most frequently applied in the Mojave Desert divides the region's prehistory into five periods marked by changes in archaeological remains, reflecting different ways in which Native peoples adapted to their surroundings. According to Warren (1984) and Warren and Crabtree (1986), the five periods are as follows: the Lake Mojave Period, 12,000 years to 7,000 years ago; the Pinto Period, 7,000 years to 4,000 years ago; the Gypsum Period, 4,000 years to 1,500 years ago; the Saratoga Springs Period, 1,500 years to 800 years ago; and the Protohistoric Period, 800 years ago to European contact.

More recently, Hall (2000) presented a slightly different chronology for the region, also with five periods: Lake Mojave (ca. 8000-5500 B.C.), Pinto (ca. 5500-2500 B.C.), Newberry (ca. 1500 B.C.-500 A.D.), Saratoga (ca. 500-1200 A.D.), and Tecopa (ca. 1200-1770s A.D.). According to Hall (*ibid*.:14), small mobile groups of hunters and gatherers inhabited the Mojave Desert during the Lake Mojave sequence. Their material culture is represented by the Great Basin Stemmed points and flaked stone crescents. These small, highly mobile groups continued to inhabit the region during the Pinto Period, which saw an increased reliance on ground foods, small and large game animals, and the collection of vegetal resources, suggesting that "subsistence patterns were those of broad-based foragers" (*ibid*.:15). Artifact types found in association with this period include the Pinto points and *Olivella* sp. spire-lopped beads.

Distinct cultural changes occurred during the Newberry Period, in comparison to the earlier periods, including "geographically expansive land-use pattern…involving small residential groups moving between select localities," long-distance trade, and diffusion of trait characteristics (Hall 2000:16). Typical artifacts from this period are the Elko and Gypsum Contracting Stem points and Split Oval beads. The two ensuing periods, Saratoga and Tecopa, are characterized by seasonal group settlements near accessible food resources and the intensification of the exploitation of plant foods, as evidenced by groundstone artifacts (*ibid*.:16).

Hall (2000:16) states that "late prehistoric foraging patterns were more restricted in geographic routine and range, a consequence of increasing population density" and other variables. Saratoga Period artifact types include Rose Spring and Eastgate points as well as Anasazi grayware pottery. Artifacts from the Tecopa Period include Desert Side-notched and Cottonwood Triangular points, buffware and brownware pottery, and beads of the Thin Lipped, Tiny Saucer, Cupped, Cylinder, steatite, and glass types (*ibid*.).

Ethnohistoric Context

The Native American groups living near the project location in recent centuries were the Serrano and the Chemehuevi. The Serrano's homeland was centered in the nearby San Bernardino Mountains but also included lowlands along both flanks of the mountain range. The Chemehuevi, a subgroup of the Southern Paiute, traditionally occupied the portion of the Mojave Desert extending east to the Colorado River. Both groups belong to the larger Shoshonean language stock, which in turn is part

of the Uto-Aztecan linguistic family. The leading anthropological works on the Chemehuevi include Kroeber (1925), Laird (1976), and Kelly and Fowler (1986), while the basic references on the Serrano are Kroeber (1925), Strong (1929), and Bean and Smith (1978). The following ethnohistoric discussion is based primarily on these sources.

Prior to European contact, native subsistence practices were defined by the surrounding landscape and were primarily based on the cultivating and gathering of wild foods and hunting, exploiting nearly all of the resources available. The Serrano settled mostly on elevated terraces, hills, and finger ridges near where flowing water emerged from the mountains, while the Chemehuevi, with fewer people spread over a much wider area, cultivated, gathered, and hunted in the open deserts, but were also known for their agricultural practices, in particular the cultivation of corn, beans, squash, and melons. Social customs brought members of each tribe together at important base camps or villages for annual ceremonies and tribal interaction with neighboring groups.

Both tribal groups had a variety of technological skills that they used to acquire subsistence, shelter, and medicine or to create ornaments and decorations. Common tools included manos and metates, mortars and pestles, hammerstones, fire drills, awls, arrow straighteners, and stone knives and scrapers. These lithic tools were made from locally sourced material as well as materials procured through trade or travel. They also used wood, horn, and bone spoons and stirrers; baskets for winnowing, leaching, grinding, transporting, parching, storing, and cooking; and pottery vessels for carrying water, storage, cooking, and serving food and drink. Much of this material cultural, elaborately decorated, does not survive in the archaeological record. As usual, the main items found archaeologically relate to subsistence activities.

In the Twentynine Palms area, the Serrano and the Chemehuevi relied on the waters of a desert oasis located just over one mile to the southeast of the project location. The oasis was first settled by the Serrano, who named it Maara, "the place of little springs and much grass" (NPS n.d.). The Serrano moved to the oasis on the advice of a medicine man and were told to plant a palm tree each time a boy was born. In the first year, the Serrano planted 29 palms at the oasis, providing food as well as materials for clothing, cooking implements, and housing (*ibid*.). The Chemehuevi began to settle around the oasis in the mid-19th century (*ibid*.).

