



Department of Public Works

Environmental & Construction • Flood Control

Operations • Solid Waste Management

Surveyor • Transportation

Gerry Newcombe
Director

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT DONNELL BASIN PROJECT

The San Bernardino County Flood Control District (County) has prepared a Draft Mitigated Negative Declaration (MND) in compliance with the California Environmental Quality Act (CEQA) to construct and maintain a series of improvements (proposed project) to the existing Donnell Basin, a regional flood control detention basin located in the City of Twentynine Palms, in San Bernardino County. The San Bernardino County Flood Control District will act as the Lead Agency under CEQA and will obtain all necessary regulatory permits to construct the project.

As presently built, Donnell Basin is an interim facility that does not provide the planned flood control capacity consistent with the Twentynine Palms Master Plan of Drainage. The proposed project is needed to increase the capacity of Donnell Basin and reduce downstream hazards associated with flooding, sedimentation, and debris. By increasing the capacity of Donnell Basin, stormwater flows would be detained and discharged more slowly to downstream facilities, thereby increasing flood hazard protection. The purpose and need for the proposed project is to detain stormwater flows in order to mediate flooding hazards which pose risk to property and the public in the City of Twentynine Palms.

The Draft MND details the proposed project; evaluates and describes the potential environmental impacts associated with the construction and operation of the proposed project; identifies those impacts that could be significant; and presents mitigation measures, which avoid, minimize or mitigate these impacts. As provided for by CEQA Section 21064.5, a MND may be prepared for a project subject to CEQA when the project will not result in significant environmental impacts that cannot be mitigated to a level below significance.

The draft MND is available for public review on the County project website: http://www.sbcounty.gov/dpw/public_notices/public_notices.asp. Copies of the draft MND are also available at the Twentynine Palms Branch Library, located at 6078 Adobe Road, Twentynine Palms, CA 92277-2354 and at the County office listed below.

In accordance with CEQA, a good faith effort has been made during the preparation of this draft MND to contact affected agencies, organizations, and individuals who may have an interest in this project. In reviewing the MND and initial study, affected public agencies and the interested public should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects on the project area are proposed to be avoided or mitigated.

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Notice of Intent to Adopt a Mitigated Negative Declaration
San Bernardino County Department of Public Works
Donnell Basin Project, cont.

Comments may be made on the draft MND in writing before the end of the comment period. Following the close of the public comment period, the County Board of Supervisors will consider this MND and comments thereto in determining whether to certify the environmental document.

Written comments on the draft MND should be sent to the following address no later than **March 14, 2016**:

Nancy Sansonetti, AICP, Senior Planner
Nancy.Sansonetti@dpw.sbcounty.gov
San Bernardino County Department of Public Works
825 E. Third Street, Room 123
San Bernardino, California 92415
Phone: 909.387.8109
Fax: 909.387.7876

San Bernardino County's Board of Supervisors will consider this document for approval and certification during a future advertised public hearing.

Initial Study/ Mitigated Negative Declaration for the Donnell Basin

Lead Agency:

County of San Bernardino
Department of Public Works
Flood Control District
825 East Third Street
San Bernardino, California 92415



Technical Assistance Provided by:

Aspen Environmental Group
5020 Chesebro Road, Suite 200
Agoura Hills, California 91301

February 2016

A. Initial Study

A.1 Project Description

The San Bernardino County Flood Control District (District) proposes to construct and maintain a series of improvements (proposed project) to the existing Donnell Basin, a regional flood control detention basin located in the City of Twentynine Palms, in San Bernardino County. Actions included under the proposed project will provide improved functions of the basin consisting of a reduction of peak discharge, reduction in debris, and control of sedimentation. The proposed project will also include improvement to Twentynine Palms Channel and the crossing at Split Rock Avenue. The proposed project site is bounded by Twentynine Palms Highway on the south, Mesquite Springs Road on the west, El Paseo Drive on the north, and Split Rock Avenue on the east. Please see Figure 1.

A.1.1 Background

Twentynine Palms and the surrounding areas are subject to seasonal stormflows and flooding hazards that typically occur as either flash flooding down natural and man-made channels, or sheet flooding across the alluvial fans, plains, and valleys. There are no perennial rivers or streams in Twentynine Palms or the immediate vicinity. Drainage channels in the local mountains spread out into braided ephemeral stream channels and sheet flow when they reach the valley floor. Most of the existing development in Twentynine Palms has been completed without significant alteration to the natural terrain, resulting in stormwater flows and natural drainage courses passing through developed areas. (City of Twentynine Palms, 2012)

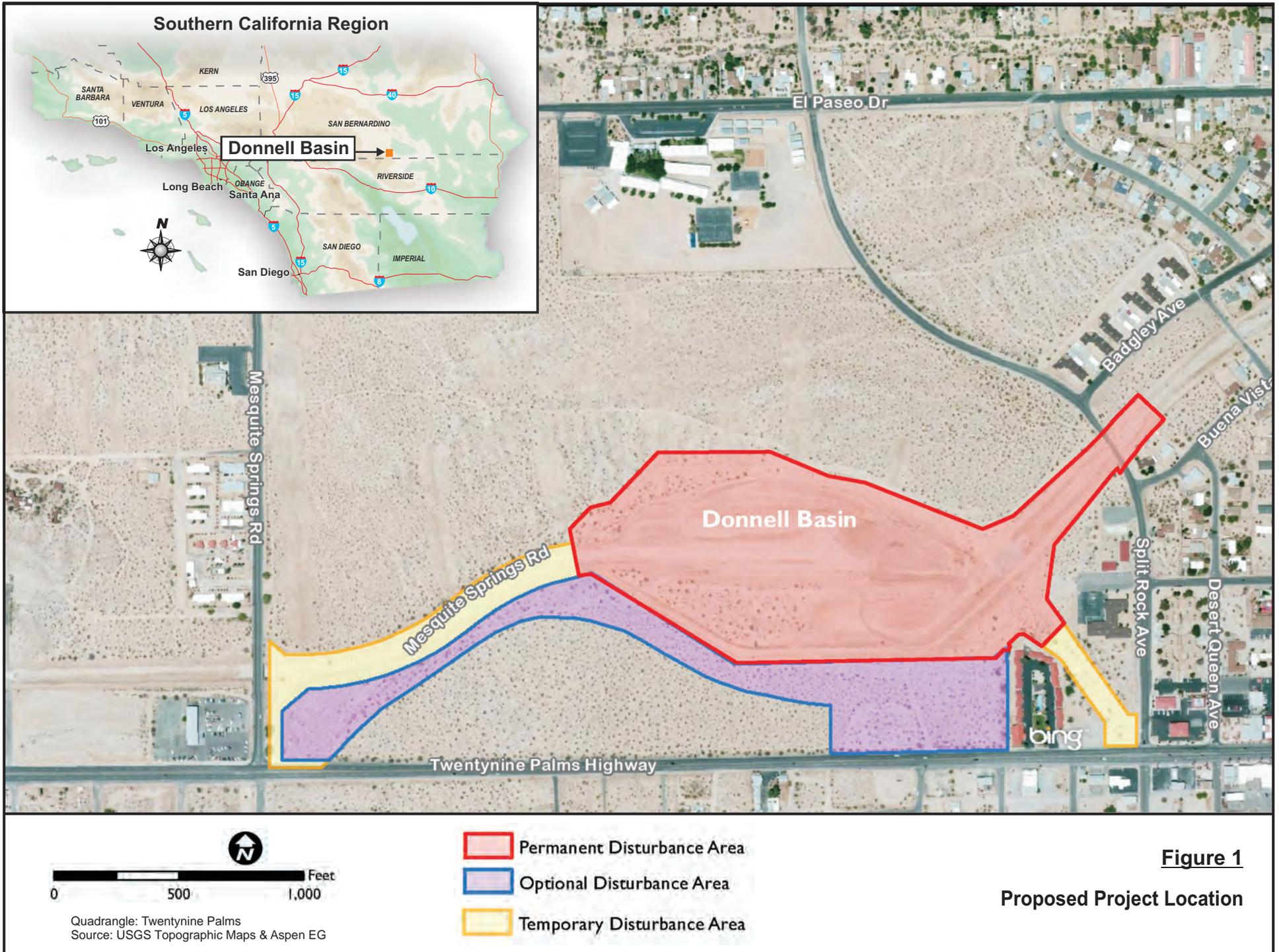
The only major drainage structure in the City of Twentynine Palms is the Twentynine Palms Channel. The Twentynine Palms Channel starts near the intersection of Hatch Road and State Route (SR)-62, passes through the central, most densely populated portion of the Twentynine Palms, and releases water into a natural wash near Bagdad Highway, north of Amboy Road. Donnell Basin receives flows from the channel, and is designed to provide both groundwater recharge and flood protection. Donnell Basin and the Twentynine Palms Channel are owned and maintained by the District. (City of Twentynine Palms, 2012)

A.1.2 Purpose and Need

As presently built, Donnell Basin is an interim facility that does not provide the planned flood control capacity consistent with the Twentynine Palms Master Plan of Drainage (MPD). The proposed project is needed to increase the capacity of Donnell Basin and reduce downstream hazards associated with flooding, sedimentation, and debris. By increasing the capacity of Donnell Basin, stormwater flows would be detained and discharged more slowly to downstream facilities, thereby increasing flood hazard protection. The purpose and need for the proposed project is to detain stormwater flows in order to mediate flooding hazards which pose risk to property and the public in the City of Twentynine Palms.

A.1.3 Project Location

The proposed project is located in the City of Twentynine Palms, in San Bernardino County. The proposed project site is bounded by Twentynine Palms Highway on the south, Mesquite Springs Road on the west, El Paseo Drive on the north, and Split Rock Avenue on the east. Please see Figure 1. Surrounding land uses and project site specifics are provided below.



A.1.3.1 Surrounding Land Uses and Setting

SR-62, also referred to as Twentynine Palms Highway, runs in a west-east alignment to the south of the proposed project area. Other roads in the area include Split Rock Avenue to the east, El Paseo Drive to the north, and Mesquite Springs Road to the west. A dirt access road exists along the northern boundary of the basin itself, which is also referred to as Mesquite Springs Road. In order to differentiate for the purposes of this document, the paved road to the west is referred to as “Mesquite Springs Road,” while the unpaved road along the basin is referred to as “Mesquite Springs Access Road.” Mesquite Springs Access Road continues along the north side of the Twentynine Palms Channel as it exits Donnell Basin to the northeast, continuing towards the east across Split Rock Avenue (0.12 mile downstream), Tamarisk Avenue (0.25 mile downstream), Adobe Road (0.53 mile downstream), Ocotillo Avenue (0.60 mile downstream), and Desert Knoll Avenue (more than one mile downstream).

Land uses surrounding Donnell Basin include a variety of residential and community developments. Land uses in the immediate project vicinity, along the surrounding roadways noted above, are summarized below. Distance from each land use to Donnell Basin is also noted.

- **The El Rancho Delores Motel**, established in the 1940s, is adjacent to the southeast of Donnell Basin, in the northwest corner of SR-62 and Split Rock Avenue.
- **First Baptist Church** is to the east, approximately 175 feet from the basin, at the southwest corner of Split Rock Avenue and Joshua Drive, just north of the El Rancho Delores Motel.
- **Oasis Elementary School** is to the north, approximately 780 feet (0.15 mile) from the basin, at the southwest corner of Split Rock Avenue and El Paseo Drive, with primary access on El Paseo Drive.
- **Church of Jesus Christ of LDS** is to the northwest, approximately 1,690 feet (0.32 mile) from the basin, on the north side of El Paseo Drive (73002 El Paseo Drive, Twentynine Palms, CA 92277)
- **El Paseo Apartments** is to the northwest, approximately 1,875 feet (0.36 mile) from the basin, located at the northeast corner of El Paseo Drive and Mesquite Springs Road.
- **Twentynine Palms High School** is to the northwest, approximately 1,950 feet (0.37 mile) from the basin, located along Mesquite Springs Road at the terminus of El Paseo Drive, bounded by Wildcat Way to the south, Datura Avenue to the west, and Sunnyslope Drive to the north, with primary access on Datura Avenue.
- **Twentynine Palms United Methodist Church** is to the west, approximately 1,511 feet (0.29 mile) from the basin, on the west side of Mesquite Springs Road and south of Gorgonio Drive.
- **Yucca Valley Chrysler Center** is to the southwest, approximately 1,589 feet (0.30 mile) from the basin, located on the west side of Mesquite Springs Road, adjacent to the north of SR-62.
- **Hill View Motel** is to the south, approximately 410 feet (0.08 mile) south of the basin, located on the south side of SR-62.

As noted above, sensitive land uses in the immediate project vicinity include schools, churches, and residential developments. Other land uses surrounding the basin include scattered homes to the south of SR-62, some with direct access from SR-62, and more condensed residential and community developments to the east of Split Rock Avenue and north of El Paseo Drive. Twentynine Palms City Hall is located to the northeast, approximately 2,695 feet (0.51 mile) from the basin, at the northwest corner of Adobe Road and Civic Center Drive, just north of where the project’s drainage and Mesquite Springs Access Road cross Adobe Road. Downtown Twentynine Palms is to the east/southeast of Donnell Basin.

A.1.3.2 Project Site and Vicinity

The proposed project site is characterized by the existing Donnell Basin, an interim flood control facility. The site is relatively surrounded by urban development, as described above, and the basin is fenced to control public access. Stormwater flows into and out of the basin are directed by the Twentynine Palms Channel, which enters Donnell Basin in the southwest and exits in the northeast. The proposed project footprint includes less than two tenths of a mile of the Twentynine Palms Channel, including an Arizona crossing at Split Rock Road. The proposed project site is heavily impacted by human disturbance including flood control activities, off-road use and the homeless (San Bernardino County, 2012). Access directly to the site is provided by Mesquite Springs Access Road, from Mesquite Springs Road to the west or Split Rock Avenue to the east, both of which are accessed by SR-62, Twentynine Palms Highway, which runs in a west-east alignment through the area. There is also an access road from the northeast corner of Split Rock Avenue and SR-62, adjacent to the El Rancho Delores Motel. Other roads surrounding the project site are described above, in Section A.1.3.1.

A.1.4 Proposed Project

The proposed project includes a series of improvements to the existing Donnell Basin, in order to increase its capacity and provide flood hazard protection to downstream areas. The project also includes improvements to the existing road crossing at Split Rock Avenue, east of the basin, in order to accommodate the lower basin elevation. The permanent footprint of the proposed project includes all areas that would be permanently altered as a result of the project, including due to activities such as excavation and fill placement. As with the current function of the existing interim facility, following implementation of the proposed project, flows from Donnell Basin would continue downstream in the Twentynine Palms Channel to Dale Dry Lake. Due to this connection with a dry lake, it is anticipated that the channel and basin would not be considered jurisdictional by the U.S. Army Corps of Engineers, and a Clean Water Act Section 404 permit would not be required; this issue is discussed in further detail in the Biological Resources analysis.

A.1.4.1 Project Elements

The proposed project would result in a series of improvements to flood control facilities in San Bernardino County, including within the existing Donnell Basin, as well as the Twentynine Palms Channel and a stormwater crossing structure at Split Rock Avenue. Each of these features is summarized below.

Donnell Basin

Improvements to the existing Donnell Basin would include deepening of the existing interim detention basin, re-use and/or disposal of excavated sediments, reinforcement of basin slopes, basin outlet works including concrete spillway, reconstruction of internal access roads, reconstruction of perimeter embankments, and expansion of the existing Twentynine Palms Channel and Split Rock Avenue crossing, described below. The height of the existing levee would be raised approximately 10 feet. Access will be provided via existing roadways and adjacent properties. Permanent slope easements will be acquired at some areas north of the existing right-of-way line for permanent slopes. An area that may be used for permanent fill placement is the property located adjacent to the south of the basin; use of this property for fill placement would avoid the need for off-site disposal of soil excavated from the basin, while also facilitating a level elevation on the adjacent property (height would not exceed the existing levee). The analysis of environmental impacts included in this document will address use of the adjacent property for the placement of permanent fill.

Twentynine Palms Channel

Twentynine Palms Channel downstream of Donnell Basin will be widened and deepened to accommodate the maximum outflow from the basin and to deepen the basin to the extent possible. Downstream improvements will include placement of rip-rap for a length within that portion. Length of improvements in this area would be approximately less than two tenths of a mile. Upstream of Donnell Basin, the channel will be lined with rip-rap. Exact amount of rip-rap required is not yet finalized, but would be less than one tenth of a mile.

Split Rock Avenue Crossing

There is an existing Arizona-style crossing at Split Rock Avenue; an Arizona crossing, common in the arid Southwest, allows a waterway to flow across a roadway. Under the proposed project, the crossing at Split Rock Avenue would be improved to convey a portion of the Q100 flow beneath the roadway. The existing Twentynine Palms Channel would be lowered by eight to nine feet in elevation at Split Rock Avenue, and a series of low-flow pipes would be installed under the roadway to accommodate small storm events. After installation of the low-flow pipes, Split Rock Avenue would be reconstructed with its current elevation. Larger storm events would continue to flow across the roadway.

A.1.4.2 Construction

Construction of the proposed project may be accomplished in a single phase or constructed in two phases (see end of section for further discussion). If constructed in one phase the construction would occur in eight primary stages over approximately 13 months, as summarized below in Table A.1-1.

Table A.1-1. Construction Stages

Stage	Activities	Summary	Duration (Days)
1	Mobilization	Mobilize vehicles, equipment, and materials to the project site	10
2	Clearing and Grubbing	Clear the area with dozer and brush rake, including heaving brush to 4-inch diameter, across approximately 28 acres.	5
3	Excavation	Excavate approximately 430,000 cubic yards (CY) of material from the basin over a four-month period.	80
4	Placement of Embankment (Including Compaction)	Approximately 70,000 compacted CY (81,400 loose cubic yards (LCY)) of fill and structural backfill to be placed over a three-month period.	65
5	Loading and Hauling of Excess Material	Total materials to be hauled include approximately 400,000 LCY, accounting for 81,400 LCY that would be re-used.	160
6	Rock Slope Protection Placement	Approximately 2,300 CY of rock to be placed within basin for slope protection over 40 days.	40
7	Concrete Structures Installation	Approximately 2,100 CY of concrete to be installed over 60 days for concrete features such outlet works, spillway.	60
8	Street Improvements and Misc. Works	Internal and external roadways improved and/or repaired as needed to maintain service, and additional material removed as needed.	30

Hours of operation during construction would be limited to daylight hours, with typical work hours being 7:00 a.m. to 3:00 p.m., Monday through Friday. Due to extreme weather in the proposed project area, work hours may be modified to begin at 5:00 a.m., as needed to avoid daytime heat in the summer. No construction activities would occur during snow months.

In total, approximately 430,000 CY of material would be excavated from Donnell Basin; depending upon final engineering and design, this quantity may range between 400,000 and 500,000 CY. Of the current estimate

of 430,000 CY of material to be excavated, it is anticipated that 80,000 to 100,000 CY would be re-used in the proposed project embankment. Final quantity of material to be re-used will depend upon material composition, to be assessed during construction. Material that is not suitable for re-use will be disposed of at an approved off-site facility, or will be used as permanent fill on properties adjacent to the south of Donnell Basin, in order to raise and level the elevation of these areas. Figure 1 identifies this area as the "Optional Disturbance Area." Permanent fill placement on the Optional Disturbance Area would only occur in coordination with the landowners, and would include the application of soil additives and/or the planting of natural grasses in order to stabilize soils. Alternatively, sand and gravel sales operations may be implemented at the project site to dispose of excess material. A utility pole relocation was undertaken by Southern California Edison (SCE) as a separate project and work was completed in August 2013. It is anticipated that basin construction work will begin in late 2016.