Although contact with Europeans may have occurred as early as 1771 or 1772, direct European influence on Serrano and Chemehuevi lifeways began in the 1810s, when the mission system expanded to the edge of Serrano territory. Between then and the end of the mission era in 1834, most of the Serrano were removed to the nearby missions. While less affected by Spanish and Mexican policies due to their more remote location, the Chemehuevi experienced increasing conflict with encroaching Euroamerican prospectors and settlers during the late 19th century. By the early 20th century, the majority of Serrano and Chemehuevi population was incorporated into the reservation system. Today, most Serrano descendants are found on the San Manuel and the Morongo Indian Reservations, while the Chemehuevi are divided among the Chemehuevi, the Colorado River, and the Morongo Reservations.

Historic Context

Because of its harsh, unforgiving environment, non-Native settlement in the Mojave Desert was late to start and slow in subsequent development. Although the Mojave Desert received its first

European visitor, the famed Spanish explorer Francisco Garcés, as early as 1776 (Beck and Haase 1974:15), for the next 70 years the inland regions of Alta California were largely ignored by the Spanish and Mexican authorities in their colonization schemes. During that period, the presence of non-Natives in the Mojave Desert was essentially confined to a few trails that were established over the years, most notably the Old Spanish Trail, a pack-train road established between southern California and Santa Fe, New Mexico, in the 1830s.

Beginning in the early 1860s, as the gold mines in the Mother Lode country of the Sierra Nevada declined in production, groups of former forty-niners embarked on fresh explorations into the desert between California, Nevada, and Arizona. Before long, new mining districts sprang up throughout the Mojave Desert. However, the discovery of these early bonanzas was frequently incidental to travel across the desert to richer diggings elsewhere, as in the case of the La Paz gold rush in Arizona (Warren et al. 1981:96). A few renowned mining towns, such as Ivanpah and Calico, boomed in the 1870s and 1880s, but the first major strike in the Mojave Desert did not occur until the Old Woman Mountains boom of 1898-1901 (Gallegos et al. 1980:133).

In the mid-19th century, a few new trails were developed on the basis of the Old Spanish Trail, such as the Mormon Trail and the Mojave Road, by which many of the legendary wagon trains from the eastern U.S. entered California. Since the 1870s, the Mojave Desert has seen the establishment of a number of modern transportation thoroughfares across its vast reaches, including the Southern Pacific, the Santa Fe, and the Union Pacific Railroads; the fabled U.S. Route 66; and today's Interstate Highways 15 and 40. Several urban centers have gradually emerged along these arteries, mostly along the western and southern rims of the Mojave Desert. The bulk of the region, however, remains sparsely populated and rarely touched by human activities, even to the present time.

On the history of what is now the City of Twentynine Palms, a local history source (DesertUSA n.d.) offers the following summary:

> Twentynine Palms derives its name from the life-giving waters of the lush oasis where 29 native California Fan Palms grew along the Pinto Mountain fault… By the late 1800s, prospectors bivouacked here while seeking their fortunes in nearby gold camps, the most famous of which was the Dirty Sock Camp.
>
> In 1910, Bill and Frances Keys, among the first pioneer homesteaders, settled at the Desert Queen Ranch in what is now Joshua Tree National Park. Dr. James B. Luckie is credited with populating the community after World War I ended in 1918, by sending veterans suffering from the effects of mustard gas here for the pure, healing desert air. This Pasadena doctor became a prominent citizen and a founding father of the city.
>
> One WWI veteran, William Campbell, arrived with his wife Elizabeth in 1924 and began homesteading 160 acres off Joe Davis Road where they built a home of native stone, now a bed and breakfast called Roughly Manor at Campbell Branch. Aligned with the Southwest Museum of Los Angeles, the Campbells discovered thousands of archaeological sites and donated land for the first schoolhouse here, and for Luckie Park.
>
> In 1952, the U.S. Defense Department established a marine base north of the oasis for glider training. Now known as the U.S. Marine Corps Air Ground Combat Center, this vast area of the Mojave Desert encompasses the world's largest marine base, housing 18-20,000 military personnel. The city of Twentynine Palms was incorporated March 23, 1987.

RESEARCH METHODS

RECORDS SEARCH

The historical/archaeological resources records search for this study was provided by the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System on June 10, 2021. Located on the campus of California State University, Fullerton, the SCCIC is the State of California's official cultural resource records repository for the County of San Bernardino. During the records search, SCCIC staff examined the center's digital maps, records, and databases for previously identified cultural resources and existing cultural resources reports within a half-mile radius of the project area. Due to facility closure during the COVID-19 pandemic, records that had not been fully digitized, including recent surveys and site record forms, were unavailable to SCCIC staff. Therefore, the SCCIC cautions that the records search results may not be complete (see App. 2).