The number of off-road vehicles and equipment to be used during construction of the proposed project could vary from one or two to as many as 30, depending on actual site conditions, construction schedule, and the specific construction activity. The types of equipment anticipated to be required during construction of the proposed project include the following: forklifts, water trucks, scrapers, loaders, dozers, compaction equipment, wheel-mounted air compressor(s), excavators, pneumatic breaker, pneumatic-tired motor grader, steel drum roller, self-propelled paving machine, and haul trucks.

Table A.1-2. Construction Equipment

Equipment Type	Horsepower	Number	Hours / Day	# Days
<i>Clearing and Grubbing (Step 2)</i>				
Bulldozer	305	1	8	5
Grader	220	1	8	5
Loader	129	1	4	5
Chippers	50	1	4	5
Chainsaws	6	1	8	5
Water Trucks	457	1	8	5
<i>Excavation (Step 3)</i>				
Wheel Scraper	500	5	8	80
Bulldozer	305	2	8	80
Water Trucks	457	1	8	80
<i>Placement of Embankment (Step 4)</i>				
Loader	129	1	8	65
Dump Trucks	ND*	3	8	65
Bulldozer	305	1	8	65
Grader	220	1	8	65
Sheepsfoot / Roller / Tamper	240	1	8	65
Water Trucks	457	1	8	65
<i>Loading and Hauling of Excess Material (Step 5)</i>				
Loader	129	2	8	160
Dump Trucks	ND*	30	8	160
Bulldozer	305	1	8	160
Water Trucks	457	2	8	160
<i>Rock Slope Protection Placement (Step 6)</i>				
Excavator	188	1	8	40

Table A.1-2. Construction Equipment

Equipment Type	Horsepower	Number	Hours / Day	# Days
Loader	129	1	8	40
Haul Trucks	ND*	2	8	15
Grout Pump	43	1	8	30
<i>Concrete Structures Installation (Step 7)</i>				
Service Trucks	ND*	3	8	60
Concrete Mixers	15	4	8	60
Concrete Pump	43	1	8	60
<i>Street Improvements and Misc Works (Step 8)</i>				
Paving Machine	121	1	8	5
Compressor	100	1	8	30
Water Truck	457	1	8	30
Service Truck	ND*	2	8	30
Grader	220	1	8	10
Roller/Compactor	150	1	8	5

* ND = Not determined. Horsepower is not determined for on-road vehicles/equipment because the air pollutant and greenhouse gas emissions from on-road vehicles/equipment is based on vehicle category, such as heavy duty diesel, rather than engine horsepower.

An existing chain link fence currently surrounds the basin, on the right-of-way (ROW) boundary; this fence (or portions of this fence) would be removed to facilitate construction, but would be replaced along the ROW boundary to prevent or discourage public access during project operations. Temporary disturbance and staging areas for the vehicles and equipment identified in table A.1-2 would occur within the basin's permanent footprint and the existing floodway. In addition, access areas on either side of the basin would be temporarily disturbed to allow for the passage of vehicles, equipment, and machinery to and from the work area; these access areas are described below, and shown on Figure 1.

- Mesquite Springs Access Road is an existing dirt road that connects the paved Mesquite Springs Road with the western portion of Donnell Basin. This road would be widened and cleared of vegetation to accommodate the passage of large equipment and machinery.
- An unnamed dirt access road connecting the paved Split Rock Avenue with the southeastern portion of Donnell Basin, aligned between the El Rancho Delores Motel (adjacent to the west) and the First Baptist Church (to the north), would also be widened and cleared of vegetation.

The total area of temporary disturbance is 6.2 acres, which includes the existing access road areas as well as the portions of roadway that would be widened to accommodate construction access. Following the completion of the construction period, the widened areas would no longer be disturbed as a result of the project; however, the existing dirt roadways would occasionally be used to conduct routine inspection and maintenance activities, such as currently occurs for the existing basin facility.

Transportation. It is anticipated that Mesquite Springs Road and Split Rock Avenue would be used to transport construction vehicles, equipment, and materials to and from the proposed project site, via SR-62. The source(s) of material for project construction is not known at this time, but it is reasonably assumed that only roads without weight or use restrictions will be used as possible access routes. A 40-mile round trip for materials haul routes is assumed.

Utilities. A construction management trailer would be required to support construction of the proposed project. Connection to power, water, and possibly telephone service would be required for the

construction management trailer. Portable toilets would be provided on the construction site, and the construction management trailer would not require sewer service. An existing eight-inch Twentynine Palms Water District (TPWD) distribution line would be relocated as a part of this project by lowering the TPWD water line within Split Rock Road. An existing SCE line has previously been relocated around the existing basin footprint by SCE, and will not interfere with basin construction. The construction contractor selected to construct the proposed project would be responsible for providing generators and fuel as needed to power the equipment and vehicles required during construction. If nighttime construction is required, the construction contractor would also provide the necessary lighting.

Water. During construction of the proposed project, a water source would be required for soil compaction, dust suppression, concrete/grout/equipment wash-down (in designated areas per the Stormwater Pollution Prevention Plan (SWPPP)), concrete placement preparation, and possibly miscellaneous concrete or grout production. Based upon material to be compacted and dust control for the duration of the proposed project, between 15 and 30 acre-feet of water may be used during construction. This water would be provided by the Twentynine Palms Water Agency. The availability of construction water would be verified prior to the issuance of a construction contract. Dewatering of shallow groundwater on the proposed project site is not anticipated to be necessary at this time.

Alternative Construction Schedule. Due to funding constraints, the project may be constructed in two phases, as summarized below.

- **Phase 1:** Construction of basin embankment slopes, basin outlet and inlet works, Split Rock Road improvements, and approximately 50 percent of the basin excavation. Construction of Phase 1 would occur in the 13-month period previously identified for the single-phase construction period, with a much lower equipment usage level.
- **Phase 2:** Complete remainder of basin excavation. Phase 2 would occur over six to 36 months, and would be funded through sale of excess sand and gravel material in lieu of a construction contract; the variable duration is due to this funding source.

Overall, the two-phase construction schedule described above is not anticipated to require additional equipment hours.

A.1.4.3 Operation and Maintenance

Operation and maintenance of the proposed project would include activities such as those listed below.

- Site grading and weed / brush control.
- Dust control through application of dust palliatives.
- Debris removal.
- Erosion and slope repair.
- Cleaning and graffiti removal on all structures.

Maintenance levels are not anticipated to increase from existing conditions as a result of this proposed project. As noted under the discussion of temporary disturbance areas, existing unpaved access roads on either side of Donnell Basin would continue to be used for maintenance access. The fence which currently surrounds the basin on the ROW boundary would be replaced or repaired to its current condition for the operational period. Debris removal would likely be accomplished through sand and gravel sale operations; this would be accomplished over time or through individual maintenance contracts. Materials such as

motor oil and lubricants would be used by inspection vehicles and equipment required for operational activities such as sediment removal and slope stabilization.

A.1.4.4 Project Design Features

The proposed project includes a number of design features that have been incorporated to avoid or reduce potential adverse environmental effects. These features are listed below.

- Dust palliatives will be used to control erosion and no landscaping would be required.
- Weed preventative measures would be implemented as allowed per State and local laws.
- A SWPPP to identify site design, pollution source control, and best management practices (BMPs) to prevent water quality degradation. Geotechnical studies will be required to properly design the retarding basins and evaluate groundwater conditions (i.e. whether shallow groundwater is present in excavation areas).

The measures listed above are project design features and will be implemented with the proposed project; these are not mitigation measures, or additional requirements considered necessary to avoid or minimize impacts.

A.1.5 Required Permits and Approvals

Construction and operation of the proposed project may require the discretionary actions and approvals listed below, per jurisdiction. State and federal Endangered Species Act (ESA) permits are listed below because the project site is within the geographic range of the desert tortoise, which is listed as threatened under both State and federal ESAs. However, due to land use on the site and surrounding area, it is unlikely that desert tortoise would be found on the site and that ESA permits would be required. The applicable regulatory agencies (US Fish and Wildlife Service [USFWS] and California Department of Fish and Wildlife [CDFW]) will make the final determinations as to whether ESA permits are required. In the absence of ESA permits, suitable measures will be developed to ensure that the project would not result in a take of desert tortoise, should a tortoise wander onto the site (e.g., pre-construction surveys and on-site biological monitoring). In addition, Clean Water Act Section 404 is listed below but may not be required if it is determined that the project site is non-jurisdictional, pending field work to conduct jurisdictional delineations.

Federal

- USFWS
 - Biological Opinion/Endangered Species Act/Section 7 Consultation
- United States Army Corps of Engineers (USACE)
 - Clean Water Act Section 404

State

- CDFW
 - Streambed Alteration Agreement/California Fish and Game Code Section 1600
 - Incidental Take Permit (if applicable)
- Native American Heritage Commission
 - Consultation on Sacred Areas to comply with State requirements

Regional

- Colorado River Regional Water Quality Control Board (RWQCB)
 - National Pollutant Discharge Elimination System (NPDES) Permit (SWPPP), if applicable under Section 404 of the Clean Water Act (as noted above, it is not anticipated that the project would affect jurisdictional waterways)
 - Water Quality Certification/Clean Water Act Section 401 (required for State jurisdictional waters, regardless of Section 404 applicability)

B. Environmental Determination

B.1. Environmental Factors Potentially Affected

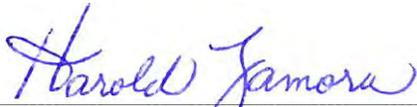
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" and requiring implementation of mitigation as indicated by the checklist on the following pages.

- | | | |
|--|---|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input checked="" type="checkbox"/> Hazards/Hazardous Materials | <input checked="" type="checkbox"/> Hydrology/Water Quality |
| <input checked="" type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources | <input checked="" type="checkbox"/> Noise |
| <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input checked="" type="checkbox"/> Transportation/Traffic | <input type="checkbox"/> Utilities/Service Systems | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

B.2 Environmental Determination

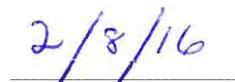
On the basis of this initial evaluation:

- I find that the Proposed Project could not have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.
- 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 pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the Proposed Project, nothing further is required.



Harold Zamora, P.E., Division Chief

Environmental Management Division
County of San Bernardino
Department of Public Works



Date

C. Evaluation of Environmental Impacts

C.1 Aesthetics

AESTHETICS		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d.	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

a. Would the project have a substantial adverse effect on a scenic vista?

LESS THAN SIGNIFICANT IMPACT. Construction of the proposed project would temporarily have an adverse effect on the scenic vista surrounding the project site due to construction activity and vehicles. However, construction is expected to occur over approximately 13 months; therefore, impacts from construction would be temporary. Operation of the proposed project would result in raising the height of the existing levee by approximately 10 feet. Although this is a permanent component of the proposed project, the change would occur to an existing land use and therefore would not significantly alter the existing landscape. In addition, the proposed project would not present permanent structures that would obstruct scenic views from State Route 62 (SR-62). Therefore, there would not be any substantial or permanent adverse effects during operation of the proposed project. As such, visual impacts associated with the proposed project would be less than significant.

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

LESS THAN SIGNIFICANT IMPACT. The proposed project would occur along SR-62, which is designated as an Eligible State Scenic Highway by the California Department of Transportation (Caltrans, 2013a). The status of a proposed state scenic highway changes from eligible to officially designated when the local governing body applies to Caltrans for scenic highway approval and then adopts a Corridor Protection Program (Caltrans, 2013b). Although SR-62 is not a State Scenic Highway as designated by Caltrans, San Bernardino County's 2007 General Plan designates SR-62 as a scenic route. This policy also states the County's desire to retain the scenic character of visually important roadways throughout the County (San Bernardino County, 2007). As noted above, visual impacts from construction would be temporary; and during operation of the proposed project, the increased height of the levee would not substantially alter the existing landscape and there would not be any permanent structures or changes in the existing elevation that would obstruct scenic views from SR-62. As such, visual impacts along SR-62 would be less than significant.

c. *Would the project substantially degrade the existing visual character or quality of the site and its surroundings?*

LESS THAN SIGNIFICANT IMPACT. The proposed project site currently consists of the existing Donnell Basin and the Twentynine Palms Channel. Surrounding land uses include churches, high schools, and residences. Since the project site currently consists of flood control facilities, the proposed improvements would not include permanent structures that would substantially alter nor degrade the existing visual character of the area. As discussed above, the height of the existing levee would be raised by approximately 10 feet. Although this is a permanent component of the proposed project, the increased height would occur to an existing land use and therefore would not significantly alter the visual character of the proposed project site and surrounding area.

During the construction period, the proposed improvements would introduce construction activities and equipment for approximately 13 months. However, this impact to the visual character of the area would be temporary and less than significant. During the operation period, maintenance activities would include grading, dust control debris removal, erosion and slope repair, and cleaning of all structures. As such, operation of the proposed project would not introduce permanent elements that would degrade the existing visual character. Therefore, impacts during the operation period would be less than significant.

d. *Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

NO IMPACT. Construction of the proposed project would include deepening of the existing interim detention basin, re-use and/or disposal of excavated sediments, construction of basin embankments, outlet works and spillway, installation of internal access roads, and alterations to the existing Twentynine Palms Channel and Split Rock Avenue crossing. None of these construction activities or components of the project would include a new source of light. Therefore, the proposed project would not introduce a new source of light or glare that would adversely affect day or nighttime views.

C.2 Agriculture and Forestry Resources

AGRICULTURE AND FORESTRY 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 Department 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:**

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

a. Would the project 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 (FMMP) of the California Resources Agency, to Non-agricultural use?

NO IMPACT. According to the San Bernardino County FMMP map, the proposed project site is not within the FMMP survey boundary (DOC, 2010). Therefore, construction of the proposed project would not convert designated Farmland and there would be no impact under this criterion.

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

NO IMPACT. The proposed project site is not located within a city or county agricultural zoning district; and according to San Bernardino County Williamson Act maps from 2012/2013, the proposed project site is within Non-Enrolled Land. As defined by the Department of Conservation, Non-Enrolled Land is land not enrolled in a Williamson Act contract and not mapped by the FMMP as Urban and Built-Up Land or Water (DOC, 2013). Therefore, construction of the proposed project would not conflict with Williamson Act contracts and there would be no impact under this criterion.

- c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timber-land (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?**

NO IMPACT. The proposed project site is not located on land that is zoned for forest land or timberland. Therefore, the proposed project would not conflict with existing zoning for forest land or timberland, and there would be no impact under this criterion.

- d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?**

NO IMPACT. The proposed project site is not located on forest or wilderness land, and the site is surrounded by urban development. Therefore, the proposed project would not conflict with existing zoning for forest land or timberland, and there would be no impact under this criterion.

- e. Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?**

NO IMPACT. The proposed project area is currently in use as an interim flood control detention facility; therefore, deepening the existing basin will not convert any agricultural land to non-agricultural uses nor would it convert any forest land to non-forest use. It is also not anticipated that the proposed project will involve other changes that would result in conversions to non-agricultural or non-forest uses on the project site or immediate surrounding vicinity. In addition, as discussed under Population and Housing (Section C.13), the proposed project would not be growth-inducing, and therefore, would not be expected to substantially induce the conversion of agricultural or forest land. Consequently, the proposed project would not involve other changes in the existing environment that could result in a conversion of Farmland, and there would be no impact under this criterion.

C.3 Air Quality

AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the project:**

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

LESS THAN SIGNIFICANT IMPACT. The Mojave Desert Air Quality Management District (MDAQMD) first adopted a Federal Particulate Matter (PM10) Attainment Plan (PMAP) in July 31, 1995 (MDAQMD, 1995). The PMAP states that "the air quality of the MDAQMD is impacted by both fugitive dust from local sources and occasionally by region-wide windblown dust during moderate to high wind episodes. This region-wide or "regional" event includes contributions from both local and distant dust sources which frequently result in violations of the National Ambient Air Quality Standards (NAAQS) that are multi-district and interstate in scope." It also states that "it is not feasible to implement control measures to reduce dust from regional wind events." Therefore, there are no measures that are applicable to the proposed project, and compliance with existing MDAQMD rules and regulations would ensure compliance with this plan.

The MDAQMD adopted the MDAQMD 2004 Ozone Attainment Plan (approved by the US Environmental Protection Agency (USEPA)), and has updated it with the MDAQMD Federal 8-hour Ozone Attainment Plan 2008 to demonstrate that the MDAQMD will meet the required federal ozone planning milestones and attain the 8-hour ozone NAAQS by June 2021 (MDAQMD, 2004; MDAQMD, 2008). There are no additional control measures for direct ozone precursor reductions required as part of the update. However, the MDAQMD is committed to having all applicable Federal Reasonably Available Control Technology (RACT) rules as proposed in their 8-hour RACT State Implementation Plan Analysis (RACT SIP Analysis) adopted in 2006 (MDAQMD, 2006). In addition, the MDAQMD updated and identified new measures in 2007, which will be adopted through 2014, as the State of California mandates including all feasible ozone precursor control measures. There are no measures that are applicable to the proposed project since the project includes no major stationary emission sources. If sand and gravel sales are implemented during project operation, the sand and gravel plant operator would be responsible for obtaining necessary MDAQMD permits for the anticipated screening plant and/or have applicable equipment permitted through the California Air Resources Board (CARB) portable equipment registration program (PERP).

Therefore, construction of the proposed project, with compliance with existing MDAQMD rules and regulations would not conflict with or obstruct applicable air quality plans.

b. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Construction of the proposed project would result in emissions of the following criteria air pollutants: volatile organic compounds (VOCs), nitrogen oxides (NOx), carbon monoxide (CO), particulate matter under 10 microns (PM10), particulate matter under 2.5 microns (PM2.5), and sulfur oxides (SOx). Emissions from construction would result from fuel combustion and exhaust from off-road equipment and on-road vehicle traffic, and fugitive dust from grading and vehicle travel on paved and unpaved roads.

For the purposes of environmental review of this type of an infrastructure project, the MDAQMD defines a substantial contribution to an existing or projected air quality violation as emitting air pollutants in excess of the thresholds shown in Table C.3-1. The MDAQMD allows the average daily emissions to be compared to the daily thresholds when the duration of a project is less than twelve months.

Table C.3-1. MDAQMD Significance Thresholds												
	Daily Emissions (lbs/day)						Annual Emissions (Tons)					
	NOx	VOC	CO	PM10	PM2.5	SOx	NOx	VOC	CO	PM10	PM2.5	SOx
MDAQMD Significance Thresholds	137	137	548	82	82	137	25	25	100	15	15	25

Source: MDAQMD, 2011.

Table C.3-2 summarizes average daily and the total unmitigated construction emissions from the proposed project and compares them with the MDAQMD significance thresholds. The only emissions controls assumed in the unmitigated emissions totals is the fugitive dust controls that are assumed to be required to meet the MDAQMD rules and regulations, which is the use of water to control emission from unpaved travel areas and earthmoving operations. Without mitigation, the proposed project's construction emissions would exceed the daily NOx and PM10 emissions significance thresholds established by the MDAQMD.

Table C.3-2. Estimated Unmitigated Construction Emissions												
	Daily Emissions (lbs/day)						Maximum Annual Project Emissions (Tons)					
	NOx	VOC	CO	PM10	PM2.5	SOx	NOx	VOC	CO	PM10	PM2.5	SOx
On-road Vehicles	78.15	2.90	16.59	2.58	1.95	0.12	11.88	0.44	2.52	0.39	0.30	0.02
Off-road Equipment	96.91	7.07	36.88	4.52	4.16	0.08	14.73	1.07	5.61	0.69	0.63	0.01
Fugitive Dust	--	--	--	100.34	17.87	--	--	--	--	15.25	2.72	--
Project Total	175.06	9.98	53.47	107.45	23.98	0.20	26.61	1.52	8.13	16.33	3.64	0.03
MDAQMD Significance Thresholds	137	137	548	82	82	137	25	25	100	15	15	25
Exceeds Significance Thresholds?	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No

Source: Appendix A.