NATIVE AMERICAN PARTICIPATION

On April 27, 2021, CRM TECH submitted a written request to the State of California Native American Heritage Commission (NAHC) for a records search in the commission's Sacred Lands File. In the meantime, CRM TECH also contacted the nearby Twentynine Palms Band of Mission Indians between April 27 and June 14 for additional information on potential Native American cultural resources in the project vicinity and to coordinate with the tribe on their participation in the upcoming archaeological field survey. As a result, a monitor from the Twentynine Palms Band was present during the field survey (see below). The NAHC's reply is summarized in the sections below and attached in its entirety to this report in Appendix 3.

HISTORICAL RESEARCH

Historical background research for this study was conducted by CRM TECH principal investigator/ historian Bai "Tom" Tang. Sources consulted during the research included published literature in local history, historic maps of the Twentynine Palms area, and aerial photographs of the project vicinity. Among the maps consulted for this study were U.S. General Land Office (GLO) land survey plat maps dated 1856-1857 and USGS topographic maps dated 1955-1995, which are accessible at the websites of the U.S. Bureau of Land Management and the USGS. The aerial photographs, taken in 1970-2018, are available at the Nationwide Environmental Title Research (NETR) Online website and through the Google Earth software.

FIELD SURVEY

On June 17, 2021, CRM TECH archaeologist Nina Gallardo carried out the field survey of the project area with the assistance of Native American monitor Kelsey Bosch from the Twenty-Nine Palms Band of Mission Indians. The survey was completed at an intensive level by walking a series of parallel east-west transects spaced 10 meters (approximately 33 feet) apart. In this way, the ground surface in the entire project area was systematically and carefully examined for any evidence of human activities dating to the prehistoric or historic period (i.e., 50 years ago or older). Ground visibility was good to excellent (75% to 90%) due to the light vegetation growth (Fig. 4).

RESULTS AND FINDINGS

RECORDS SEARCH

According to SCCIC records, the project area had not been surveyed for cultural resources prior to this study, and no historical/archaeological resources had been recorded within or adjacent to the project boundaries. Within the half-mile scope of the records search, SCCIC records identified a total of 11 previous studies completed between 1978 and 2013 (Fig. 5; see App. 2). These and other similar studies nearby resulted in the recordation of 24 historical/archaeological resources within the scope of the records search.

Two of these recorded cultural resources were prehistoric—i.e., Native American—in nature. Located roughly 800 feet and nearly a half-mile to the north of the project location, these sites represented scatters of andesite flakes with a few stone tools and, in one case, an associated quarry area. The other 22 sites dated to the historic period and included segments of State Route 62, the Donnell Hill water tank, and 20 buildings or groups of buildings dating to circa 1930s-1960s, the majority of which were commercial in nature. Since none of these known cultural resources were found in the immediate vicinity of the project area, none of them require further consideration during this study.

NATIVE AMERICAN PARTICIPATION

In response to CRM TECH's inquiry, the NAHC reported in a letter dated May 13, 2021, that the Sacred Lands File search results were negative for known Native American cultural resources in the project vicinity. Noting that the absence of specific information would not necessarily indicate the absence of cultural resources, however, the NAHC recommended that local Native American groups be consulted for further information and provided a referral list of 14 individuals associated with eight local Native American groups who may have knowledge of such resources. The NAHC's reply is attached to this report in Appendix 3 for reference by the City of Twentynine Palms in future government-to-government consultations with the pertinent tribal groups. As stated above, the Twenty-Nine Palms Band of Mission Indians participated in the archaeological field survey for this study, but the tribe has not provided any comments or information on potential Native American cultural resources in or near the project area.

HISTORICAL RESEARCH

Historical sources consulted during this study suggest that the project area appears to be relatively low in sensitivity for cultural resources from the historic period. The historical maps and aerial photographs indicate no man-made features within or adjacent to the project area until after the 1950s, when the existing flood control channel was constructed (Figs. 6, 7; NETR Online 1970-2016; Google Earth 1994-2018). In the mid-1850s, when the U.S. government conducted the first systematic land survey in the Twentynine Palms area, the only man-made feature noted in the surrounding area was a trail traversing within a half mile to the south of the project location and branching off to the Oasis of Maara, which the surveyors called "Palm Springs" (Fig. 6).

A century later, several residential tracts had emerged in the project vicinity, reflecting the growth of the community during the first half of the 20th century (Fig. 7). In the immediate vicinity of the

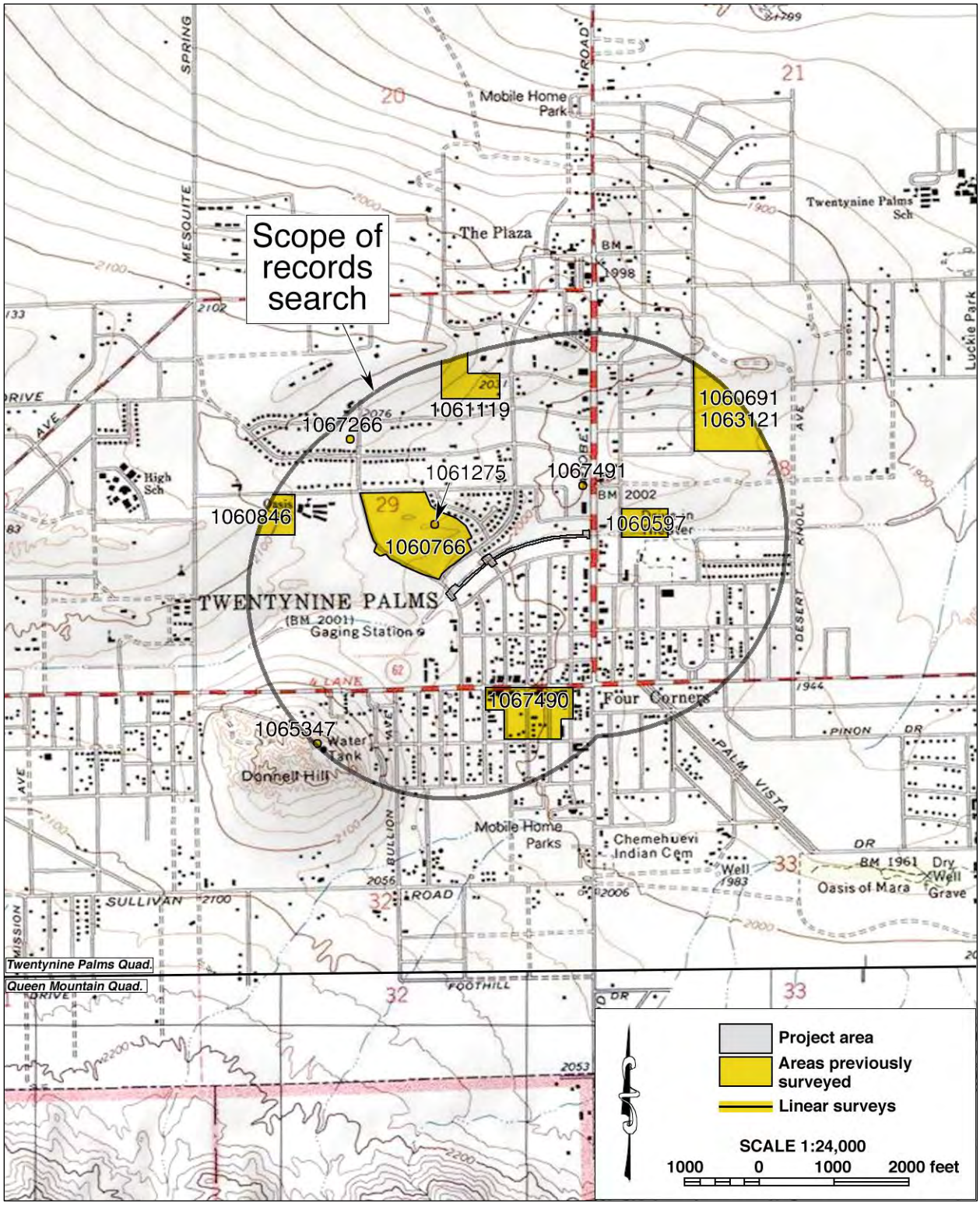

Figure 5. Previous cultural resources studies in the vicinity of the APE, listed by SCCIC file number. Locations of historical/archaeological sites are not shown as a protective measure.

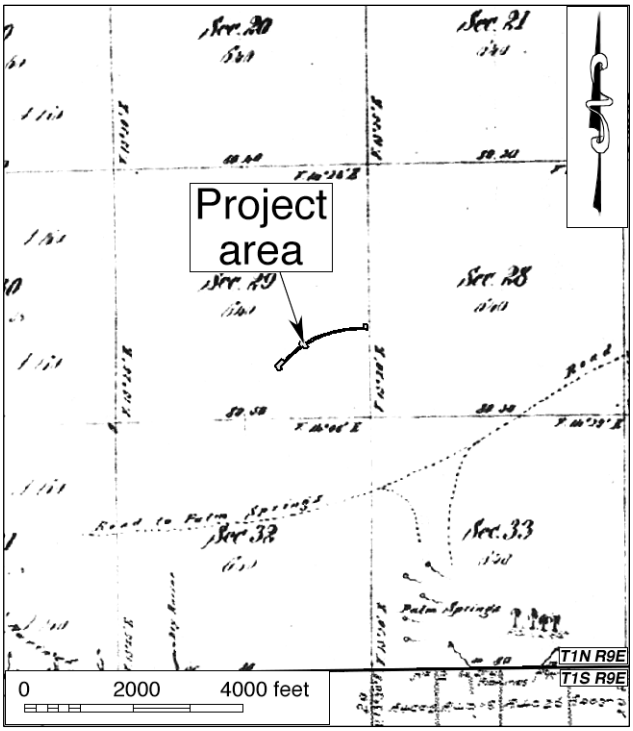

Figure 6. The project area and vicinity in 1855-1857. (Source: GLO 1856; 1857)