Due to the proposed project's estimated NOx and PM10 emissions exceeding the MDAQMD daily significance thresholds, and in consideration of the nearest sensitive receptors at the Oasis Elementary

School being located within 1,000 feet of the project site, the following mitigation measures have been added to reduce the proposed project's NOx and PM10 emissions.

Mitigation Measures for Construction-Phase Air Quality

AQ-1 *Fugitive Dust Control.* The following dust control measures shall be implemented:

- a. The travel on unpaved areas will be minimized and traffic speeds on unpaved areas/roads shall be limited to 15 miles per hour for all on-road and off-road equipment.
- b. All onsite unpaved travel routes/roads shall be effectively stabilized using water at least three times daily, or by using non-toxic soil stabilizers that shall not increase any other environmental impacts including loss of vegetation. Proposed soil stabilizer(s) Material Safety Data Sheet (MSDS) and application strategy (method, frequency, and quantity) shall be provided to the San Bernardino County Flood Control District for approval prior to use.
- c. All material excavated or graded will be sufficiently watered to prevent excessive dust. Watering will occur as needed with complete coverage of disturbed areas.
- d. The excavated soil piles, if not covered, shall be watered at an adequate frequency, or sprayed with an environmentally safe chemical stabilizer, to create stabilized surfaces that will minimize wind erosion emissions.
- e. Construction activities that occur on unpaved surfaces shall be discontinued during windy conditions when those activities cause visible dust plumes that are transported beyond the site boundary or that remain visible within 400 feet of any occupied residence, school, or public recreation area, or that otherwise conflict with the requirements of the Mojave Desert Air Quality Management District Rule 403.2 (C)(2)(f) under rule defined high wind conditions (wind gusts exceeding 25 mph or average hourly winds exceeding 15 mph).
- f. A wheel-washing system shall be installed and used to remove bulk material from tires and vehicle undercarriages before vehicles exit the project site. Track-out on public paved roads shall not extend 25 feet or more from an active operation and track-out shall be removed at the conclusion of each workday.
- g. All areas to be excavated shall be watered prior to excavation to ensure that the excavated materials are moist, and hauled materials shall be moist while being loaded into or out of dump trucks.
- h. All haul trucks hauling soil, sand, and other loose materials to or from the project site shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).
- i. Drop heights should be minimized when loading into or unloading out of haul trucks, and gate seals should be tight on haul trucks.
- j. Disturbed areas shall be minimized, and after active construction activity has ceased, disturbed areas shall be stabilized using non-toxic soil stabilizers approved for project use and shall be revegetated as soon as possible after disturbance.
- k. Other fugitive dust control measures shall be implemented as necessary to comply with the requirements of the Mojave Desert Air Quality Management District Rules 401, 402, and 403.2 and City of Twentynine Palms Development Code §19.64.030.

AQ-2 *Off-road Equipment Mitigation.* The emissions from the onsite off-road construction equipment shall be controlled by implementing the following:

- a. All off-road construction diesel engines not registered under California Air Resources Board’s Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower or more and 750 horsepower or less, shall meet, at a minimum, the Tier 3 California Emission Standards for Off-road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, Section 2423(b)(1). If a Tier 3 or Tier 3-equivalent engine is not available for a particular item of equipment, Tier 2 compliant engines shall be allowed on a case by case basis, as determined by the San Bernardino County Flood Control District. Off-road equipment with diesel engines larger than 750 horsepower shall meet Tier 2 California Emission Standards.
- b. All equipment shall be turned off when not in use. Engine idling of all equipment shall be minimized.
- c. All equipment engines shall be maintained in good operating condition and in proposed tune per manufacturers’ specification.

These mitigation measures have been designed to provide feasible emissions control of NOx and PM10 emissions and comply with the requirements and intent of the San Bernardino County General Plan Policy CO 4.1, the San Bernardino County Development Code §83.01.040 Air Quality, and the City of Twentynine Palms Development Code §19.64.030 Clearing and Plant Removal (San Bernardino County, 2013; San Bernardino County, 2012; and City of Twentynine Palms, 2004).

Table C.3-3 summarizes average daily and the total mitigated construction emissions for the proposed project and compares them with the MDAQMD significance thresholds.

	Daily Emissions (lbs/day)						Annual Project Emissions (Tons)					
	NOx	VOC	CO	PM10	PM2.5	SO ₂	NOx	VOC	CO	PM10	PM2.5	SO ₂
On-road Vehicles	78.15	2.90	16.59	2.58	1.95	0.12	11.88	0.44	2.52	0.39	0.30	0.02
Off-road Equipment	37.99	3.12	36.88	1.71	1.58	0.08	5.77	0.47	5.61	0.26	0.24	0.01
Fugitive Dust	--	--	--	70.83	13.87	--	--	--	--	10.77	2.11	--
Project Total	116.14	6.02	53.47	75.12	17.39	0.20	17.65	0.91	8.13	11.42	2.64	0.03
MDAQMD Significance Thresholds	137	137	548	82	82	137	25	25	100	15	15	25
Exceeds Significance Thresholds?	No	No	No	No	No	No	No	No	No	No	No	No

Source: Appendix A.

As shown in Table C.3-3, the proposed project’s mitigated construction emissions would not exceed any of the significance thresholds established by the MDAQMD. Therefore, the proposed project’s construction impacts would be less than significant with mitigation.

Under the alternative construction schedule, the initial construction excavation would be limited to that necessary to construct the dam embankment, the concrete structures, and the outlet works. There would be no export from the site during the first year of construction, and the remaining excess material within the basin would be removed through a sand and gravel sales that would remove the material over a five-year period. Sand and gravel sales would require less activity in any given year, and the construction

impacts with Mitigation Measures AQ-1 and AQ-2 would remain less than significant. The mitigated average daily construction emissions may be similar to that shown above in Table C.3-3, but due to much shorter annual durations the annual construction emissions over the six years of initial construction and sand and gravel sales would be lower than that of the proposed project.

The proposed project would also require annual maintenance work. The ongoing annual emissions summarized in Table C.3-4 are generated from equipment and vehicles used during site grading and weed/brush control, dust control through application of dust palliatives, debris removal, erosion and slope repair, and cleaning and graffiti removal on all structures. All of these activities, except debris removal, will not increase from current levels. Debris removal activities would likely be accomplished through sand and gravel sale operations, and the emissions for these activities have been estimated. As shown in Table C.3-4, the proposed project's debris removal emissions would not exceed any of the significance thresholds established by the MDAQMD and would not require additional emissions mitigation measures. Therefore, the proposed project's maintenance impacts would be less than significant.

	Daily Emissions (lbs/day)						Annual Project Emissions (Tons)					
	NOx	VOC	CO	PM10	PM2.5	SOx	NOx	VOC	CO	PM10	PM2.5	SOx
On-road Vehicles	11.53	0.59	3.80	0.70	0.47	0.03	0.81	0.04	0.27	0.05	0.03	0.00
Off-road Equipment	26.95	2.07	10.42	1.38	1.27	0.02	1.89	0.14	0.73	0.10	0.09	0.00
Fugitive Dust	--	--	--	22.18	4.03	--	--	--	--	1.55	0.28	--
Project Total	38.48	2.66	14.22	24.25	5.76	0.05	2.69	0.19	1.00	1.70	0.40	0.00
MDAQMD Significance Thresholds	137	137	548	82	82	137	25	25	100	15	15	25
Exceeds Significance Thresholds?	No	No	No	No	No	No	No	No	No	No	No	No

Source: Appendix A.

c. Would the project 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. As shown in Table C.3-3, construction of the proposed project would not result in emissions of criteria pollutants that exceed CEQA significance thresholds established by the MDAQMD. Therefore, the proposed project would not contribute significantly to a cumulatively considerable net increase of any pollutants, and impacts are less than significant with mitigation.

As shown in Table C.3-4, the proposed project's maintenance emissions would not exceed any of the significance thresholds established by the MDAQMD. Therefore, the proposed project's maintenance would not contribute significantly to a cumulatively considerable net increase of any pollutants, and impacts would be less than significant.

d. Would the project expose sensitive receptors to substantial pollutant concentrations?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Receptors that may be impacted by the proposed project include residents adjacent to the project site and the Oasis Elementary and Twentynine Palms High schools located directly north of the project site and to the northwest of the project site, respectively. There is the potential for temporary high diesel particulate matter and fugitive dust

emissions during the proposed project's construction. While the predominate wind directions are away from the two schools, there is a church and residences that are located to the east of the project along the more predominate wind directions.

There is a strong potential that the project's fugitive dust emissions would carry valley fever spores (*Coccidioidomycosis*), which is endemic in the soils throughout most of the southwestern United States, including the project site location within the Mojave Desert. This fugitive dust transmitted disease can result in serious illness or even death. The incidence of reported valley fever cases in San Bernardino County is much lower than in the San Joaquin Valley which experiences the highest incidence rates within California, but there has been a rise in the trend in incidence rates in the County since 2001, from a low of 14 reported cases in 2001 to a high of 68 reported cases in 2010 (CDPH, 2014). The two primary measures to control this disease are fugitive dust controls to reduce the potential for airborne spores and the use of effective respirators for at risk occupations, such as construction workers. Considering the potential seriousness of this dust transmitted disease, appropriate mitigation to reduce fugitive dust exposures has been recommended.

Mitigation Measure AQ-2 would require the use of off-road equipment with Tier 3 compliant engines. This will reduce the diesel particulate matter (DPM) emissions by 60 percent or more in comparison to fleet average emissions (see Tables C.3-2 and C.3-3). A screening level risk analysis of the on-site off-road and on-road diesel engine exhaust DPM emissions indicates that the cancer risk from DPM would be well below 10 in a million and the chronic and acute hazard index would be well below 1 (see Appendix A). Therefore, the mitigated air toxics emissions impacts are less than significant and no additional emissions mitigation for air toxics emissions would be required.

To ensure that fugitive dust emissions and the associated exposure to particulate emissions and potential exposure to valley fever spores would be reduced to the maximum extent, Mitigation Measure AQ-1 (Implement Fugitive Dust Control Plan) is recommended. This recommended mitigation measure would reduce particulate emissions to the extent feasible in accordance with MDAQMD recommendations and San Bernardino County codes and policies. Implementation of Mitigation Measure AQ-1 would reduce the potential for temporary high fugitive dust exposures and minimize the risk of contracting valley fever by construction workers and area school children and residents. Therefore, with implementation of Mitigation Measures AQ-1 and AQ-2, the proposed project would result in less than significant impacts on sensitive receptors.

e. Would the project create objectionable odors affecting a substantial number of people?

LESS THAN SIGNIFICANT IMPACT. Some objectionable odors may be temporarily created during construction-related activities, such as from diesel exhaust and paving activities. These odors would not affect a substantial number of people and would only occur in localized areas. Therefore, impacts related to objectionable odors would be less than significant.

C.4 Biological Resources

BIOLOGICAL RESOURCES				
Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

Background and Methods

San Bernardino County Flood Control District Ecological Resource Specialist Brandy Wood prepared a biological resources report for the Donnell Basin Project. The report is included as an appendix to this document (Appendix B). The report includes a literature review and a search of the California Natural Diversity Database (CNDDDB) for the Twentynine Palms United States Geological Survey (USGS) 7.5-minute topographic quad. In addition, the report describes a field survey by Wood and Ecological Resource Specialist Theresa Sims on November 20, 2012. The purpose of the visit was to assess the overall site conditions of the Donnell Basin project site and to identify any special-status species or sensitive biological resources present. Transects spaced 30 feet apart were walked over the entire Donnell Basin site to assess the area for desert tortoise and burrowing owl sign.

The biological resources report addresses the permanent disturbance area of Donnell Basin but does not address the optional disturbance area to the south (Figure 1) which was added to the project description after the report had been written. Aspen biologist Jared Varonin conducted a reconnaissance level survey of Donnell Basin as well as the optional disturbance area on June 12, 2013 to document the resources present, to identify suitable habitat for special-status species, and to assess the site for jurisdictional features. Mr. Varonin drove all existing roads within the project site, walked throughout the floor of Donnell Basin, and visually surveyed the remainder of the site. Protocol level surveys for desert tortoise, burrowing owl, and special-status plants were not deemed necessary or conducted. CNDDDB records of the Indian Cove, Queen Mountain, Sunfair, Twentynine Palms Mountain, and Valley

Mountain USGS 7.5-minute topographic quads were reviewed and considered in this analysis. These topographic quads were considered in this analysis because of their close proximity to the project site and the similar habitats present.

Habitat within the Donnell Basin site is largely disturbed with some ruderal (weedy) vegetation present, such as tree tobacco (*Nicotiana glauca*) and jimsonweed (*Datura wrightii*). There are scattered native shrubs within the basin such as smoketree (*Psoralea argophylla*), palo verde (*Parkinsonia* sp.), and cheesebush (*Ambrosia salsola*). There is also an isolated patch of creosote bush scrub within the permanent impact area that is dominated by creosote bush (*Larrea tridentata*). A total of 8.48 acres of creosote bush scrub within the permanent disturbance area will be removed along with 21.59 acres of ruderal vegetation. Temporary impacts will result in a temporary loss of 2.34 acres of creosote bush scrub and 3.85 acres of ruderal vegetation.

The optional disturbance area to the south is covered by creosote bush scrub dominated by creosote bush, white bursage (*Ambrosia dumosa*), white rhatany (*Krameria grayii*), and several species of cholla (*Cylindropuntia* spp.). There are approximately 13.35 acres of creosote bush scrub that would be eliminated if the optional disturbance area is used. The project site and surrounding areas are highly impacted by human influences including flood control activities, off-road use and homeless encampments.

During these reconnaissance-level surveys no special-status plants were seen on the project site or in the vicinity. Most of the special-status plants in the project vicinity grow in specialized habitats (seeps, rocky slopes, large boulder fields, and on limestone) and would not be expected in the project site. Two special-status plants have a low potential of occurrence on the project site: Little San Bernardino Mountains linanthus (*Linanthus maculatus*) and Mojave menodora (*Menodora spinescens* var. *mohavensis*). These special-status plants are addressed below.

During the field surveys no special-status animals were seen on the project site or in the vicinity. Most of the special-status animals in the project vicinity live in specialized habits (palm oases, steep rocky canyons, Joshua tree woodlands) and would not be expected in the project site. Some special-status wildlife species may fly over the site or forage on the site but the project would not impact those species and they are not addressed further. Special-status animals, with potential to be found in the project area are addressed below.

a. Would the project 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 Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS)?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The project has a low likelihood of adversely affecting special-status species. No special-status species were found during reconnaissance level surveys but several special-status animals may be present in the project site, at least seasonally. These species are discussed below:

Desert tortoise (*Gopherus agassizii*)

The desert tortoise is listed as a threatened species under the California Endangered Species Act (CESA) and federal Endangered Species Act (ESA). No desert tortoise or sign (shells, bones, scutes, scats, burrows, pellets, tracks, egg shell fragments, courtship rings, drinking sites, etc.) of desert tortoise were found in the project site. Desert tortoises are known from the areas north of Joshua Tree National Park between Yucca Valley and Twentynine Palms (CDFW, 2013). The density of tortoises in this area has

been estimated to be between 20 and 50 tortoises per square mile (CDFW, 2013). The nearest mapped population is about 0.85 mile to the northwest of the project (CDFW, 2013).

While no desert tortoises were found on the site during recent survey, tortoises may occur at low density in the project vicinity. The site is not within critical habitat for the desert tortoise as designated by the USFWS (USFWS, 1994). The nearest designated critical habitat is in Joshua Tree National Park, about 2.5 miles to the southeast (USFWS, 1994). The project would not affect designated critical habitat for desert tortoise.

The current land use as a regularly maintained fenced flood control facility, adjacent paved highway, and surrounding land uses (developed and rural residential areas) all contribute to relatively low desert tortoise habitat value. Based on our field observations, the low habitat value, and the unfavorable surrounding lands uses, it was concluded there is only a low likelihood that desert tortoise may occur on the site. However, it is possible that a desert tortoise could move onto the site during or prior to construction.

Mitigation Measure BIO-1 would avoid potential take or other adverse impacts to desert tortoise by (1) requiring a pre-construction clearance survey of the project site, (2) requiring the installation and maintenance of an exclusion fence to remain in place during construction, and (3) requiring consultation with USFWS and CDFW (if a tortoise is found on the site).

Mitigation Measure BIO-4, Bio-5, and BIO-6 will further minimize any potential for impacts to desert tortoise by training construction personnel to identify and avoid desert tortoises, keeping the site clean to avoid attracting tortoise predators such as common ravens (*Corvus corax*) and coyotes (*Canis latrans*), and not allowing domestic animals on the site that may harm tortoises.

Burrowing owl (*Athene cunicularia*)

The burrowing owl is a state species of special concern. Burrowing owls are typically found in grasslands or open shrublands, but generally not in vegetation where shrub or tree cover obscures views from burrow entrances. In southern California, burrowing owls tend to be more numerous during winter than during the breeding season because local owls tend to stay in the area while owls from farther north migrate into the area for the winter. No active burrows or owl sign were seen on the project site but there were suitable potential burrows present. There is a low potential for burrowing owl occurrence on the site and although they were not observed on the site they could move onto the site prior to construction, especially during the winter.

Mitigation Measure BIO-2 would avoid impacts and prevent take of burrowing owls by requiring a pre-construction burrowing owl survey of the site. If burrowing owls are found on the site during the nesting season, work would not start until after the nesting season is over or no work would take place within a buffer designated by a qualified biologist in coordination with the CDFW. If burrowing owls are found on the site outside of the nesting season, the CDFW will be consulted and the qualified biologist may be authorized to exclude them from the site using passive exclusion methods described in the most recent CDFW staff report on burrowing owl mitigation (CDFG, 2012).

Nesting birds

The federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Sections 3503, 3503.5, and 3513 prohibit take of migratory birds, including eggs or active nests, except as permitted by regulation (e.g., licensed hunting). "Migratory bird" is broadly defined to apply to most native bird

species, with the exception of a few non-native birds such as European starling. Most migratory bird species have no other special conservation status.

Most adult birds would normally avoid grading equipment by flying away. But, depending on schedule, clearing for the proposed project could destroy nests and eggs if birds were nesting on the site during these activities. Mitigation Measure BIO-3 would avoid impacts to nesting birds and would prevent take of migratory birds, nests, and eggs by requiring either a pre-construction nesting bird survey for any work between February 15 and August 15, or avoidance of grading or clearing during the nesting season. Several special-status birds may forage in the project site including prairie falcon (*Falco mexicanus*), loggerhead shrike (*Lanius ludovicianus*), and Bendire's thrasher (*Toxostoma bendirei*). Impacts to the foraging habitat of these species or any other special-status birds would be less than significant because of the small amount of foraging habitat being removed as part of this project and the vast undisturbed foraging habitat in the vicinity.

Little San Bernardino Mountains linanthus (*Linanthus maculatus*)

Little San Bernardino Mountains linanthus is an annual that grows in sandy soils usually on flats and in broad undisturbed washes. It is known from a broad wash near Indian Cove within six miles of the project site (CDFW, 2013). It has a California Rare Plant Rank (CRPR) of 1B.2 (rare in California and fairly threatened). It has a low potential to be found on the project site because of disturbance from flood control maintenance activities, periodic scouring floods, and extensive development in the immediate vicinity. If it were to occur as a sporadic wash-down from more suitable habitat upstream it would be in such small numbers that it would be less than significant.