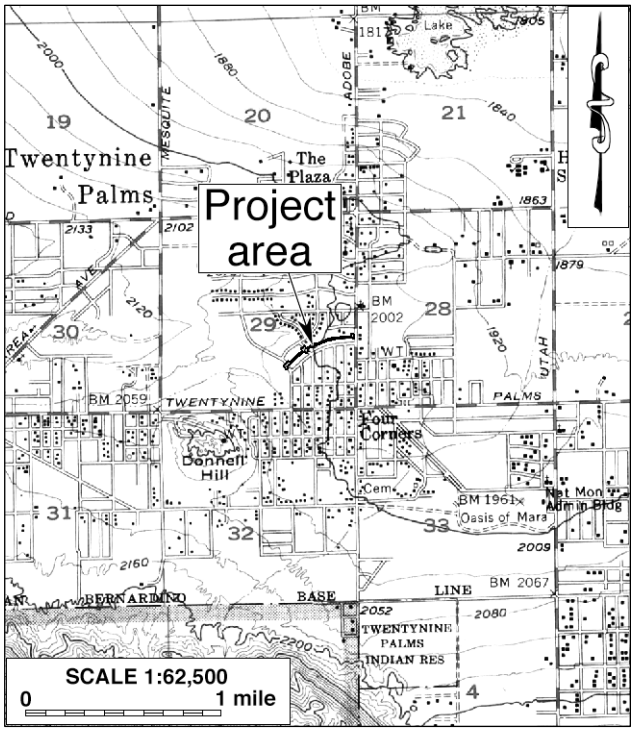

Figure 7. The project area and vicinity in 1937-1952. (Source: USGS 1955)

project area, however, the forerunners of today's Split Rock Avenue, Tamarisk Avenue, Adobe Road, and Buena Vista Drive were the only notable features known to be present during the 1950s (Fig. 7). The effort to channelize the drainage within the project area evidently began sometime between 1955 and 1970 (Fig. 7; NETR Online 1970). Upgrades to the channel since then have included the earthen berms and the riprap build-up observed in aerial photographs over the years (NETR Online 1983-2009; Google Earth 2005-2018). Other than the channel and the intersecting roadways, no man-made features were observed within project boundaries throughout the historic period.

FIELD SURVEY

The field survey did not encounter any potential "historical resources" within the project area. The ground surface in the project area has been extensively disturbed in association with the construction and maintenance of the flood control channel, as mentioned above. Scattered domestic refuse was noted within the project boundaries, including a large refuse deposit near the Adobe Road bridge over the channel. All of the refuse items are clearly modern in origin, however, and none of them demonstrate any historical or archaeological interest.

The only properties found in the project area that are known to predate the modern era are the flood control channel and the intersecting public roadways, namely Split Rock Avenue, Tamarisk Avenue, and Adobe Road, all of which date to the late historic period, as discussed above. As working components of the modern infrastructure, however, their current appearance and configuration reflect much more the results of upgrading and maintenance during the modern era, and none of

them demonstrate any distinctively historical character. Most of the associated physical features, such as the sidewalks along Adobe Road and the earthen berms along the channel, are entirely modern in appearance. As such, these common, ubiquitous, and nondescript infrastructure segments are not considered potentially "historical resources."

DISCUSSION

The purpose of this study is to identify any cultural resources within or adjacent to the project area, and to assist the City of Twentynine Palms in determining whether such resources meet the official definition of "historical resources" as provided in the California Public Resources Code, in particular CEQA. According to PRC §5020.1(j), "'historical resource' includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California."

More specifically, CEQA guidelines state that the term "historical resources" applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources, included in a local register of historical resources, or determined to be historically significant by the lead agency (Title 14 CCR §15064.5(a)(1)-(3)). Regarding the proper criteria for the evaluation of historical significance, CEQA guidelines mandate that "generally a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources" (Title 14 CCR §15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
(2) Is associated with the lives of persons important in our past.
(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
(4) Has yielded, or may be likely to yield, information important in prehistory or history. (PRC §5024.1(c))

In summary of the research results presented above, no potential "historical resources" were previously identified within or adjacent to the project area, and none were found during the present survey. In addition, the Sacred Lands File search by the NAHC did not identify any sites of traditional cultural value in the vicinity. Based on these findings, the present study concludes that no "historical resources" exist within or adjacent to the project area.

CONCLUSION AND RECOMMENDATIONS

CEQA establishes that "a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (PRC §21084.1). "Substantial adverse change," according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired." As stated above, no "historical resources," as defined by CEQA and associated

regulations, have been identified within or adjacent to the project area. Accordingly, CRM TECH presents the following recommendations to the City of Twentynine Palms:

- The proposed project will not cause a substantial adverse change to any known "historical resources."
- No other cultural resources investigation will be necessary for the project unless construction plans undergo such changes as to include areas not covered by this study.
- If any buried cultural materials are encountered during earth-moving operations associated with the project, all work within 50 feet of the discovery should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

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APPENDIX 1:
PERSONNEL QUALIFICATIONS

PRINCIPAL INVESTIGATOR/HISTORIAN
Bai "Tom" Tang, M.A.

Education

1988-1993	Graduate Program in Public History/Historic Preservation, University of California, Riverside.
1987	M.A., American History, Yale University, New Haven, Connecticut.
1982	B.A., History, Northwestern University, Xi'an, China.
2000	"Introduction to Section 106 Review," presented by the Advisory Council on Historic Preservation and the University of Nevada, Reno.
1994	"Assessing the Significance of Historic Archaeological Sites," presented by the Historic Preservation Program, University of Nevada, Reno.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1993-2002	Project Historian/Architectural Historian, CRM TECH, Riverside, California.
1993-1997	Project Historian, Greenwood and Associates, Pacific Palisades, California.
1991-1993	Project Historian, Archaeological Research Unit, University of California, Riverside.
1990	Intern Researcher, California State Office of Historic Preservation, Sacramento.
1990-1992	Teaching Assistant, History of Modern World, University of California, Riverside.
1988-1993	Research Assistant, American Social History, University of California, Riverside.
1985-1988	Research Assistant, Modern Chinese History, Yale University.
1985-1986	Teaching Assistant, Modern Chinese History, Yale University.
1982-1985	Lecturer, History, Xi'an Foreign Languages Institute, Xi'an, China.

Cultural Resources Management Reports

Preliminary Analyses and Recommendations Regarding California's Cultural Resources Inventory System (with Special Reference to Condition 14 of NPS 1990 Program Review Report). California State Office of Historic Preservation working paper, Sacramento, September 1990.

Numerous cultural resources management reports with the Archaeological Research Unit, Greenwood and Associates, and CRM TECH, since October 1991.

PRINCIPAL INVESTIGATOR/ARCHAEOLOGIST
Michael Hogan, Ph.D., RPA (Registered Professional Archaeologist)

Education

1991	Ph.D., Anthropology, University of California, Riverside.
1981	B.S., Anthropology, University of California, Riverside; with honors.
1980-1981	Education Abroad Program, Lima, Peru.
2002	"Section 106—National Historic Preservation Act: Federal Law at the Local Level," UCLA Extension Course #888.
2002	"Recognizing Historic Artifacts," workshop presented by Richard Norwood, Historical Archaeologist.
2002	"Wending Your Way through the Regulatory Maze," symposium presented by the Association of Environmental Professionals.
1992	"Southern California Ceramics Workshop," presented by Jerry Schaefer.
1992	"Historic Artifact Workshop," presented by Anne Duffield-Stoll.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1999-2002	Project Archaeologist/Field Director, CRM TECH, Riverside, California.
1996-1998	Project Director and Ethnographer, Statistical Research, Inc., Redlands, California.
1992-1998	Assistant Research Anthropologist, University of California, Riverside.
1992-1995	Project Director, Archaeological Research Unit, U.C. Riverside.
1993-1994	Adjunct Professor, Riverside Community College, Mt. San Jacinto College, U.C. Riverside, Chapman University, and San Bernardino Valley College.
1991-1992	Crew Chief, Archaeological Research Unit, U.C. Riverside.
1984-1998	Project Director, Field Director, Crew Chief, and Archaeological Technician for various southern California cultural resources management firms.

Research Interests

Cultural Resource Management, Southern Californian Archaeology, Settlement and Exchange Patterns, Specialization and Stratification, Culture Change, Native American Culture, Cultural Diversity.

Cultural Resources Management Reports

Principal investigator for, author or co-author of, and contributor to numerous cultural resources management study reports since 1986.

Memberships

Society for American Archaeology; Society for California Archaeology; Pacific Coast Archaeological Society; Coachella Valley Archaeological Society.

PROJECT ARCHAEOLOGIST/REPORT WRITER
Deirdre Encarnación, M.A.

Education

2003	M.A., Anthropology, San Diego State University, California.
2000	B.A., Anthropology, minor in Biology, with honors; San Diego State University, California.
2021	Certificate of Specialization, Kumeyaay Studies, Cuyamaca College, California.

Professional Experience

2004-	Project Archaeologist/Report Writer, CRM TECH, Riverside/Colton, California.
2001-2003	Part-time Lecturer, San Diego State University, California.
2001	Research Assistant for Dr. Lynn Gamble, San Diego State University.
2001	Archaeological Collection Catalog, SDSU Foundation.

Memberships

Society for California Archaeology; Society for Hawaiian Archaeology; California Native Plant Society; Journal of California and Great Basin Anthropology.

PROJECT ARCHAEOLOGIST/NATIVE AMERICAN LIAISON
Nina Gallardo, B.A.

Education

2004	B.A., Anthropology/Law and Society, University of California, Riverside.

Professional Experience

2004-	Project Archaeologist, CRM TECH, Riverside/Colton, California.

Cultural Resources Management Reports

Co-author of and contributor to numerous cultural resources management reports since 2004.