Mojave menodora (*Menodora spinescens var. mohavensis*)

Mojave menodora is a deciduous shrub that grows on gravel and rocky substrates primarily in canyons but also in washes. It is known from just over three miles to the southeast, near the entrance to Joshua Tree National Park (CDFW, 2013). It has a CRPR of 1B.2 (rare in California and fairly threatened). Mojave menodora is a large conspicuous shrub that would have been found during the surveys if present. There is a low potential that a limited number of individuals may have been overlooked during the surveys or that one may establish as a waif or sporadic wash-down from more suitable undisturbed habitat upstream. Impacts to a limited number of individuals would be less than significant.

Mitigation Measures

- BIO-1** Desert tortoise:
- A. A qualified desert tortoise biologist will survey the site prior to initial site disturbance to verify that no desert tortoises are present.
 - B. A temporary desert tortoise exclusion fence will be constructed around the project site perimeter to prevent desert tortoises from entering the site during construction. The existing chain-link fence around Donnell Basin may be used if it is retrofitted to eliminate gaps between the bottom of the fence and the ground. If project activities extend into the optional disturbance area south of Donnell Basin, then that area will also be fenced. The fence will be maintained throughout construction to ensure there are no gaps that would allow a tortoise to enter the site.
 - C. If a desert tortoise is found within the project site during construction, then any project activities that could affect the tortoise will halt pending consultation with the California

Department of Fish and Wildlife (CDFW) and the US Fish and Wildlife Service (USFWS). No one will be authorized to handle desert tortoises, except under authorization by the CDFW and the USFWS or to move a tortoise out of imminent danger, such as off of a paved road.

BIO-2 *Burrowing owl:* A qualified biologist will survey the site in advance of vegetation and soil clearing to determine burrowing owl presence or absence. This survey may be done concurrently with the desert tortoise survey, above. If one or more burrowing owls are present on the site outside of the nesting season (September 1 to January 31), then the California Department of Fish and Wildlife (CDFW) will be consulted and the qualified biologist may be authorized to exclude them from the site using passive exclusion methods described in the most recent CDFW staff report on burrowing owl mitigation (CDFG, 2012). If burrowing owls are present on the site during nesting season (February 1 through August 31), then construction will be either be postponed until nesting is completed, or no disturbance will be allowed within an appropriate buffer area to be established by a qualified biologist in accordance with the CDFW staff report on burrowing owl mitigation (CDFG, 2012).

BIO-3 *Nesting birds:* One of the two measures below will be implemented to prevent take of protected birds or their nests.

- a. Vegetation removal and initial grading will be completed outside the breeding season (i.e., no removal of potential nesting habitat from February 15 through August 15), or
- b. Prior to beginning vegetation removal, but after survey flagging is in place marking the limits of grading, a qualified biologist will confirm that no birds are nesting in or adjacent to areas to be disturbed. If native birds are nesting on the site, then construction will be postponed until nesting is completed or the qualified biologists will designate appropriate avoidance buffers around nests to protect nesting birds. No project related disturbance will be allowed within these buffers.

BIO-4 *Environmental training:* Environmental training will be given by a District Ecological Resource Specialist or qualified biologist to all construction crews and contractors prior to starting work on the project. The environmental training will include a review of the special-status species and other sensitive resources that could exist in the project site and vicinity, the locations of the sensitive biological resources, their legal status and protections, and mitigation measures to be implemented for avoidance of these sensitive resources. A record of all personnel trained will be maintained.

BIO-5 *Animals:* No pets will be permitted in the project site. Workers will not be permitted to feed, harm, approach, harass, or handle wildlife at any time, except to move animals out of harm's way, and only as directed by a District's Ecological Resource Specialist or qualified biologist.

BIO-6 *Trash, refuse, concrete, and other materials:* All trash and food materials will be properly contained within vehicles or closed refuse bins while on the site, and will regularly be removed from the site (at least on a weekly basis) for proper disposal. No raw cement, concrete or washings thereof, asphalt, paint, oil, solvents, or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources,

shall be disposed of on-site or allowed to spill onto soil. Cleanup of any spilled material shall begin immediately.

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

NO IMPACT. There is no riparian habitat or other sensitive natural community within the project site or the surrounding area. The two types of vegetation present within the project site are ruderal (or weedy) vegetation within the existing flood control facility and native creosote bush scrub vegetation in the undeveloped land to the south.

c. Would the project 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.) either individually or in combination with the known or probable impacts of other activities through direct removal, filling, hydrological interruption, or other means?

NO IMPACT. There are no wetlands within the project site or surrounding area. However, Twentynine Palms Channel (including Donnell Basin) is a mapped ephemeral. The channel originates in Fortynine Palms Canyon to the west, crosses the project site from west to east, and loses its defined bed and bank as it approaches Dale Dry Lake over fifteen miles to the east. The ephemeral channel is not expected to meet federal criteria as waters of the United States due to lack of surface hydrology confluence with jurisdictional waters.

This blue line channel and portions of the existing flood control basin are jurisdictional waters of the state under section 1600 of the State Fish and Game Code. Since the project would impact these state jurisdictional features, agency notification would be needed prior to initiation of the project.

d. Would the project 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 wildlife nursery sites?

LESS THAN SIGNIFICANT. The project site is surrounded largely by developed lands. The southern margin of the project site adjoins SR 62 which is a paved four lane highway. In addition, there are paved roads on the west, north, and east edges of the project site. These paved roads surrounding developed areas impede wildlife passage. Donnell Basin and Twentynine Palms Channel are fenced with a chain-link fence that limits large wildlife passage through the area. The project would not affect the ability of wildlife to move through the area.

Native species may use the project site as a nursery (breeding) site. Many species of birds may nest within the project site. Native birds such as mourning doves (*Zenaida macroura*) and house finches (*Carpodacus mexicanus*) nest in shrubland vegetation while other birds such as killdeer (*Charadrius vociferus*) and lesser nighthawks (*Chordeiles acutipennis*) nest on the ground. Small mammals such as kangaroo rats (*Dipodomys* sp.) and California ground squirrels (*Spermophilus beecheyi*) dig burrows into the ground and use existing burrows to give birth to and raise young. Reptiles such as side-blotched lizards (*Uta stansburiana*) and common kingsnakes (*Lampropeltis getula*) also use burrows and seek refuge under debris and rocks to lay eggs. Nesting birds are protected by MBTA and California Fish and Game Code and are addressed. The other animals using the project site are common species that are found throughout the project vicinity and the region and impacts to these animals and their nursery sites would be less than significant.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Chapter 19.64 of the City of Twentynine Palms Development Code (2004) regulates hillside grading, clearing and plant removal. One of the purposes of this code is to “preserve and protect desert plants.” The code applies to all projects on parcels of one acre or greater in size, being cleared of natural vegetation to provide for the installation of building pads, driveways, landscaping, agriculture or other use allowed in the underlying zone. The code appears to be applicable to the proposed project; therefore the site may only be cleared after issuance of a building permit or a grading permit, issued by the City’s Building Officials.

The City Development Code requires that after the completion of construction, the site must be stabilized to prevent soil erosion and fugitive dust. Mitigation Measure AQ-7 would comply with the City Development Code by requiring that all disturbed areas be stabilized with a non-toxic soil stabilizer approved for project use and shall be revegetated as soon as possible after disturbance. Mitigation Measure BIO-7 would further require that the seed mix be used to stabilize the soil in the temporary impact areas and that it be made up of fast-germinating native seed mix that would stabilize the soil quickly, create wildlife forage, and provide some wildlife cover.

The City Development Code also protects wildlife corridor linkages and sensitive habitats: mesquite dunes, mesquite dunes bosque, and playa lakebed. The project site is not within these mapped preservation areas.

Section 88.01.060 (Desert Native Plant Protection Ordinance) of the County of San Bernardino Development Code (2007) regulates the removal or harvesting of specified desert native plants to preserve and protect the plants and to provide for the conservation and wise use of desert resources. Section 88.01.030 of the Development Code states that government owned lands; including lands owned by the United States, State of California, or local governmental entity are exempt from the Development Code. Therefore, the Desert Native Plant Protection Ordinance does not apply to this project.

Mitigation Measures

BIO-7 Native plants:

- a. All areas temporarily disturbed during project construction, that are not expected to be impacted by on-going maintenance such as unpaved access roads and the basin floor, will be hydroseeded with a seed mix composed of native plants found in the adjacent plant community. Consistent with the City of Twentynine Palms Development Code, some of the native species used in the seed mix will be fast-germinating species such as annuals and grasses to reduce soil erosion and dust. Other shrub species will also be included to create wildlife habitat. Species recommended for inclusion in the hydroseed mix include desert needlegrass (*Stipa speciosa*), Indian ricegrass (*Stipa hymenoides*), six-week fescue (*Vulpia octoflora*), cheesebush (*Ambrosia salsola*), all scale (*Atriplex polycarpa*), brittlebush (*Encelia farinosa*) and various native desert annuals.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or State habitat conservation plan?

NO IMPACT. The project site lies within the limits of the West Mojave Plan (WEMO), a pending habitat conservation plan (HCP) pursuant to the federal ESA and an amendment to the California Desert Conservation Area (CDCA). The WEMO covers over nine million acres in five counties with the purpose of creating a comprehensive strategy to conserve and protect the desert tortoise and nearly 100 other sensitive species, as well as the natural communities in which they reside.

In March 2006 the BLM issued a Record of Decision (ROD) for the WEMO Final Environmental Impact Statement. However, the ROD addressed only the BLM's amendment to the CDCA Plan, and it did not include actions proposed by State and local governments for non-federal lands. The HCP has not been completed and would require greater specificity for local governments to obtain incidental take permits under the State and Federal ESAs.

Another conservation plan, the Desert Renewable Energy Conservation Plan (DRECP) is in preparation. This plan once completed would help provide effective protection and conservation of desert ecosystems while allowing for the appropriate development of renewable energy projects. The DRECP is not applicable to other activities, including flood control projects such as the Donnell Basin project.

C.5 Cultural Resources

CULTURAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

Background

The Donnell Basin project area consists of a Permanent Disturbance Area (30 acres), an Optional Disturbance Area (13.38 acres), and a Temporary Disturbance Area (6.2 acres). The project area lies within the Morongo Basin, a narrow region of the high Mojave Desert of southern California. It is located in a major transportation corridor near a spring, the Oasis of Mara, and a lithic raw material source. The Oasis of Mara is situated 1.15 miles southeast of the project area and was an important source of water for the Serrano and Chemehuevi tribes. It was also the location of gold mining activities during the late-nineteenth and early-twentieth century. Archaeological sites associated with the prehistoric and historic use of the Oasis of Mara, such as temporary campsites, may be encountered in the project area below the present ground surface. Prehistoric and historic trails, including trade routes, wagon routes, and automobile routes, are documented within a one-mile radius of the project area. Archaeological resources associated with these trails may include pot drops, cairns, cleared circles, and historic refuse. Construction personnel working on early flood control projects in the Donnell Basin during the 1950s and 1960s may have also left behind trash deposits. The following conclusions are based on the Cultural Resources Identification and Evaluation report prepared by Aspen Environmental Group (May 2014) and the Built Environment Cultural Resources Compliance Report prepared by Roger Hatheway of the San Bernardino County, Department of Public Works (May 2014).

a. Would the project cause a substantial adverse change in the significance of an historical resource as defined in §15064.5 [§15064.5 generally defines historical resource under CEQA]?

NO IMPACT. No significant or potentially significant historical resources were identified in the built environment cultural resources investigations performed for the project study area. Adjacent buildings have been formally evaluated for California Register of Historical Resources (CRHR) eligibility, however none are eligible. No impacts to these resources are anticipated. The historic Chemehuevi cemetery is located approximately 0.7 miles southeast of the proposed project location and has not been formally evaluated, but no impacts are anticipated to this resource due to the distance from the project area. Therefore, the project would not cause a substantial adverse change in the significance of an historical resource.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Based on a review of site records provided by the San Bernardino Archaeological Information Center (SBAIC) and a pedestrian survey of the Permanent, Optional, and Temporary Disturbance Areas conducted in June 2013 and March 2014 by the San Bernardino County Archaeologist and a Cultural Resources Specialist at Aspen Environmental Group, there are no archaeological resources located on the surface of the project area. Therefore, the project will not have any direct or indirect (visual, noise/vibration, dust) impacts on any significant archaeological resources. However, due to the proximity (approximately 0.9 miles) of the project area to the Oasis of Mara, there is a possibility cultural materials are present below the modern ground surface.

Should significant subsurface prehistoric or historic archaeological resources be inadvertently discovered during construction, the evaluation of any such resources should proceed in accordance with the criteria outlined in CEQA guidelines (Public Resources Code §21083.2), and in accordance with the County of San Bernardino General Plan (Section V, Conservation Element, Goal CO. 3). Specifically, all work must be halted in the immediate vicinity of the cultural resource found until a qualified archaeologist can assess the significance of the resource. Implementation of Mitigation Measures CR-1 and CR-2 would reduce this impact to a less-than-significant level because any previously unrecorded or unknown archaeological resource discovered during the course of construction would be subsequently avoided or provided proper treatment.

Mitigation Measures

CR-1 If previously unidentified cultural resources are unearthed during construction activities, construction work in the immediate area of the find shall be halted and directed away from the discovery until a qualified archaeologist assesses the significance of the resource. The archaeologist, in consultation with the San Bernardino County Flood Control District, shall make the necessary plans for treatment of the find(s) and for the evaluation and mitigation of impacts if the finds are found to be historically significant according to the California Environmental Quality Act (California Environmental Quality Act Guidelines Section 15064.5 (a)).

CR-2 Prior to ground disturbing activities, all construction personnel shall be trained, by a qualified archaeologist, regarding the recognition of possible buried cultural resources (i.e., prehistoric and/or historical artifacts, objects, or features) and protection of all archaeological resources during construction, prior to the initiation of construction or ground-disturbing activities. Training shall inform all construction personnel of the procedures to be followed upon the discovery of cultural materials. All personnel shall be instructed that unauthorized removal or collection of artifacts is a violation of State law.

c. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Surface disturbing actions in areas known to contain scientifically significant fossils (sedimentary geologic formations) may produce adverse impacts to nonrenewable paleontological resources (State CEQA Guidelines, 14 CCR Sections 15064.5[3] and 15023; State CEQA Guidelines Appendix G, Section V, Part C). These impacts vary depending on the depth and lateral extent of ground disturbance. Activities that disturb only the ground surface may

result in impacts to surface fossils if they result in crushing and fragmentation beyond repair. Activities that disturb both the surface and subsurface may result in impacts to fossils that are located on the surface and preserved in subsurface sediments.

Based on mapped geology available data, the potential for effects on fossil resources is low at the surface of the project but may be substantially higher shallowly subsurface. Project activities not related to earthmoving are not expected to have a paleontological impact, because the surface of the project has been surveyed and determined to be barren of fossils. Direct impacts to paleontological resources concern the physical destruction of fossils, usually by human-caused ground disturbance. Indirect impacts to paleontological resources typically concern the loss of resources to theft and vandalism resulting from increased public access to paleontologically sensitive areas.

Implementation of mitigation measures PAL-1 through PAL-5 would ensure that impacts to paleontological resources are less-than-significant.

Mitigation Measures

PAL-1 Retention of a qualified paleontologist (Principal Investigator) and the preparation of a Paleontological Resources Management Plan (PRMP). Prior to the initiation of construction activities, a qualified paleontologist shall be retained to develop a PRMP for this project. This PRMP shall contain explanations of project geology, paleontological sensitivity, and procedures that will serve to comply with the State and County of San Bernardino's requirements in order to minimize or eliminate potential impacts to significant paleontological resources. Any available geotechnical or soils data, construction grading plans, and a construction schedule should be provided to project paleontologists in order to ensure the most accurate data is used to determine monitoring procedures and locations. The qualified paleontologist shall participate in a pre-construction meeting with the San Bernardino County Department of Public Works staff and construction contractors for this project to ensure an understanding of any mitigation measures required during construction, and to establish proper communication procedures. Spot-checking to Full-time paleontological monitoring is recommended when, or if the project activities will impact Quaternary older alluvium. This will be discussed in the PRMP based on the most current available data.

The County of San Bernardino defines a qualified paleontologist as:

- Education: An advanced degree (Masters or higher) in geology, paleontology, biology or related disciplines (exclusive of archaeology).
- Professional experience: At least five years professional experience with paleontological (not including cultural) resources, including the collection, identification and curation of the resources.

PAL-2 *Worker environmental awareness training prior to the commencement of ground disturbance.* Before the initiation of ground disturbing activities, all construction personnel shall be trained regarding the recognition of possible subsurface paleontological resources and protection of all paleontological resources during construction. Training shall inform all construction personnel of the procedures to be followed upon the discovery of paleontological resources. This training should emphasize general paleontological items, including the paleontology and geology of the area, and should include pictures of typical fossils that can be found during construction,

including vertebrate remains, invertebrates, and trace fossils. This training should emphasize applicable state, federal, and local laws, and include information on what to do in case an unanticipated discovery is made by a worker. All construction personnel should be informed of the possibility of encountering fossils, and instructed to immediately inform the field supervisor if any bones or other potential fossils are unearthed in the project area and a paleontological monitor is not present (for example, if a sensitive formation is encountered subsurface that is not mapped at the surface, thus not necessitating the presence of a paleontological monitor for this work). In such a case, workers should immediately cease all activity within a 20 foot radius of the discovery site and notify the Construction Manager. The qualified paleontologist shall be called to assess the find in order to examine and evaluate the fossils.

PAL-3

Paleontological monitoring in areas of moderate to high geologic sensitivity. Paleontological monitoring of earthmoving activities will be conducted on an as-needed basis, as described in the project Paleontological Resources Management Plan (PRMP), by the project qualified paleontologist during all earthmoving activities that may expose Quaternary older alluvium, and in accordance with San Bernardino County Museum recommendations and County of San Bernardino regulations. Earthmoving activities in areas of the project area where previously undisturbed strata will be buried but not otherwise disturbed will not be monitored. The project paleontologist shall inspect initial ground disturbance, and will have the authority to reduce monitoring once he/she determines the probability of encountering fossils has dropped below an acceptable level. Paleontological monitors shall be equipped to salvage fossils as they are unearthed, to avoid construction delays, and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. Monitors shall be empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Monitoring is not necessary if Quaternary older alluvium is not impacted, or if the qualified paleontologist determines that Quaternary older alluvium encountered is not productive for fossils.

Paleontological resource monitoring of construction excavations involves field inspections of trenches, mass grading, spoils piles and all visible, exposed for occurrences of freshly exposed fossil remains. During construction excavation activities, the monitoring schedule and specific locations that can be inspected are dictated by field conditions including the number and locations of heavy equipment in the cut and amount of excavation activity.

PAL-4

Recovery of fossils. When fossils are discovered, the qualified paleontologist (or paleontological monitor) shall recover and fully document them. In the instance of an extended salvage period, the paleontologist shall work with the construction manager to temporarily direct, divert, or halt earthwork to allow recovery of fossil remains in a timely manner. If the find is too large to be managed by one monitor, additional assistance will be called upon to expedite the process. Because the potential for the recovery of small fossil remains, such as isolated mammal teeth, as determined by a qualified paleontologist, it may be necessary to collect bulk samples (up to 6,000 pounds) of sedimentary rock matrix. Screenwashing will only occur in the event of a significant discovery. The firm hired to conduct the paleontological monitoring should consult immediately with the County of San Bernardino Department of Public Works prior to collecting any bulk samples. Scientifically significant fossils of microscopic size

consisting of vertebrates, invertebrates, plants, or trace fossils, may be located in sediments that produce significant finds. The locations of any significant discoveries should be sampled and washed on the project site, out of the way of construction activity, for maximum efficiency. The resultant matrix should be picked in the paleontological laboratory in order to fully document the microfaunal or microfloral diversity.