APPENDIX 2

SUMMARY OF CULTURAL RESOURCES RECORDS SEARCH RESULTS

South Central Coastal Information Center
California State University, Fullerton
Department of Anthropology MH-426
800 North State College Boulevard
Fullerton, CA 92834-6846
657.278.5395 / FAX 657.278.5542
sccic@fullerton.edu
California Historical Resources Information System
Orange, Los Angeles, and Ventura Counties

6/10/2021 Records Search File No.: 22404.8557

Nina Gallardo
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Re: Record Search Results for the 3731 LEVEE BIKE PATH

The South Central Coastal Information Center received your records search request for the project area referenced above, located on the Twentynine Palms and Queen Mtn, CA USGS 7.5' quadrangle(s). Due to the COVID-19 emergency, we have implemented new records search protocols, which limits the deliverables available to you at this time. **WE ARE ONLY PROVIDING DATA THAT IS ALREADY DIGITAL AT THIS TIME.** Please see the attached document on COVID-19 Emergency Protocols for what data is available and for future instructions on how to submit a records search request during the course of this crisis. If your selections on your data request form are in conflict with this document, we reserve the right to default to emergency protocols and provide you with what we stated on this document. You may receive more than you asked for or less than you wanted. The following reflects the results of the records search for the project area and a ½-mile radius:

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☒ custom GIS maps ☐ shape files ☐ hand-drawn maps

Resources within project area: 0	None
Resources within ½-mile radius: 24	SEE ATTACHED MAP or LIST
Reports within project area: 0	None
Reports within ½-mile radius: 11	SEE ATTACHED MAP or LIST

Resource Database Printout (list):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Digital Database (spreadsheet):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (list):	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Report Digital Database (spreadsheet):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed
Report Copies:	☐ enclosed	☒ not requested	☐ nothing listed

OHP Built Environment Resources Directory (BERD) 2019: ☒ available online; please go to https://ohp.parks.ca.gov/?page_id=30338

Archaeo Determinations of Eligibility 2012: ☒ enclosed ☐ not requested ☐ nothing listed

Historical Maps: ☒ not available at SCCIC; please go to https://ngmdb.usgs.gov/topoview/viewer/#4/39.98/-100.02

Ethnographic Information: ☒ not available at SCCIC

Historical Literature: ☒ not available at SCCIC

GLO and/or Rancho Plat Maps: ☒ not available at SCCIC

Caltrans Bridge Survey: ☒ not available at SCCIC; please go to http://www.dot.ca.gov/hq/structur/strmaint/historic.htm

Shipwreck Inventory: ☒ not available at SCCIC; please go to http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp

Soil Survey Maps: (see below) ☒ not available at SCCIC; please go to http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System,

Isabela Kott
Assistant Coordinator, GIS Program Specialist

Enclosures:

(X) Covid-19 Emergency Protocols for San Bernardino County Records Searches – 2 pages

(X) Custom Maps – 2 pages

(X) Resource Digital Database (spreadsheet) – 24 lines

(X) Report Digital Database (spreadsheet) – 11 lines

(X) Resource Record Copies – (all) 102 pages

(X) Archaeological Determinations of Eligibility (2012) – 1 page

(X) National Register Status Codes – 1 page

Emergency Protocols for San Bernardino County Records Searches

These instructions are for qualified consultants with a valid Access and Use Agreement.

WE ARE ONLY PROVIDING DATA THAT IS ALREADY DIGITAL AT THIS TIME. WE ARE NOT PROVIDING SHAPEFILE DATA FOR SAN BERNARDINO COUNTY; YOU WILL ONLY RECEIVE A CUSTOM DIGITAL MAP.

We can only provide you information that is already in digital format; therefore, your record search may or may not be complete. Some records are only available in paper formats and so may not be available at this time. This also means that there may be data missing from the database bibliographies; locations of resource and report boundaries may be missing or mis-mapped on our digital maps; and that no pdf of a resource or report is available or may be incomplete.

As for the GIS mapped data, bibliographic databases, and pdfs of records and reports; not all the data in our digital archive for San Bernardino County was processed by SCCIC, therefore, we cannot vouch for its accuracy. Accuracy checking and back-filling of missing information is an on-going process under normal working conditions and cannot be conducted under the emergency protocols.

This is an extraordinary and unprecedented situation. Your options will be limited so that we can help as many of you as possible in the shortest amount of time. You may not get everything you want and/or you may get more than you want. We appreciate your patience and resilience.

Please send in your request via email using the data request form along with the associated shape files and pdf map of the project area. If you have multiple SBCO jobs for processing, you may not get them all back at the same time. Use this data request form:

http://web.sonoma.edu/nwic/docs/CHRISDataRequestForm.pdf

Please make your selections on the data request form based on the following instructions.

1. Keep your search radius as tight as possible, but we understand if you have a requirement. The wider the search radius, the higher the cost. You are welcome to request a Project area only search, but please make it clear on the request form that that is what you are seeking.

2. You will get custom maps of resource locations for the project area and the radius that you choose. We will only be providing maps of report locations for the project area and up to a ¼-mile radius. If you need bibliographic information for more than ¼-mile radius – you will be charged for all report map features within your selected search radius. You can opt out of having us create custom maps but you still pay for the map features in the project area or the selected search radius if you want the associated bibliographic information or pdfs of resources or reports.