Paleontological monitors should always use caution when making decisions about significance in the field, and collect fossils if they are unsure of their significance. For example, when monitoring construction sites it is often difficult to see the full extent of a fossil being salvaged because it is collected partially encased in sedimentary matrix and as a result it may not be possible to determine the significance of a fossil specimen until it has been partially prepared. Generally, bone fragments lacking identifiable features (processes or definable skeletal structures) should not be collected, or should be discarded or used for educational or public outreach purposes if they are found to be non-significant once they have been partially prepared in the laboratory.

PAL-5

Fossil preparation, curation and reporting. Fossil remains collected during monitoring and salvage shall be cleaned, repaired, sorted, and catalogued as part of the mitigation program. When potentially scientifically significant fossil discoveries are made by paleontological monitors, they should be quickly and professionally explored, assessed and evaluated in order to minimize construction delays, and the Principal Investigator should be notified immediately. Additional paleontologists should be brought in to assist with the salvage as needed. Salvages may consist of the relatively rapid removal of small isolated fossils from an active cut, to hand quarrying of larger fossils over several hours, to excavations of large fossils or large numbers of smaller fossils from a bone bed over several days. The duration of each excavation is determined by the size, preservation, and number of fossils at each locality, and all excavations must be carried out in consultation with the project Construction Manager. As noted in *PAL-4*, should fossils extend beyond the project boundaries, the County of San Bernardino Department of Public Works shall be consulted in order to determine the feasibility of recovery.

Following fossil specimen preparation, all fossils should be inventoried and identified to taxon and element by a technical specialist, as necessary. Identification should be to the lowest taxonomic level possible. All fossils should be labeled with field locality number, collector, date of collection, taxon, and element description at a minimum. The properly inventoried fossil collection should then be analyzed taxonomically, taphonomically, biostratigraphically, and as appropriate depending upon the nature of the fossil collection and requirements of the designated repository. All data, including the results of the analysis and research on the fossil collection, should be compiled along with the fossil specimen inventory and detailed paleontological locality forms, maps and photos for inclusion in the paleontological mitigation report. The paleontological mitigation report should be prepared in accordance with industry standard reporting specifications and requirements and any contracted repositories (if applicable) upon the completion of field work, within 90 days of the completion of field work, or as negotiated on consultation, in compliance with San Bernardino County regulations and the requirements stipulated by the San Bernardino County Museum.

A final summary report shall be completed that outlines the results of the mitigation program. This report shall include discussions of the methods used, stratigraphic

section(s) exposed, fossils collected, photographs, and significance of recovered fossils. A qualified paleontologist shall prepare a report of findings made during all site grading activity with an appended itemized list of fossil specimens recovered during grading (if any). The report shall contain a report of findings made during all site grading activities and an appended itemized list of fossil specimens recovered during grading (if any) and proof of accession of fossil materials into the pre-approved museum repository. In addition, all appropriate fossil location information shall be submitted to the San Bernardino County for incorporation into their Regional Locality Inventories. All fossil specimens shall be curated at the San Bernardino County Museum in accordance with their standards and stipulations.

d. Would the project disturb any human remains, including those interred outside of formal cemeteries?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. A literature review conducted at the SBAIC and a pedestrian survey of the Permanent and Optional Disturbance Areas did not identify known cemeteries or archaeological sites with human remains within the project area. Thus, the project will not disturb any known human remains. If human remains are inadvertently discovered during construction, work in the vicinity should halt and the San Bernardino County Coroner should be notified within 24 hours of the find. If the remains are determined to be Native American, the coroner will contact the Most Likely Descendent (MLD). Protocol outlined by the Native American Heritage Commission (NAHC) (1991) and in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill (SB) 927) and SB 447 (Chapter 44, Statutes of 1987) will guide treatment of the human remains and NAHC and MLD notification. In the unlikely event of an accidental discovery of any human remains, Mitigation Measure CR-3 would be implemented to ensure that impacts are less than significant.

Mitigation Measure

CR-3 If human remains are unearthed during construction activities, construction work in the immediate area of the discovery shall be halted and directed away from the discovery until the County coroner can determine whether the remains are those of a Native American. If they are those of a Native American, the following would apply:

- a. The coroner shall contact the Native American Heritage Commission.
- b. If discovered human remains are determined to be Native American remains, and are released by the coroner, these remains shall be left in situ and covered by fabric or other temporary barriers.
- c. The human remains shall be protected until the County, the land owner, and the Most Likely Descendant (MLD) appointed by the Native American Heritage Commission come to a decision on the final disposition of the remains.

According to the California Health and Safety Code, six (6) or more human burials at one (1) location constitute a cemetery (Section 8100), and willful disturbance of human remains is a felony (Section 7052).

C.6 Geology and Soils

GEOLOGY AND SOILS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic groundshaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Be located on geologic units 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

a. Would the project 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? Refer to Division of Mines and Geology Special Publication 42.**

NO IMPACT. The project is located in a seismically active area of southern California, and there are several earthquake fault zones identified within the Twentynine Palms USGS Quadrangle (DOC, 2007). The County of San Bernardino’s Geologic Hazards Map for the Twentynine Palms Area (F124C) indicates that an identified Earthquake Fault Zone extends into the existing Donnell Basin, where the proposed project would occur (County of San Bernardino, 2007). In addition, the Southern California Earthquake Center (SCEC) has concluded that there is a 99.7 percent probability for an earthquake of Magnitude 6.7 or greater to occur in California within 30 years (City of Twentynine Palms, 2012a). It is possible that an earthquake fault in the project area could rupture, and that damage to the project area could result from such a rupture. By nature of the project being a flood control basin, earthquake-related damage may include sidewall collapse, erosion, migration of rocks and riprap from the outfall area or damage to the Arizona crossing at Split Rock Avenue. This type of damage, should it occur, would not expose people or structures to substantial adverse effects, including the risk of loss, injury, or death. No impact would occur.

ii) Strong seismic ground shaking?

NO IMPACT. As described above, strong seismic ground shaking may occur in the project area. Damage to Donnell Basin could occur as a result of strong seismic ground shaking, but would not expose people or structures to substantial adverse effects, including the risk of loss, injury, or death. Additionally, the project would not construct any habitable structures, and would not otherwise result in the creation of new habitable structures. No impact would occur.

iii) Seismic-related ground failure, including liquefaction?

NO IMPACT. Liquefaction occurs when saturated or partially saturated and unconsolidated soils lose strength in response to a stress, typically on earthquake, and take on properties of liquid. This phenomenon can result in damage to infrastructure and foundations. The County of San Bernardino identifies areas susceptible to liquefaction on Geologic Hazard Maps; the map of the Twentynine Palms area (FI24C) indicates that the project site is not located susceptible to liquefaction (County of San Bernardino, 2007). In addition, as mentioned above, the project would not construct any habitable structures and would not otherwise result in the creation of new habitable structures. The project would not expose people or structures to potential substantial adverse effects associated with seismic-related ground failure from liquefaction.

Other types of seismic-related ground failures may include landslides and lateral spreading. The County of San Bernardino's Geologic Hazards Map for the area of Twentynine Palms indicates that the proposed project site and surrounding areas are not susceptible to landslides. Lateral spreads are another type of landslides, except that lateral spreading tends to occur on gentle slopes, while landslides occur on steeper slopes. The site and surrounding area are relatively flat, and the area is not considered susceptible to lateral spreading. In the rare event that seismic-related ground failure does occur at the project site, such an occurrence could potentially result in loss of capacity in the basin due to the collection of sediment and debris, but would not subject people or structures to substantial adverse effects. No impact would occur.

iv) Landslides?

NO IMPACT. As described above, the project is not located in an area considered susceptible to landslides. The project would not expose people or the environment to adverse effects associated with landslides.

b. Would the project result in substantial soil erosion or the loss of topsoil?

LESS THAN SIGNIFICANT IMPACT. The proposed project includes excavation of material from the existing Donnell Basin, and disposal of excavated material either on an adjacent site or an off-site location. During the excavation and disposal of sediments from the existing Donnell Basin, it is possible that wind and/or precipitation could cause or exacerbate erosion processes on the disturbed soils. In addition, Figure 1 shows that unpaved access roads on either side of the basin would be temporarily disturbed to provide access to the work area. Soil disturbance during construction could result in erosion and subsequent sedimentation and water quality degradation. However, as noted in Section A.1.4.4 (Project Design Features), Project Design Features that would be implemented as part of the proposed project include the use of dust palliatives to control erosion, and the implementation of a Stormwater Pollution Prevention Plan (SWPPP) with BMPs to prevent water quality degradation.

Regarding topsoil, the project would not result in loss of topsoil, including during excavation activities and disposal of excavated materials. Topsoil is a type of soil that comprises the first few inches of

ground surface and is considered the most fertile because it contains the most organic matter, and is therefore highly valuable to agricultural production. The project area is located in an arid region, where the geology is primarily comprised of water-laid sand, silt, and gravel; these materials are often used in construction practices, but are not considered topsoil valuable to agricultural uses. Additionally, the project area is currently disturbed, and any topsoil that may have originally existed on the project site is reasonably assumed to have been removed during original site disturbance. There is a substantial lack of vegetated topsoil at the project site.

In summary, the proposed project would not result in substantial soil erosion or the loss of topsoil, and potential impacts would be less than significant.

c. Would the project be located on geologic units 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?

NO IMPACT. The proposed project site is the existing Donnell Basin, and would not be located on geologic units that are unstable. As described above, the project is not located in an area that is susceptible to landslides, subsidence, or liquefaction. The project would include increasing the existing capacity of Donnell Basin by excavating material from within the basin and disposing of this material on an adjacent site or an off-site location; manufactured slopes within the basin (and at the disposal site(s), if necessary) would be appropriately designed and reinforced to ensure slope stability and avoid collapse. The proposed project would therefore not be located on unstable units or soils, and would not result in soil instability. No impact would occur.

d. Would the project 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?

NO IMPACT. Expansive soils are characterized by high clay content which expands when saturated with water and shrinks when dry, potentially threatening the integrity of buildings and infrastructure foundations. Soils in Twentynine Palms are generally characterized by water-laid sand, silt, and gravel (City of Twentynine Palms, 2012b); these soil types are not conducive to expansive properties. In addition, the project includes improvements to the existing Donnell Basin, and would not alter soil characteristics present at the basin. No impact would occur.

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

NO IMPACT. The proposed project does not include installation of septic tanks or alternative wastewater disposal systems. No impact would occur.

C.7 Greenhouse Gas Emissions

GREENHOUSE GAS EMISSIONS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Note: Significance criteria established by CEQA Guidelines, Appendix G.

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

LESS THAN SIGNIFICANT IMPACT. The proposed project would generate greenhouse gas (GHG) emissions through construction activities. The period of construction would be short-term, and construction-phase GHG emissions would occur directly from the off-road heavy-duty equipment and the on-road motor vehicles needed to mobilize crew, equipment, and materials.

The proposed project would also require annual maintenance work. The ongoing annual emissions summarized in Table C.3-4 are generated from equipment and vehicles used during site grading and weed/brush control, dust control through application of dust palliatives, debris removal, erosion and slope repair, and cleaning and graffiti removal on all structures. All of these activities, except debris removal, will not increase from current levels. Debris removal activities would likely be accomplished through sand and gravel sale operations, and the emissions for these activities have been estimated. The Mojave Desert Air Quality Management District (MDAQMD) has established a GHG significance threshold of 548,000 pounds per day and 100,000 tons per year (MDAQMD, 2011). The GHG emissions estimate calculations for construction and maintenance are provided in Appendix A, and the summary of the proposed project’s CO₂e annual emissions estimate is shown in Table C.7-1.

Table C.7-1 shows that the proposed project’s construction and maintenance would have GHG emissions that are well below the GHG emissions significance criteria; therefore, the project would have less than significant GHG emissions impacts.

Table C.7-1. Summary of Project Greenhouse Gas Emission Estimates

	Construction		Maintenance	
	CO ₂ e, lbs/day	Annual CO ₂ e, tons	CO ₂ e, lbs/day	Annual CO ₂ e, tons
On-Road Emissions	13,066	1,986	3,962	277
Off-Road Emissions	8,491	1,291	2,058	144
Total Emissions	21,557	3,277	6,020	421
MDAQMD Significance Threshold	548,000	100,000	548,000	100,000
Exceeds Threshold?	NO	NO	NO	NO

Source: Appendix A.

In addition, the proposed project would reduce the potential for future flooding events, which would reduce any GHG emissions associated with potential future flood damage clean-up and repair actions.

Under the alternative construction schedule, the initial construction excavation would be limited to that necessary to construct the dam embankment, the concrete structures, and the outlet works. Under this alternative there would be no export from the site during the first year of construction, and the remaining excess material within the basin would be removed through a sand and gravel sales operation that would remove the material over a five year period. Since the alternative would require less activity in any given year than the proposed project, the construction impacts with Mitigation Measures AQ-1 and AQ-2 would remain less than significant. The average daily construction GHG emissions may be similar to that shown above in Table C.7-1, but due to much shorter annual durations the annual construction GHG emissions over the six years of initial construction and sand and gravel sales would be lower than that of the proposed project. However, the overall GHG emissions for project construction with sand and gravel sales would be higher than that of the proposed project.

b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

LESS THAN SIGNIFICANT IMPACT. Climate change is a global phenomenon, and the regulatory background and scientific data are changing rapidly. In 2006, the California state legislature adopted Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 describes how global climate change would affect the environment in California. The impacts described in AB 32 include changing sea levels, changes in snow pack and availability of potable water, changes in storm flows and flood inundation zones, and other impacts. GHG emissions would be generated from off-road equipment uses and on-road vehicle trips during project construction. Operational GHG emissions would be generated by the annual maintenance activities. The GHG emissions for the proposed project, as described above, are expected to be minimal both during construction and operation of the proposed project. Estimated GHG emissions of the proposed project would be well below the threshold of the federal and State mandatory reporting regulation. The proposed project's GHG emissions would not trigger regulatory action under the federal 40 CFR Part 52 and the State Cap-and-Trade regulations. A summary of the compliance with all potentially applicable GHG plans, policies, and regulations is provided in Table C.7-2.

Adopted Plan, Policy, or Regulation	Consistency Determination	Proposed Project Consistency
Federal		
40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule.	Not Applicable	The project would not have emissions sources that would be subject to this regulation.
40 CFR Part 52. Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule.	Not Applicable	The project would not have emissions sources that would be subject to this regulation.
State		
AB 32. Annual GHG Emissions Reporting	Not Applicable	The project does not include emissions sources that would be subject to this regulation.
AB 32. Cap-and-Trade	Not Applicable	The project does not include emissions sources that would be subject to this regulation.
Local		
San Bernardino County Greenhouse Gas Emissions Reduction Plan (San Bernardino County, 2011)	Consistent	Air Quality Mitigation Measure AQ-2 will ensure that the project is consistent with the General Plan's Air Quality Element Policies Goals and Implementation Measures that will indirectly reduce GHG emissions by reducing fossil fuel combustion.

The project-related construction sources for which GHG emissions were calculated include off-road diesel construction equipment, on-road trucks, and worker commute vehicles. Per the San Bernardino County Greenhouse Gas Emissions Reduction Plan guidance for assessing project impacts, the construction emissions are amortized over the project life (50-year project life is assumed) in order to determine their contribution to annual emissions over the lifetime of the project. Table C.7-3 indicates that the annualized GHG emissions are below the San Bernardino GHG Emissions Reduction Plan significance threshold of 3,000 MT CO₂e per year.

	CO₂e, metric tons
Construction On-Road Emissions	1,802
Construction Off-Road Emissions	1,169
Total Construction Emissions	2,972
Amortized Construction Emissions (50-year life)	59
Annual Maintenance Emissions	421
Amortized Construction Emissions plus Annual Maintenance Emissions	481
San Bernardino County GHG Emissions Reduction Plan Significance Threshold	3,000
Exceeds Threshold?	NO

Source: Appendix A.

Table C.7-4 identifies current California emission reduction strategies to reduce GHGs and identifies the applicability of each strategy and the project design feature or mitigation measure that is proposed to comply with the applicable strategies.

Strategy	Project Design/Mitigation to Comply with Strategy
Vehicle Climate Change Standards: AB 1493 (Pavley) required the State to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by California Air Resources Board (CARB) in September 2004.	These are CARB enforced standards; vehicles that access the project that are required to comply with the standards would comply with these strategies.
Other Light Duty Vehicle Technology: New standards would be adopted to phase in beginning in the 2017 model.	
Heavy-Duty Vehicle Emission Reduction Measures: Increased efficiency in the design of heavy-duty vehicles and an education program for the heavy-duty vehicle sector.	
Diesel Anti-Idling: In July 2004, CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.	Consistent with MM AQ-2 Section C.3, Air Quality.
Hydrofluorocarbon (HFC) Reduction: 1) Ban retail sale of HFC in small cans; 2) Require that only low GWP refrigerants be used in new vehicular systems; 3) Adopt specifications for new commercial refrigeration; 4) Add refrigerant leak-tightness to the pass criteria for vehicular Inspection and Maintenance programs; 5) Enforce federal ban on releasing HFCs.	Not applicable.
Transportation Refrigeration Units (TRU), Off-Road Electrification, Port Electrification: Strategies to reduce emissions from TRUs, increase off-road electrification, and increase use of shore-side/port electrification.	Not applicable.
Manure Management: Reduction of volatile organic compounds from confined animal facilities through implementation of control options.	Not applicable.
Alternative Fuels - Biodiesel Blends: CARB would develop regulations to require the use of 1 to 4 percent (1 to 4%) biodiesel displacement of California diesel fuel.	Not applicable.
Alternative Fuels - Ethanol: Increased use of ethanol fuel.	Not applicable.
Achieve 50 percent (50%) Statewide Recycling Goal: Achieving the State's 50 percent (50%) waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48 percent (48%) has been achieved on a statewide basis. Therefore, a 2 percent (2%) additional reduction is needed.	Not applicable.

Strategy	Project Design/Mitigation to Comply with Strategy
Zero Waste - High Recycling: Additional recycling beyond the State's 50 percent (50%) recycling goal.	Not applicable.
Landfill Methane Capture: Install direct gas use or electricity projects at landfills to capture and use emitted methane.	Not applicable.
Urban Forestry: A new statewide goal of planting 5 million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs.	Not applicable.
Afforestation/Reforestation Projects: Reforestation projects focus on restoring native tree cover on lands that were previously forested and are now covered with other vegetative types.	Not applicable.
Water Use Efficiency: 19 percent (19%) of all electricity, 30 percent (30%) of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions.	Not applicable.
Building Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the California Energy Commission to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings).	Not applicable.
Appliance Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the California Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).	Not applicable.
Cement Manufacturing: Cost-effective reductions to reduce energy consumption and to lower carbon dioxide emissions in the cement industry.	Not applicable.
Smart Land Use and Intelligent Transportation Systems (ITS): Smart land use strategies encourage jobs/housing proximity, promote transit oriented development, and encourage high-density residential/commercial development along transit corridors. ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services.	Not applicable.
Smart land use, demand management, ITS, and value pricing are critical elements for improving mobility and transportation efficiency. Specific strategies include: promoting jobs/housing proximity and transit-oriented development; encouraging high density residential/commercial development along transit/rail corridor; valuing and congestion pricing; implementing intelligent transportation systems, traveler information/traffic control, incident management; accelerating the development of broadband infrastructure; and comprehensive, integrated, multimodal/intermodal transportation planning.	Not applicable.
Enteric Fermentation: Cattle emit methane from digestion processes. Changes in diet could result in a reduction in emissions.	Not applicable.
Green Buildings Initiative: Green Building Executive Order, S-20-04 (CA 2005), sets a goal of reducing energy use in public and private buildings by 20 percent (20%) by the year 2015, as compared with 2003 levels.	Not applicable.
California Solar Initiative: Installation of one million solar roofs or an equivalent 3,000 MW by 2017 on homes and businesses; increased use of solar thermal systems to offset the increasing demand for natural gas; use of advanced metering in solar applications; and creation of a funding source that can provide rebates over 10 years through a declining incentive schedule.	Not applicable.

The Office of the California Attorney General maintains a website with a list of CEQA mitigation measures for Global Climate Change Impacts. The Attorney General has listed some examples of types of mitigations that local agencies may consider to offset or reduce global climate change impacts from a project. The Attorney General assures that the presented lists are examples and not intended to be exhaustive and provides measures and policies that could be undertaken. Moreover, the measures cited may not be appropriate for every project, so the Attorney General suggests that the lead agency should use its own informed judgment in deciding which measures it would analyze, and which measures it would require, for a given project.

The Attorney General suggests energy efficiency measures that could be undertaken or funded by a diverse range of projects, including: renewable energy, water conservation and efficiency, solid waste measures, land use measures, transportation and motor vehicles, and carbon offsets. However, most of the suggested measures would not be applicable to the proposed project because they are more appropriate as measures to reduce long-term operational GHG emissions.

In summary, the proposed project will conform to State and local GHG emissions/climate change regulations and policies/strategies; therefore, the proposed project would have less than significant GHG impacts.

C.8 Hazards and Hazardous Materials

HAZARDS AND HAZARDOUS MATERIALS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

NO IMPACT. Construction of the project would include the use and transport of hazardous materials in the form of fuels and lubricants required to operate construction vehicles and equipment. Such use is not unusual and would occur in compliance with best management practices (BMPs) to avoid accidental leaks or spills. Materials used during construction of the project would not present a significant hazard to the public or the environment. During operation of the project, existing maintenance activities at Donnell Basin would continue, and would not require the routine transport, use, or disposal of hazardous materials. No impact would occur.

b. Would the project 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?

NO IMPACT. As described above, construction of the project would require the use of hazardous materials in the form of vehicle fuels and other materials required to operate construction vehicles and

equipment. Operation of the project would not include the routine transport, use, or disposal of hazardous materials. There is no reasonably foreseeable upset or accident condition involving the release of hazardous materials as a result of the project. No impact would occur.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED. One school is located within one-quarter mile of the project: the Oasis Elementary School, located approximately 780 feet (0.15 mile) to the north, at the southwest corner of Split Rock Avenue and El Paseo Drive, with primary access on El Paseo Drive. Construction of the proposed project would include air emissions associated with the use of heavy vehicles, equipment, and machinery. Best management practices (BMPs) and mitigation measures (AQ-1 and AQ-2) identified in the Air Quality analysis (Section C.3) would minimize adverse effects associated with air quality emissions during construction. Mitigation Measure AQ-2 would require the use of off-road equipment with Tier 3 compliant engines, which will reduce the diesel particulate matter (DPM) emissions by 60 percent or more in comparison to fleet average emissions. Implementation of Mitigation Measure AQ-1 would reduce the potential for temporary high fugitive dust exposures and minimize the risk of contracting Valley Fever by area school children and residents.

With the exception of fuels required to operate vehicles and equipment, construction of the project would not involve the handling of hazardous or acutely hazardous materials, substances, or wastes within one-quarter mile of a school. Operation and maintenance of the project would not differ from current operation and maintenance activities at Donnell Basin, and would not result in hazardous emissions or the handling of hazardous materials near a school. As a result of the temporary air quality emissions associated with project construction and the close proximity of the Oasis Elementary School, potential impacts would be adverse but less than significant, due to the temporary nature of construction and the BMPs and mitigation measures (AQ-1 and AQ-2) identified in the Air Quality Section (Section C.3).

d. Would the project be located on a site that 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?

NO IMPACT. The California Department of Toxic Substance Control (DTSC) maintains the Hazardous Waste and Substances Sites List, also referred to as the Cortese List, for compliance with Section 65962.5 of the California Government Code. The Cortese List identifies hazardous materials sites selected for remedial action, sites with known toxic materials identified through the abandoned site assessment program, sites with underground storage tanks (USTs) having a reportable release, drinking water wells with detectable levels of contamination, and solid waste disposal facilities from which there is known migration of hazardous materials. No sites within the City of Twentynine Palms are identified on the current Cortese List (DTSC, 2007). In addition, a search of available environmental records was conducted for the proposed project site, and a report was prepared in compliance with EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate (EDR, 2013). The search and report generated for the proposed project indicate that there are no hazardous materials sites located within Donnell Basin, including the permanent and temporary disturbance areas. The project would not create a hazard to the public or the environment, and no impact would occur.

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 for people residing or working in the project area?

NO IMPACT. The nearest airport land use plan to the proposed project site is associated with the Twentynine Palms Airport, a public use airport owned by the County of San Bernardino. Twentynine Palms Airport is located more than six miles east of the proposed project site and the airport's land use plan area is limited to the airport's horizontal surface (San Bernardino County, 1992). The proposed project is not located within two miles of a public airport or public use airport and is not located within an airport land use plan. No impact would occur.

f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

NO IMPACT. There are two private airstrips in the vicinity of Twentynine Palms: Cones Field, located roughly 1.75 miles north-northeast of the project site, and Bauer Airport, located 2.5 miles to the north. The project would not introduce any new structures that could interfere with aircraft activity, and would not include any activities that could pose a safety hazard associated with aircraft activity. The proposed project would therefore not result in a safety hazard for people residing or working in the project area. No impact would occur.

g. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The Twentynine Palms Emergency Operations Plan applied to the City of Twentynine Palms, including the proposed project site, and identifies emergency planning, organization, and response policies and procedures based on the functions and principles of the California Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS) (City of Twentynine Palms, 2011). The plan addresses how the City will respond to extraordinary events or disasters, from preparation through recovery. The proposed project would generally improve safety and flood-related emergency situations in the project area. However, during the construction period, the temporary presence of project-related vehicles and equipment on public roadways in the project area could potentially interfere with access along emergency response or evacuation routes.

The majority of vehicle and equipment use during construction would occur on the immediate project site, off of public roadways, and would have no effect on emergency response or evacuation access. A traffic control plan (Mitigation Measure T-1; Section C.16 Transportation/Traffic) would be implemented during project construction to minimize or avoid potential adverse impacts associated with transporting vehicles and equipment to and from the project site. In addition, as part of the proposed project, the existing Arizona crossing at Split Rock Avenue (adjacent to the east of Donnell Basin) would be improved, and this improvement would require Split Rock Avenue to be closed to through-traffic for a short-term and temporary duration. Split Rock Avenue is a narrow roadway, not crucial to emergency response and evacuation access. Other roadways that provide access to the same area include Mesquite Springs Drive to the west and El Paseo Drive to the north. During operation and maintenance of the project, the intensity and frequency of maintenance activities and associated truck traffic would not increase or result in new or increased impacts to emergency response or evacuation routes compared to existing and previous maintenance activities. Impacts related to emergency response and evacuation access would be less than significant.

h. Would the project 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?

NO IMPACT. Wildland fires in Twentynine Palms are generally small in size, likely due to minimal vegetation in the area, as well as effective response by the Twentynine Palms Fire Department (City of Twentynine Palms, 2012). The proposed project would not involve the construction or operation of habitable structures in wildland areas or promote development in wildland areas. In addition, it is anticipated that vegetation management activities would be conducted during operation of the improved Donnell Basin in order to maintain its flood control capacity. The proposed project would not introduce adverse impacts associated with wildland fires.

C.9 Hydrology and Water Quality

HYDROLOGY AND WATER QUALITY

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Substantially deplete groundwater supplies or interfere substantially with groundwater discharge such that there would be a net deficit in the aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h. Place within 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j. Cause inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

a. Would the project violate any water quality standards or waste discharge requirements?

LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED. During construction, waste would be generated in the form of material excavated from the existing Donnell Basin, which would be disposed of by use as fill on the adjacent property, and/or by transport to an off-site disposal facility. Construction of the project would also include the use of heavy equipment and machinery that would have the potential to leak hazardous materials such as fuel or lubricants, if operated, maintained, or stored improperly; such a leak would have the potential to result in water quality degradation if not addressed immediately and if water is present in the project area at the time of the spill or leak.

Operation and maintenance of the project would be the same as present, and would include occasional inspection of the facilities activities such as sediment removal and slope stabilization, particularly after large storm events. Operation and maintenance would not include any waste discharge activities, and would not violate any water quality standards or waste discharge requirements.

Implementation of Mitigation Measures HYD-1 and HYD-2, below, would ensure that the proposed project occurs in full compliance with all applicable water quality standards and waste discharge requirements, and that significant adverse impacts to water quality would not occur.

Required permits and approvals applicable to the proposed project are identified in Section A.1.5 (Required Permits and Approvals). The project is located within the jurisdiction of the Colorado River Basin Regional Water Quality Control Board (RWQCB) and is subject to the management direction of the Water Quality Control Plan for the Colorado River Basin region. The existing Twentynine Palms Channel and Donnell Basin are mapped as an ephemeral drainage that are jurisdictional waters of the state under Section 1600 of the State Fish and Game Code, and the project would therefore require a delineation and agency notification prior to initiation of the project, as described in Section C.4 (c). The drainage is not considered federally jurisdictional, and a Clean Water Act Section 404 permit would not be required.

Mitigation Measures

HYD-1 Compliance with water quality permits. Prior to construction, the San Bernardino County Flood Control District shall contact all agencies with jurisdiction over the project and determine whether or not each agency requires a permit associated with water resources for the project. Where a permit is required, the San Bernardino County Flood Control District shall ensure that it is prepared and approved of prior to the onset of construction. Copies of all permits shall be maintained on-site during the construction period.

HYD-2 Accidental spill control and environmental training. Prior to the onset of construction of the project, the San Bernardino County Flood Control District shall prepare an accidental spill control plan and environmental training program which shall be implemented during the construction period. The plan shall include the following: define areas where hazardous materials would be stored, where trash would be placed, where rolling equipment would be parked, fueled and serviced, and where construction materials would be stored. The San Bernardino County Flood Control District shall prescribe hazardous materials handling procedures for reducing the potential for a spill during construction, and shall include an emergency response program to ensure quick and safe cleanup of accidental spills. These conditions may be included in the Stormwater Pollution Prevention Act (SWPPP) to be prepared for the project as identified in Section A.1.4.4 of this Initial Study.

b. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

LESS THAN SIGNIFICANT IMPACT. The proposed project would require a water source during construction for dust suppression. The exact water source has not been identified; however, the project is located within the service territory of the Twentynine Palms Water District (TPWD), and it is anticipated that the TPWD would provide water service for the project's construction needs. The TPWD exclusively pumps and distributes local groundwater, the only water source in the area (TPWD, 2013). The TPWD is located within the boundaries of three groundwater basins, the Twentynine Palms Valley Groundwater Basin, the Joshua Tree Groundwater Basin, and the Dale Valley Groundwater Basin, each

of which is addressed in the TPWD's current Urban Water Management Plan (UWMP). The UWMP addresses water supply availability over a projection of 25 years, with consideration to population growth, climatic variables, anticipated or planned supplies, and groundwater condition. Although local groundwater resources are known to have been affected by overdraft conditions, the TPWD has also adopted a Groundwater Management Plan (GMP) which identifies Basin Management Objectives (BMOs) and defines quantitative goals and thresholds for managing groundwater resources and achieving the BMOs (TPWD, 2011). Additionally, the project's water supply requirements would be temporary, limited to the project's construction period; operation and maintenance of the project would not require a water supply. Due to active management of the local groundwater resources, and the temporary nature of the project's water supply requirements, potential impacts to groundwater resources would be less than significant.

c. *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on or off site?*

LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED. The project would increase the stormwater conveyance capacity of the existing Donnell Basin, and would not alter the course of a stream or river. Temporary disturbance associated with project construction would be characterized by the widening and removal of vegetation from existing unpaved access roads on either side of Donnell Basin (see Figure 1); this temporary disturbance would not alter existing drainage patterns of the site or area. The existing capacity of Donnell Basin would be increased by excavating material from within the basin; this action in and of itself would have no effect on erosion or siltation in the area. However, material excavated from the basin would need to be disposed of, and this part of the project may require an erosion control measure to avoid adverse erosion and siltation effects. Disposal of excavated material would either occur by placing it on an adjacent parcel ("Optional Disturbance Area") for use as permanent fill, or by hauling it to an off-site location for disposal, possibly at a quarry for potential construction use. Implementation of Mitigation Measure HYD-3 would ensure that an Erosion Control Plan is implemented with the Project and adverse effects associated with erosion or siltation would be less than significant.

Mitigation Measure

HYD-3 *Erosion Control Plan.* An Erosion Control Plan shall be prepared for the project, and shall include best management practices (BMPs) to ensure that disturbed soils do not migrate within on- or off-site areas and do not result in siltation or sedimentation. Such BMPs may include but are not limited to: defining ingress and egress within the project site to control track-out, implementing a dust control program during construction, and properly containing stockpiled soil. The Erosion Control Plan shall be implemented during all soil-disturbing activities associated with the project.

d. *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?*

NO IMPACT. As described above under (c), expanding the capacity of Donnell Basin would not result in drainage pattern alterations or alter the course of a stream or river. Disposal of material excavated from the basin may result in localized drainage pattern alterations, depending upon where and how the material is disposed of. If placed on the Optional Disturbance Area, the excavated material would be used as permanent fill and would level out the elevation of the site, which is currently characterized by

uneven grade and gentle slopes. This leveling out of the Optional Disturbance Area would not substantially increase the rate or amount of surface runoff because it would not alter the amount of impervious surfaces on the site. As a flood control improvement effort, the proposed project is designed to reduce flooding associated with large storm events. The project would not result in adverse effects associated with on- or off-site flooding. No impact would occur.

e. Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems to provide substantial additional sources of polluted runoff?

NO IMPACT. The proposed project would improve the capacity of stormwater drainage features at the existing Donnell Basin, and would not contribute runoff water that could exceed the capacity of existing or planned stormwater drainage systems. Regarding the contribution of polluted runoff, construction of the project would include the use of heavy vehicles, equipment, and machinery which require hazardous materials such as fuels and lubricants in order to operate, and there is some potential that such materials could leak or be accidentally spilled on the project site. However, as discussed above, potential water quality impacts would be less than significant. The project would not create or contribute runoff water which would exceed stormwater drainage capacity, and would not provide substantial additional sources of polluted runoff. No impact would occur.

f. Would the project otherwise substantially degrade water quality?

LESS THAN SIGNIFICANT IMPACT. Potential water quality impacts of the project are thoroughly characterized under criterion (c) regarding erosion and sedimentation, and under criterion (e) regarding hazardous materials. In addition, the SWPPP that would be implemented as a part of project design, as stated in Section A.1.4.4, would ensure that appropriate BMPs are implemented to avoid water quality degradation. The project would not otherwise degrade water quality and impacts would be less than significant.

g. Would the project place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

NO IMPACT. The project does not involve the construction of any housing or habitable structures. Increasing the stormwater conveyance capacity of Donnell Basin would actually remove some areas in the City of Twentynine Palms from the existing Flood Hazard Area, as defined by the Federal Emergency Management Agency (FEMA). No adverse impact associated with the placement of housing within a 100-year floodplain would occur.

h. Would the project place within a 100-year floodplain structures that would impede or redirect flood flows?

NO IMPACT. The project does not include construction of any structures. An Arizona crossing at Split Rock Avenue would be improved to accommodate increase flows through Donnell Basin, and this crossing would direct flows under the roadway; however, this is the current direction of flow through the basin. No impact would occur.

i. Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

NO IMPACT. As a flood control improvement effort, the proposed project would reduce existing hazards associated with large storm events by increasing conveyance capacity of Donnell Basin. The project would not include alterations to any levees or dams, and would not contribute to any potential for

levees or dams to fail. Regardless, there are no dams in or near the Twentynine Palms area, and the hazard of dam inundation in the project area is considered nil (City of Twentynine Palms, 2012). No impact would occur.

j. Would the project cause inundation by seiche, tsunami, or mudflow?

NO IMPACT. The project is not located near the coast and is not subject to inundation by tsunami. The project is also not located near another type of large body of water that could result in inundation by seiche. Regarding mudflows, or the rapid downhill flow of saturated sediments, some areas in the mountains surrounding Twentynine Palms are subject to mudflow events, but these areas are not near Donnell Basin, and would have no effect on the basin's capacity. The nearest area to Donnell Basin that is subject to mudflows is Donnell Hill, located within approximately 0.25 mile to the south-southwest. Donnell Hill is a gently sloping area identified in the City of Twentynine Palms General Plan (Safety Element) as being subject to "small debris flows," where debris flows are essentially the same as mudflows (City of Twentynine Palms, 2012). The project would have no effect on existing potential for mudflow in the area, and any localized flows that occur at Donnell Hill would not reach Donnell Basin, as the hill is downstream of the basin. No impact would occur.

C.10 Land Use and Planning

LAND USE PLANNING

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

a. Would the project physically divide an established community?

NO IMPACT. The proposed project site is located in the City of Twentynine Palms. Land uses in the immediate project vicinity include schools, churches, and residences. The main components of the proposed project include deepening of the existing interim detention basin, re-use and/or disposal of excavated sediments, construction of basin embankments, outlet works and spillway, installation of internal access roads, and alterations to the existing Twentynine Palms Channel and Split Rock Avenue Crossing. These project activities would be contained within the proposed project site, which are currently used for flood control activities. Therefore, the proposed project would not physically divide any of the surrounding developed areas, and would not divide an established community.

b. Would the project 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?

LESS THAN SIGNIFICANT IMPACT.. The project site is located within the City of Twentynine Palms and is also under the jurisdiction of San Bernardino County. The land use plans applicable to the proposed project site include the City’s 2012 General Plan and Development Code, and the County’s Zoning Map.

As stated in the General Plan, Twentynine Palms utilizes a “one-map” system, in which the City’s General Plan Land Use Map also serves as the City’s official Zoning Map (Twentynine Palms, 2012a). According to the Land Use Map, the proposed project site (including the temporary disturbance area) is within the Floodway designation, and the optional disturbance area is within the Office Commercial designation (Twentynine Palms, 2012b).