3. You can request copies of site records and reports if they are digitally available.

4. You will also get the bibliographies (List, Details, Spreadsheet) that you choose for resources and reports. Because the bibliographic database is not yet complete, you will only get what is available at the time of your records search.
5. If you request more than what we are offering here, we may provide it if it is available or we reserve the right to default to these instructions. If you want copies of resources and reports that are not available digitally at the time of the search, you can send us a separate request for processing when we are allowed to return to the office. Fees will apply.

6. **You will need to search the OHP BERD yourself for your project area and your search radius.** This replaces the old OHP HPD. It is available online at the OHP website.

7. You can go online to find historic maps, so we are not providing them at this time.

8. Your packet will be sent to you electronically via Dropbox. We use 7-zip to password protect the files so you will need both on your computers. We email you the password. If you can't use Dropbox for some reason, then you will need to provide us with your Fed ex account number and we will ship you a disc with the results. As a last resort, we will ship on a disc via the USPS. You may be billed for our shipping and handling costs.

9. We will be billing you at the staff rate of $150 per hour and you will be charged for all resources and reports according to the "custom map charges", even if you don't get a custom or hand-drawn map. You will also be billed 0.15 per pdf page, as usual. Quad fees will apply if your research includes more than 2 quads. The fee structure for custom maps was designed to mimic the cost of doing the search by hand so the fees are comparable.

10. A copy of the digital fee structure is available on the Office of Historic Preservation website under the CHRIS tab. If the digital fee structure is new to you or you don't understand it; please ask questions before we process your request, not after. Thank you.

APPENDIX 3

NATIVE AMERICAN SACRED LANDS FILE SEARCH RESULTS

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

May 13, 2021

Nina Gallardo
CRM TECH

Via Email to: ngallardo@crmtech.us

Re: Proposed Twentynine Palms Bike Paths/Trails Project, San Bernardino County

Dear Ms. Gallardo:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
San Bernardino County
5/13/2021

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6907
Fax: (760) 699-6924
ACBCI-THPO@aguacaliente.net

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6800
Fax: (760) 699-6919

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Road — Cahuilla, Serrano
Banning, CA, 92220
Phone: (951) 755 - 5110
Fax: (951) 755-5177
abrierty@morongo-nsn.gov

Morongo Band of Mission Indians
Ann Brierty, THPO
12700 Pumarra Road — Cahuilla, Serrano
Banning, CA, 92220
Phone: (951) 755 - 5259
Fax: (951) 572-6004
abrierty@morongo-nsn.gov

Quechan Tribe of the Fort Yuma Reservation
Jill McCormick, Historic Preservation Officer
P.O. Box 1899 — Quechan
Yuma, AZ, 85366
Phone: (760) 572 - 2423
historicpreservation@quechantribe.com

Quechan Tribe of the Fort Yuma Reservation
Manfred Scott, Acting Chairman
Kw'ts'an Cultural Committee
P.O. Box 1899 — Quechan
Yuma, AZ, 85366
Phone: (928) 750 - 2516
scottmanfred@yahoo.com

San Manuel Band of Mission Indians
Jessica Mauck, Director of Cultural Resources
26569 Community Center Drive — Serrano
Highland, CA, 92346
Phone: (909) 864 - 8933
jmauck@sanmanuel-nsn.gov

Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820 — Cahuilla
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
lsaul@santarosa-nsn.gov

Serrano Nation of Mission Indians
Mark Cochrane, Co-Chairperson
P. O. Box 343 — Serrano
Patton, CA, 92369
Phone: (909) 528 - 9032
serranonation1@gmail.com

Serrano Nation of Mission Indians
Wayne Walker, Co-Chairperson
P. O. Box 343 — Serrano
Patton, CA, 92369
Phone: (253) 370 - 0167
serranonation1@gmail.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Proposed Twentynine Palms Bike Paths/Trails Project, San Bernardino County.

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487 — Cahuilla
San Jacinto, CA, 92581 — Luiseno
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

Soboba Band of Luiseno Indians
Isaiah Vivanco, Chairperson
P. O. Box 487 — Cahuilla
San Jacinto, CA, 92581 — Luiseno
Phone: (951) 654 - 5544
Fax: (951) 654-4198
ivivanco@soboba-nsn.gov

Twenty-Nine Palms Band of Mission Indians
Anthony Madrigal, Tribal Historic Preservation Officer
46-200 Harrison Place — Chemehuevi
Coachella, CA, 92236
Phone: (760) 775 - 3259
amadrigal@29palmsbomi-nsn.gov

Twenty-Nine Palms Band of Mission Indians
Darrell Mike, Chairperson
46-200 Harrison Place — Chemehuevi
Coachella, CA, 92236
Phone: (760) 863 - 2444
Fax: (760) 863-2449
29chairman@29palmsbomi-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Proposed Twentynine Palms Bike Paths/Trails Project, San Bernardino County.