Based on the County’s Zoning Map, the Donnell Basin is under the jurisdiction of the County; however, the County’s zoning map does not apply a land use designation to the site (San Bernardino County, 2007). Therefore, for the purposes of this analysis, it is assumed that the City’s Floodway designation is the applicable land use designation. Based on this assumption, Table C.10-1 provides an analysis of the proposed project’s consistency with the City’s applicable plans, policies, and regulations:

Table C.10-1. Land Use Consistency Analysis

Planning Document	Policy or Regulation	Consistency Analysis
City of Twentynine Palms – 2012 General Plan Land Use Element	<p>TABLE LU-14 PUBLIC AND QUASI-PUBLIC (PQP) LAND USE DISTRICT Floodway (F) Designation. The F land use serves as a means of identifying those properties within the City under ownership by the San Bernardino County Flood Control District. Permitted uses on F designated parcels shall be 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. Policies and Standards. Design: Flood control facilities shall complement the area in which they are located.</p>	<p>The existing Donnell Basin is within the Floodway designation, along with the area where the Split Rock Avenue Crossing would occur. The proposed project would result a series of flood control facilities within the Donnell Basin, which would comply with permitted uses for this designation. In addition, since the project site is currently used for flood control, the improvements associated with the proposed project would complement the area.</p>
	<p>TABLE LU-12 COMMERCIAL (C) LAND USE DISTRICT Office Commercial (CO) Designation. Office Commercial (CO) The CO land use allows for single and multi-tenant offices, including legal, design, engineering, medical, real estate and government services. Ancillary commercial uses to support these services may be permitted, including cafes, copying services and newsstands. The CO land use permits limited residential uses as a means of providing opportunities for mixed-use developments.</p>	<p>The improvements associated with the Twentynine Palms Channel are allowed within the CO Designation, which is under the jurisdiction of the City. The District shall coordinate with the City to ensure that any required land use permits are obtained for this portion of the project site if necessary.</p>
City of Twentynine Palms – Development Code	<p>Chapter 19.15 Public (P) Land Use District Table 19.15-A Permitted and Conditional Uses E. Transportation, Communication, and Utilities Utility and service uses and structures. Including, but not limited to reservoirs, pumping plants, water storage tanks, gas storage and distribution facilities, electrical substations, central communications offices, sewer treatment facilities, and solid waste disposal sites. Commercial Solar Fields are expressly prohibited.</p>	<p>Although a basin is not explicitly included as a permitted use within this District, the purpose of the basin is to provide flood protection for surrounding land uses and is a permitted use within every zoning district. Therefore, the proposed project is considered a necessary public facility and would not conflict with this zoning designation.</p>
	<p>Chapter 19.10 Commercial Districts (CG, CO, CT, and CN) Table 19.10-A Permitted and Conditional Uses E. Transportation, Communication, and Utilities Utility and service uses and structures. Including, but not limited to reservoirs, pumping plants, electrical substations, central communications offices, sewer plants, sewer treatment facilities, solid waste disposal sites. Commercial Solar Fields are expressly prohibited.</p>	<p>Although a basin is not explicitly included as a permitted use within this District, the purpose of the basin is to provide flood protection for surrounding land uses and is a permitted use within every zoning district. Therefore, the proposed project is considered a necessary public facility and would not conflict with this zoning designation.</p>

c. Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

NO IMPACT. The proposed project is within the boundaries of West Mojave (WEMO) Plan and the proposed Desert Renewable Energy Conservation Plan (DRECP). As discussed in Section C.4 (Biological Resources), the WEMO is a pending habitat conservation plan (HCP) pursuant to the federal ESA and an amendment to the California Desert Conservation Area (CDCA). In March 2006 the BLM issued a Record

of Decision (ROD) for the WEMO Final Environmental Impact Statement. However, the ROD addressed only the BLM's amendment to the CDCA Plan, and it did not include actions proposed by State and local governments for non-federal lands. The HCP has not been completed and would require greater specificity for local governments to obtain incidental take permits under the State and Federal ESAs.

The DRECP is currently being prepared. Once completed, this Plan would help provide effective protection and conservation of desert ecosystems while allowing for the appropriate development of renewable energy projects. The DRECP is not applicable to other activities, including flood control projects such as the Donnell Basin project. No impact would occur.

C.11 Mineral Resources

MINERAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

a. Would the project 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?

NO IMPACT. Mineral resources are solid, inorganic substances typically obtained through mining, including sand, gravel, as well as metals such as gold and silver. A variety of minerals are available in southern California. There are multiple past and current mining sites in the proposed project vicinity, as identified by the US Geological Survey Mineral Resources Data System (MRDS). There is one site identified in the project's immediate vicinity, a retired processing plant that produced gold as a primary commodity and silver as a tertiary commodity (MRDS, 2013). Neither construction nor operation and maintenance of the project would interfere with active mining operations, including as related to access restrictions.

Construction of the proposed project would remove material from the existing Donnell Basin in order to increase its storage capacity. Material removed from the basin may be placed as permanent fill on a property adjacent to the south of the basin, in order to raise and level the elevation of that property. Alternatively, material removed from the basin may be removed through sand and gravel sale operations. Neither of these options would 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. No impact would occur.

b. Would the project 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?

NO IMPACT. As noted above, there is one identified mineral extraction site in the general vicinity of the proposed project, but it is not a current or active site. The proposed project would have no adverse effect on mineral resources or mineral extraction operations.

C.12 Noise

NOISE

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

a. Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED. The assessment of noise impacts uses specific terminology and fundamental descriptors not commonly used in everyday conversation. Therefore, in order to assist in a thorough understanding of the subsequent analysis, the following specific terms are discussed in this subsection and are defined below:

- **Decibel (dB)** is a unit used to describe the amplitude of sound, and sound levels are calculated on a logarithmic, not linear, basis. The lowest sound level that an unimpaired human ear can hear is described as zero on the decibel scale. Due to the logarithmic nature of measuring sound levels on the decibel scale, a 10-dB increase represents a tenfold increase in acoustic energy; whereas, a 20-dB increase represents a hundredfold increase in acoustic energy. Because a relationship exists between acoustic energy and intensity, each 10-dB increase in sound level can have an approximate doubling effect on loudness as perceived by the human ear.

The most common metric is the overall A-weighted sound level measurement (dBA) that has been adopted by regulatory bodies worldwide. The A-weighting network measures sound in a fashion similar to the way a person perceives or hears sound, thus achieving very good correlation in terms of evaluating acceptable and unacceptable sound levels.

- **Ambient noise level** is the composite noise from all sources resulting in the normal, existing level of environmental noise at a given location. Ambient noise levels are typically defined by the average dBA.

- **Community Noise Equivalent Level (CNEL)** represents the average daytime noise level during a 24-hour day, adjusted to an equivalent level to account for people's lower tolerance of noise during the evening and nighttime hours. Because community receptors are considered to be more sensitive to unwanted noise intrusion during the evening and night, an artificial decibel increment is added to quiet-time noise levels. Sound levels are increased by 5 dBA during the evening, from 7:00 p.m. to 10:00 p.m. and by 10 dBA during the nighttime, from 10:00 p.m. to 7:00 a.m.

Construction

San Bernardino County

The County of San Bernardino 2007 General Plan (San Bernardino County, 2007a) defines noise-sensitive land uses as residences, schools, churches, and parks. The County of San Bernardino 2007 Development Code defines noise-sensitive land uses as residential uses, schools, hospitals, nursing homes, religious institutions, libraries, and similar uses (San Bernardino County, 2007b). As discussed in Section A.1.3.1, sensitive land uses in the immediate project vicinity include schools, churches, and residential developments, including:

- **First Baptist Church** is to the east, approximately 175 feet from the basin, at the southwest corner of Split Rock Avenue and Joshua Drive, just north of the El Rancho Delores Motel.
- **Oasis Elementary School** is to the north, approximately 780 feet (0.15 mile) from the basin, at the southwest corner of Split Rock Avenue and El Paseo Drive, with primary access on El Paseo Drive.
- **Church of Jesus Christ of LDS** is to the northwest, approximately 1,690 feet (0.32 mile) from the basin, on the north side of El Paseo Drive (73002 El Paseo Drive, Twentynine Palms, CA 92277)
- **El Paseo Apartments** is to the northwest, approximately 1,875 feet (0.36 mile) from the basin, located at the northeast corner of El Paseo Drive and Mesquite Springs Road.
- **Twentynine Palms High School** is to the northwest, approximately 1,950 feet (0.37 mile) from the basin, located along Mesquite Springs Road at the terminus of El Paseo Drive, bounded by Wildcat Way to the south, Datura Avenue to the west, and Sunnyslope Drive to the north, with primary access on Datura Avenue.
- **Twentynine Palms United Methodist Church** is to the west, approximately 1,511 feet (0.29 mile) from the basin, on the west side of Mesquite Springs Road and south of Gorgonio Drive.

San Bernardino County General Plan – Noise Element. Policy N 1.6 of the General Plan Noise Element states noise level performance standards for stationary and other locally regulated sources (such as industrial, recreational, and construction activities) will be enforced via the standards and thresholds provided in the Counties Development Code.

San Bernardino County Development Code. Section 83.01.080, Noise, of the County Development Code provides noise standards for stationary and mobile noise sources. Per Section 83.01.080(g), temporary construction, maintenance, repair or demolition activities are exempt between 7:00 a.m. and 7:00 p.m., except Sundays and federal holidays. As discussed in Section A.1.4.2, construction of the proposed project would be limited to daylight hours, with typical work hours being 7:00 a.m. to 3:00 p.m., Monday through Friday. However, due to extreme weather in the proposed project area, work hours may be modified to begin at 5:00 a.m., as needed to avoid daytime heat in the summer. Because construction of the proposed project may begin prior to the allowable hour of 7:00 a.m. (per Section

83.01.080), Mitigation Measure N-1 is required to reduce this potential impact to a less than significant level.

City of Twentynine Palms

Noise regulations and policies from the City of Twentynine Palms General Plan Noise Element (Twentynine Palms, 2012a) and Development Code (Twentynine Palms, 2009) are discussed below.

City of Twentynine Palms General Plan – Noise Element. Table NS-2 within the General Plan Noise Element defines interior and exterior noise standards for residential uses and open space, which are specified as 65 CNEL. However, because the proposed project would only temporarily generate noise during construction, the use of a CNEL threshold is not applicable to the proposed project. However, General Plan Noise Element Implementation Policy NS-1.1 states that noise will be enforced via the standards and thresholds provided in the City’s Development Code.

City of Twentynine Palms Development Code. Chapter 1.02 of the City’s Development Code adopts the San Bernardino County Code and Other Non-Codified San Bernardino County Ordinances, as discussed above (City of Twentynine Palms, 2009). Per Chapter 19.74.090 (Exempt Noise) of the City’s Development Code, temporary construction, repair, or demolition activities are exempt from Development Code noise standards between 7:00 a.m. and 7:00 p.m. except Sundays and Federal holidays. Further, during the summer months of May through September of each year, temporary construction, repair or demolition activities shall be permitted during the hours of 6:00 a.m. to 7:00 p.m.

Construction Noise Analysis

As discussed above, construction noise would be exempt per Section 83.01.080 of the County Development Code and Chapter 19.74.090 of the city of Twentynine Palms Development Code. However, due to extreme weather in the proposed project area, work hours may be modified to begin at 5:00 a.m., as needed to avoid daytime heat in the summer. Because these hours would be outside of the exempt hours of both Development Codes, Mitigation Measure N-1 is required to reduce this potential impact to a less than significant level.

Operation

As discussed in Section A.1.4.3, once constructed, maintenance levels of the proposed project site are not anticipated to increase from existing conditions. As such, the proposed project would not generate any new operational noise and would be compliant with all operational noise performance standards and policies contained within: the San Bernardino County General Plan Noise Element, the City of Twentynine Palms General Plan Noise Element, San Bernardino County Development Code Section 83.01.080, and City of Twentynine Palms Development Code Chapter 19.74.

Mitigation Measure

- N-1 Prior to construction, the project proponent shall obtain San Bernardino County and/or City of Twentynine Palms approval (exemption or variance) for all construction activities not exempt or not compliant with:
- San Bernardino County Development Code Section 83.01.080 (Noise) and/or Section 83.01.090 (Vibration).
 - City of Twenty Nine Palms Development Code Chapter 19.74.090 (Noise) and/or Chapter 19.74.100 (Vibration).

b. Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.

Construction

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration velocity is most often described in terms of peak particle velocity (PPV) for purposes of groundborne vibration analysis. Typically, ground-borne vibrations generated by man-made activities attenuate rapidly with distance from the source of the vibration. Man-made vibration issues are therefore usually confined to short distances (i.e., 500 feet or less) from the source (FTA, 2006).

Section A.1.4.2, Table A.1-2 (Construction Equipment), identifies the types of equipment anticipated to be required during construction of the proposed project. Heavy equipment use, primarily during earth moving activities, has the potential to generate groundborne vibration. Additionally, heavy truck haul trips may produce short-term groundborne vibration during site egress/ingress. Such vibrations may be noticeable at any existing sensitive receptor structures located within 500 feet of heavy equipment operation sites.

The City of Twentynine Palms General Plan does not contain any policies or regulations pertaining to vibration from construction. However, Chapter 19.74.100 of the City's Development Code includes performance standards and regulations pertaining to vibration. While the San Bernardino County General Plan Noise Element does not contain policies related to vibration, the County Development Code includes performance standards and regulations pertaining to vibration. These are discussed below.

San Bernardino County Development Code. Section 83.01.090, Vibration, of the County Development Code provides vibration standards. Per Section 83.01.090(c), temporary construction, maintenance, repair or demolition activities are exempt between 7:00 a.m. and 7:00 p.m., except Sundays and federal holidays.

City of Twentynine Palms Development Code. Per Chapter 19.74.100, temporary construction, maintenance, repair or demolition activities are exempt between 7:00 a.m. and 7:00 p.m., except Sundays and federal holidays.

Construction Vibration Analysis

As discussed in Section A.1.4.2, construction of the proposed project would be limited to daylight hours, with typical work hours being 7:00 a.m. to 3:00 p.m., Monday through Friday. However, due to extreme weather in the proposed project area, work hours may be modified to begin at 5:00 a.m., as needed to avoid daytime heat in the summer. Because construction of the proposed project may begin prior to the exempt hour of 7:00 a.m. (per Section 83.01.090 and Chapter 19.74.100), Mitigation Measure N-1 is required to reduce this potential impact to a less than significant level.

Operation

As discussed in Section A.1.4.3, once constructed, maintenance levels of the proposed project site are not anticipated to increase from existing conditions. As such, the proposed project would not generate any new operational vibration and would be compliant with all operational vibration performance

standards contained within the San Bernardino County Development Code Section 83.01.090 and city of Twentynine Palms Development Code Chapter 19.74.

c. Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

NO IMPACT. As discussed in Section A.1.4.3, once constructed, maintenance levels of the proposed project site are not anticipated to increase from existing conditions. As such, the proposed project would not generate any new operational noise or increase existing ambient conditions.

d. Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED. As discussed in Section A.1.3.1, sensitive land uses in the immediate project vicinity include schools, churches, and residential developments. Table C.12-1 provides a representative sample of ambient noise conditions at sensitive receptor locations adjacent to the proposed project site. The primary man-made noise source in the proposed project area was documented as traffic noise along residential streets bordering the proposed project. As described in Table C.12-1, the existing average ambient noise levels ranged between 47.5 dBA and 65.2 dBA.

Location		Survey Period	L _{eq}	L _{max}	L _{min}	Noted Sources
1	Playground at Oasis Elementary School	4:40 p.m. to 5:00 p.m.	47.5	63.5	40.2	Heavy wind (wind foam used on noise meter). Noise from tetherball pole on playground. Big truck passed school on 29 highway.
2	Intersection of Split Rock Avenue and Buena Vista Drive	3:35 p.m. to 3:55 p.m.	65.2	80.3	41.7	Light wind (wind foam not used on noise meter). Air conditioning unit on nearby residence in operation (produced noticeable noise). 13 vehicles passed through intersection.
3	Intersection of Bagley Avenue and Split Rock Avenue	5:06 p.m. to 5:26 p.m.	51.2	79.2	41.7	Heavy wind (wind foam used on noise meter). One scooter rider passed through intersection. 16 vehicles passed through intersection.

Notes: All measurements are in dBA and were taken on April 30, 2013.
L_{eq} – Average dBA level during measurement
L_{max} – Maximum dBA level during measurement
L_{min} – Minimum dBA level during measurement

Section A.1.4.2, Table A.1-2 (Construction Equipment), identifies the types of equipment anticipated to be required during construction of the proposed project. Noise levels for typical pieces of construction equipment (at 50 feet) are listed in Table C.12-2.

Equipment	dBA at 50 Feet
Backhoes	80
Shovel	82
Compactors	82
Concrete Pumps, Mixers	82-85
Dozers	85
Front Loader	85
Graders, Scrapers	85-89
Trucks	88

Source: FHWA, 2006

Short-term increases in ambient noise levels would occur during construction as a result of both on-site construction equipment and off-site vehicle use from the transport of construction equipment and materials. It is anticipated that Mesquite Springs Road and Split Rock Avenue would be used to transport construction vehicles, equipment, and materials to and from the proposed project site, via SR-62. As shown on Figure 1, residential (sensitive) receptors are located along the eastern permanent and temporary disturbance areas. Only a few residential uses are located south of SR-62 proximate to temporary and optional disturbance areas. Land uses west of Mesquite Springs Road, which are adjacent to permanent and temporary disturbance areas, are commercial/industrial in nature and not considered sensitive receptors.

Noise from construction-related vehicles is not expected to be significantly greater than trucks and other vehicles currently utilizing these public roadways. Additionally, noise from on-site stationary construction equipment attenuates over distance because of spreading losses, absorption of the intervening terrain, and reflection off any intervening walls or berms. Spreading losses account for an attenuation factor of 6 dBA per doubling of distance. Due to the distancing of nearby sensitive receptor locations (as identified in Section A.1.3.1), this attenuation would significantly decrease dBA levels at each receptor when compared to the dBA values shown in Table C.12-2. However, even with this attenuation, it is expected that construction noise would temporarily increase noise levels over ambient conditions described in Table C.12-1.

As discussed above in C.12 (a), construction noise is exempt from any thresholds or performance standards during the hours of 7:00 a.m. and 7:00 p.m., except Sundays and federal holidays, by both the San Bernardino County and city of Twentynine Palms Development Codes. While noise-sensitive land uses are located in the immediate vicinity of the project, Mitigation Measure N-1 would ensure that a variance or approval be garnered by San Bernardino County and the city of Twentynine Palms for all construction noise occurring outside of these exempt hours and not consistent with County Development Code Section 83.01.080 and/or City Development Code Chapter 19.74.090 exemptions. The incorporation of Mitigation Measure N-1 would ensure that project-related construction noise that may result in substantial temporary or periodic increases in ambient noise levels would be exempt or a variance be obtained. As such, while project-related construction noise may result in substantial temporary or periodic increases in ambient noise levels, with the incorporation of Mitigation Measure N-1, this impact would be reduced to a less than significant level.

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 expose people residing or working in the project area to excessive noise levels?

NO IMPACT. The proposed project is located approximately five miles west of Twentynine Palms Airport, which is the nearest public airport to the site (Twentynine Palms, 2012b). Private airports in the project vicinity include Cones Field Airport (located approximately 1.5 miles northeast of the project site), Bauer Airport (located approximately 2 miles north-northwest of the project site), Crosswinds Airport (located approximately 3 miles northeast of the project site), and Dick Dale Sky ranch Airport (located approximately 4.2 miles northeast of the project site) (Twentynine Palms, 2012b). Additionally, the proposed project is also located approximately seven miles south of the nearest boundary of the Marine Corps Air Ground Combat Center at Twentynine Palms, which operates military based flights out of this base (City of Twentynine Palms, 2012b).

The proposed project is not located within the site boundary of any of these aviation facilities. Additionally, due to the distance of the proposed project to these aviation facilities, the limited duration of construction (13 months), and the nature of operational activities (flood control detention basin with

no permanent residential housing), neither construction nor operation would subject people residing or working in the project area to excessive aviation-generated noise levels nor would it be inconsistent with the Twentynine Palms Airport Comprehensive Land Use Plan (San Bernardino County, 1992).

f. For a project within the vicinity of a private air strip, would the project expose people residing or working in the project area to excessive noise levels?

NO IMPACT. As discussed above in C.12 (e), the proposed project is not located within the site boundary of any private aviation facilities. Additionally, due to the distance of the proposed project to these facilities, neither construction nor operation would subject people residing or working in the project area to excessive aviation-generated noise levels.

C.13 Population and Housing

POPULATION AND HOUSING

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

a. Would the project 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)?

NO IMPACT. Construction activities associated with the proposed project would last approximately 13 months and would be performed by the County of San Bernardino’s construction crews or contractors. Therefore, construction would be short-term and temporary, and construction personnel are expected to reside either in the County or in the immediate vicinity of the County. It is expected that all construction workers would commute to the proposed project site from surrounding communities. As such, proposed project construction would not induce an increase in population levels or a decrease in available housing, and no impacts to existing or future population growth levels would occur as a result of construction of the proposed project.

Once completed, maintenance levels are not anticipated to increase from existing conditions as a result of this proposed project. Therefore, operation would have no impact with respect to induced population.

b. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

NO IMPACT. Donnell Basin is an interim flood control facility that does not contain any habitable structures. The project site is primarily surrounded by residential development, but no housing would be removed or temporarily displaced as part of the proposed project. Therefore, implementation of the proposed project would not result in the displacement of housing, nor would it necessitate the construction of replacement housing. No impacts would occur.

c. Would the project displace substantial numbers of people necessitating the construction of replacement housing elsewhere?

NO IMPACT. As stated in Section C.13(b) above, there is no housing located within the proposed project site and no housing would be removed or temporarily displaced as part of the proposed project. No impacts would occur.

C.14 Public Services

PUBLIC SERVICES

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:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

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:

a) Fire protection?

LESS THAN SIGNIFICANT IMPACT. The San Bernardino County Fire Department, Division 5, provides fire suppression and emergency medical services to the project area. The primary fire station that would serve the project area is Twentynine Palms Station No. 41, located at 57201 Twenty-nine Palms Highway, Yucca Valley, California, approximately 13.5 miles west of the proposed project site. The proposed project site is located within a Local Responsibility Area (LRA) and designated as a Very High Fire Hazard Severity Zone by the California Department of Forestry and Fire Protection (CAL FIRE) (CAL FIRE, 2013). Construction activities, as described in Section A.1.4.2, are not expected to result in increased risk of wildfire as all vegetation would first be cleared within the project boundary. Furthermore, any unpaved construction access roads would also be cleared of any vegetation. In addition, watering activities associated with dust suppression would reduce the potential for any fire accident to occur with surrounding vegetation if encountered.

Fire protection could be required at the proposed project construction site in the event of a construction accident. However, the likelihood of an accident requiring such a response is unknown but is not expected to be significant as construction activities associated with the proposed project would only last approximately 13 months. Additionally, emergency access to the construction sites would be maintained during construction. Furthermore, as discussed in Section C.13(a), proposed project construction and operation would not induce an increase in population levels. Once completed, maintenance levels are not anticipated to increase from existing conditions as a result of this proposed project. The proposed project would have a less than significant impact with respect to disrupting existing fire service levels and would not require new or expanded fire facilities.

b) Police Protection?

LESS THAN SIGNIFICANT IMPACT. Police protection services in the proposed project area are provided by the San Bernardino County Sheriff-Coroner Department. The Morongo Basin Station, located at 6527 White Feather Road, Joshua Tree, California, approximately 7 miles west of the proposed project area, would be the primary substation to service the proposed project area. Although the potential is low, the project may attract vandals or other security risks, and construction activities could result in increases in traffic volumes along SR 62 that could increase demand on law enforcement services. However, the likelihood of requiring such a response is unknown but is not expected to be significant as construction activities associated with the proposed project would only last approximately 13 months. As discussed in Section A.1.4.2, an existing chain linked fence currently surrounds the basin, on the ROW boundary; this fence (or portions of this fence) would be removed to facilitate construction, but would be replaced along the ROW boundary to prevent or discourage public access during project operations. Furthermore, as discussed in Section C.13(a), proposed project construction and operation would not induce an increase in population levels. Once completed, maintenance levels are not anticipated to increase from existing conditions as a result of this proposed project. The proposed project would have a less than significant impact with respect to disrupting existing police service levels and would not require new or expanded police facilities.

c) Schools?

LESS THAN SIGNIFICANT IMPACT. As discussed in Section C.13(a), proposed project construction and operation would not induce an increase in population levels that could adversely affect local school service levels or require new or expanded school facilities. Impacts on schools would be less than significant.

d) Parks?

LESS THAN SIGNIFICANT IMPACT. As discussed in Section C.13(a), proposed project construction and operation would not induce an increase in population levels. Consequently, the proposed project would not increase population in a manner that would result in additional demand for park facilities. Impacts on parks would be less than significant.

e) Other Public Facilities?

LESS THAN SIGNIFICANT IMPACT. As discussed in Section C.13(a), proposed project construction and operation would not induce an increase in population levels. Consequently, the proposed project would not increase population in a manner that would substantially affect public facilities. The proposed project is expected to result in less than significant impacts on public services, such as post office and library services.

C.15 Recreation

RECREATION

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

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?*

NO IMPACT. An increase in use of existing recreational facilities could be spurred by population growth, which increases use of existing recreational resources. Such a demand on these resources could result in the physical deterioration of the facilities. However, as discussed in the Population and Housing section, the proposed project is not expected to induce either short-term or long-term population growth, either during project construction or operation. No additional housing is proposed which would increase local population nor demand on existing recreational facilities because there would be no increased need for these resources.

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?*

NO IMPACT. Construction of the proposed project would include deepening of the existing interim detention basin, re-use and/or disposal of excavated sediments, construction of basin embankments, outlet works and spillway, installation of internal access roads, and alterations to the existing Twentynine Palms Channel and Split Rock Avenue crossing. The proposed project does not include construction of recreational facilities, nor does it require the expansion of existing recreational facilities. As such, no adverse physical impacts on the environment would be generated by recreational facilities resulting from the proposed project.

C.16 Transportation/Traffic

TRANSPORTATION AND TRAFFIC

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Conflict with adopted policies, plans, or programs supporting regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED. State Route 62 (SR-62) provides regional access to the project site. As discussed in Section A.1.4.2, Mesquite Springs Road and Split Rock Avenue would provide direct site access and be used to transport construction vehicles, equipment, and materials to and from the proposed project site, via SR-62. The City of Twentynine Palms designates both SR-62 and Mesquite Springs Road as arterial roadways, while Split Rock Avenue is designated as a collector roadway (City of Twentynine Palms, 2012). As discussed in Section A.1.4.2, the haul routes for trucks transporting construction-related materials are assumed to be a 40-mile round trip, with construction of the project expected to last approximately 13 months. The number of on road vehicles is shown in Table A.1-2 (Construction Equipment).

The following outlines applicable plans, ordinances or policies establishing measures of effectiveness for the performance of the proposed project area circulation system:

- The County of San Bernardino 2007 General Plan Circulation and Infrastructure Element (San Bernardino County, 2007) contains goals and policies pertaining to all modes of transportation, including mass transit and non-motorized travel. However, the goals and policies contained within

are not applicable to the proposed project as they are directed toward guiding development of transportation facilities and do not contain any significance thresholds or performance standards for project construction-related traffic on public roadways.

- The San Bernardino Association of Governments (SANBAG) has a number of countywide transportation plans, including the Comprehensive Transportation Plan (CTP) and the Regional Transportation Plan (RTP) (SANBAG, 2013). Currently, both documents are in the process of being updated. In reviewing the applicable 2008 CTP and 2008 RTP, no significance thresholds or performance standards for public roadways were identified as applicable to the proposed project.
- The City of Twentynine Palms General Plan Circulation Element (City of Twentynine Palms, 2012) contains goals and policies pertaining to all modes of transportation, including mass transit and non-motorized travel. However, the goals and policies contained within are not applicable to the proposed project as they are directed toward guiding development of transportation facilities and do not contain any significance thresholds or performance standards for project construction-related traffic on public roadways.

Proposed project construction activities would not require any temporary closures of public roadways. However, construction workers traveling to the site as well as construction-related truck trips would generate daily traffic volumes to the area that could impact current operating conditions of utilized roadways. As shown in Table A.1-2, truck trips associated with loading and hauling of excess soil would be the primary source of daily truck trips. Based on the data provided in Table A.1-2 and that utilized for vehicle trips in the air quality analysis, the following summarizes the maximum daily round trips during proposed project construction:

- Employee Vehicle Daily Round Trips: 26
- Fuel Truck Daily Round Trips: 1
- Haul Truck Daily Round Trips: 152

Based on the above, a maximum of 179 daily round trips (358 total daily trips) would occur on public roadways as a result of construction worker commute and construction-related vehicle trips. The main roadway to access the proposed project area and site will be SR-62. The most recently published average daily traffic (ADT) for SR-62 at Adobe Road (nearest segment of SR-62 to the project) was 11,000 vehicle trips (Caltrans, 2011). Based on this ADT for SR-62 near the proposed project site, the temporary daily increase of 358 total daily trips would account for a 3.3 percent increase over this existing ADT volume. Because this increase is limited to the construction period (temporary) and considered a nominal increase to the ADT, construction-related daily trips would not significantly impact any applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system. However, Mitigation Measure T-1 will ensure that the impacts of construction-related vehicle trips associated with the proposed project are reduced to a less than significant level.

As discussed in Section A.1.4.3, once constructed, maintenance of the proposed project site is not anticipated to increase from existing conditions. As such, operation of the proposed project would not generate any new operational vehicle trips and would be compliant with all applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system.

Mitigation Measures

- T-1* Prior to the issuance of grading or building permits, the San Bernardino County Flood Control District shall prepare and submit a Construction Traffic Control Plan to the City

of Twentynine Palms and to the California Department of Transportation for review. The Construction Traffic Control Plan must be prepared in accordance with both the Caltrans Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook (WATCH) Manual and shall include detailed information on the following:

1. Timing and schedule of heavy equipment and building materials deliveries;
2. Any use of directing construction traffic with a flag person;
3. Any placement of temporary signing, lighting, and traffic control device placement as required; including, but not limited to: appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic;
4. Determination of the need for construction work hours and arrival/departure times outside peak traffic periods;
5. Ensure access for emergency vehicles to the project site and through the immediate project area;
6. Identification of vehicle safety procedures for entering and exiting site access roads;
7. The need for providing advance notification to affected property owners, businesses, residents, etc. of possible driveway blockages or other access obstructions and implement alternate access and parking provisions where necessary
8. Identification of vehicle safety procedures in the event of roadway flooding; and
9. Provisions for the establishment of a traffic control coordinator. The traffic control coordinator shall be responsible for responding to any local complaints about project construction and operational traffic concerns. The traffic control coordinator shall determine the cause of the traffic complaint and shall be required to implement reasonable measures to resolve the complaint. Signs posted along the project construction and operations access routes shall list the telephone number for the traffic control coordinator.

b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

LESS THAN SIGNIFICANT IMPACT. As discussed in Section A.1.4.2, a maximum of a 40-mile round trip for materials haul routes is assumed. Because details of this route are not established, it is unknown what Congestion Management Plan (CMP) intersections could be utilized by proposed project construction-related vehicles. However, because SR-62 is identified as a CMP roadway within the San Bernardino County CMP through Twentynine Palms (SANBAG, 2007), this roadway will be utilized for the CMP analysis as it provides primary regional and local access to the project site. For all designated CMP roadways, level of service (LOS) E performance standards must be met for all roadway segments (SANBAG, 2007). As described within the San Bernardino County CMP, LOS E represents operating conditions “at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement” (SANBAG, 2007 and Twentynine Palms, 2012).

As discussed above in C.16 (a), 2011 ADT for SR-62 at Adobe Road was 11,000 (Caltrans, 2011). As further discussed above in C.16 (a), based on this ADT for SR-62 near the proposed project site, a

maximum of 358 total temporary construction-related daily trips would not decrease the existing capacity of this CMP roadway segment. As such, the proposed project is not expected to decrease the existing LOS of SR-62 and a Traffic Impact Analysis (TIA) report has not been prepared. As discussed in Section A.1.4.3, once constructed, maintenance levels of the proposed project site are not anticipated to increase from existing conditions. Therefore, operation and maintenance of the project would not generate any ADT. The proposed project would result in a less than significant impact to SR-62 and is considered consistent with the San Bernardino County CMP.

c. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

NO IMPACT. The proposed project is located approximately five miles west of Twentynine Palms Airport, which is the nearest public airport to the site (City of Twentynine Palms, 2012). Private airports in the project vicinity include Cones Field Airport (located approximately 1.5 miles northeast of the project site), Bauer Airport (located approximately 2 miles north-northwest of the project site), Crosswinds Airport (located approximately 3 miles northeast of the project site), and Dick Dale Sky ranch Airport (located approximately 4.2 miles northeast of the project site) (City of Twentynine Palms, 2012). Additionally, the proposed project is also located approximately seven miles south of the nearest boundary of the Marine Corps Air Ground Combat Center at Twentynine Palms, which operates military based flights out of this base (City of Twentynine Palms, 2012).

The proposed project is not located within the site boundary of any of these aviation facilities. Additionally, due to the distances of these facilities and the fact that all proposed project activities will occur at or below ground level, the proposed project would have no impact to existing air traffic patterns or result in a change in air traffic levels that could result in a substantial safety risk.

d. Would the project substantially increase hazards because of a design feature or incompatible uses?

LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED. As discussed in Section A.1.4.2, Mesquite Springs Road and Split Rock Avenue would provide direct site access and be used to transport construction vehicles, equipment, and materials to and from the proposed project site, via SR-62. The source(s) of material for project construction is not known at this time, but it is reasonably assumed that only roads without weight or use restrictions will be used as possible access routes. Construction-related egress and ingress from the proposed project site into public roadways is not anticipated to create any hazards as the area will be free of vegetation with workers having full vision of oncoming traffic. Construction vehicle queuing is expected to be minimal at egress/ingress points. As discussed in Section A.1.4.2, temporary disturbance and staging areas for the vehicles and equipment identified above would occur within the basin's permanent footprint and the existing floodway.

As identified within the City of Twentynine Palms General Plan Circulation Element, flooding hazards are a major physical hazard that impacts the City's circulation system. Streets constructed within floodplains and washes are typically severely impacted by floods during storms. Mitigation Measure T-1 will ensure the identification of project-related vehicle safety procedures in the event of roadway flooding, thus reducing this potential impact to a less than significant level. Once completed, no permanent transportation features would be constructed beyond existing site access.

e. Would the project result in inadequate emergency access?

LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED. As discussed above in checklist question C.16 (a) and (d), the proposed project would not generate construction trips that could

significantly alter the existing capacity of utilized roadways and would not require temporary roadway lane closures that could impede emergency access. Mitigation Measure T-1 will ensure access for emergency vehicles to the project site and through the immediate project area, thus reducing this potential impact to a less than significant level. Once completed, no permanent transportation features would be constructed beyond existing site access, resulting in no impact to emergency access to and through the project site area.

f. Conflict with adopted policies, plans, or programs supporting regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

LESS THAN SIGNIFICANT IMPACT. The following outlines applicable plans, ordinances or policies regarding public transit, bicycle, or pedestrian facilities:

- The County of San Bernardino 2007 General Plan Circulation and Infrastructure Element (San Bernardino County, 2007a) contains goals and policies pertaining to public transit, bicycle, and pedestrian facilities. However, the goals and policies contained within are not applicable to the proposed project as they are directed toward guiding development of transportation facilities and do not contain any significance thresholds or performance standards for public transit, bicycle, or pedestrian facilities.
- The City of Twentynine Palms General Plan Circulation Element (City of Twentynine Palms, 2012) contains goals and policies pertaining to all modes of transportation, including mass transit and non-motorized travel. However, the goals and policies contained within are not applicable to the proposed project as they are directed toward guiding development of transportation facilities and do not contain any significance thresholds or performance standards for public transit, bicycle, or pedestrian facilities.
- The SANBAG CTP and RTP contain goals and policies pertaining to public transit, bicycle, and pedestrian facilities. (SANBAG, 2013). In reviewing the applicable 2008 CTP and 2008 RTP, no significance thresholds or performance standards for public transit, bicycle, or pedestrian facilities were identified as applicable to the proposed project.

Proposed project construction activities would not require any temporary closures of public roadways or travel lanes that could impact public transportation, bicycle, or pedestrian movement. Once completed, no permanent transportation features would be constructed beyond existing site access. Therefore, the proposed project would result in a less than significant impact to utilized roadways (SR-62, Mesquite Springs Road, and Split Rock Avenue) and is considered consistent with adopted policies, plans, or programs supporting public transit, bicycle, and pedestrian facilities.

C.17 Utilities and Service Systems

UTILITIES AND SERVICE SYSTEMS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Result in a determination by the wastewater treatment provider which 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

a. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

NO IMPACT. During construction of the proposed project, wastewater generation would be limited to construction workers and would be contained within portable toilet facilities and disposed of at an approved site. During operation, the proposed project would not generate wastewater. The proposed project would have no impact with respect to exceeding wastewater treatment requirements.

b. Would the project require, or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

NO IMPACT. As described above, during construction, wastewater would be contained within portable toilet facilities and disposed of at an approved site. Operation of the project is not expected to generate wastewater or require the use of water. Because no new or expanded water or wastewater facilities would be required to serve the proposed project, no impacts would occur.

c. Would the project require, or result in the construction of, new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

LESS THAN SIGNIFICANT IMPACT. During construction of the proposed project, a water source would be required for soil compaction, dust suppression, concrete/grout/equipment wash-down, concrete placement preparation, and possibly miscellaneous concrete or grout production. Because the work

would occur within the existing interim Donnell Basin, a depression, it is expected that all construction-related water would drain into the Basin. As discussed in Section A.1.5, all applicable local, State and federal requirements regarding stormwater drainage and water quality would be incorporated into construction of the project, including obtaining a National Pollutant Discharge Elimination System (NPDES) Permit (SWPPP) from the Colorado River Regional Water Quality Control Board (RWQCB). As such, construction is expected to have a less than significant impact with respect to the stormwater drainage system and would not require expansion of existing facilities beyond that proposed by the project.

When completed, operation of the proposed project will increase the capacity of Donnell Basin and reduce downstream hazards associated with flooding, sedimentation, and debris. By increasing the capacity of Donnell Basin, stormwater flows would be detained and discharged more slowly to downstream facilities, thereby increasing flood hazard protection. As discussed in Section A.1.5, all applicable local, State and federal requirements would be incorporated into construction of the project. Therefore, the proposed project is designed to accommodate existing and projected stormwater flows and would not require the construction of additional new or expanded downstream stormwater facilities. Less than significant operational impacts would occur.

d. Would the project have sufficient water supplies available to serve the proposed project from existing entitlements and resources, or would new or expanded entitlements be needed?

LESS THAN SIGNIFICANT IMPACT. As described in Section A.1.4.2, during construction of the proposed project, a water source would be required for soil compaction, dust suppression, concrete/grout/equipment wash-down (in designated areas per the SWPPP, refer to Section A.1.5), concrete placement preparation, and possibly miscellaneous concrete or grout production. Based upon material to be compacted and dust control for the duration of the proposed project, between 15 and 30 acre-feet of water may be used during construction. This water would be provided by the Twentynine Palms Water Agency. The availability of construction water would be verified prior to the issuance of a construction contract. As such, this analysis assumes sufficient water supplies are available to serve the proposed project from existing entitlements and resources, and no new or expanded water entitlements would be required, resulting in a less than significant impact.

e. Would the project result in a determination by the wastewater treatment provider that serves or may serve the Proposed Project that it has adequate capacity to serve the Proposed Project's projected demand in addition to the provider's existing commitments?

NO IMPACT. As described above in checklist questions C.17 (a) and (b), wastewater generated during construction would be contained within portable toilet facilities and disposed of at an approved site and no wastewater would be generated during operation and maintenance. Due to the temporary and short-term nature of construction activities, the volume of wastewater generated during construction would not exceed the capacity of wastewater treatment providers serving the portable toilet disposal site. No impact would occur.

f. Would the project be served by a landfill with sufficient permitted capacity to accommodate the proposed project's solid waste disposal needs?

LESS THAN SIGNIFICANT IMPACT. As described in Section A.1.4.2, of the current estimate of 430,000 cubic yards (CY) of material to be excavated, it is anticipated that 356,850 bank yards would be re-used in the proposed project embankment. Final quantity of material to be reused will depend upon material composition, to be assessed during construction. Material that is not suitable for reuse will be disposed of at an approved off-site facility, or will be used as permanent fill on properties adjacent to the south of

Donnell Basin (optional disturbance area), in order to raise and level the elevation of these areas. Therefore, under worst-case conditions, approximately 73,150 CY of excavated material may require disposal at landfill(s).

The County of San Bernardino Solid Waste Management Division (SWMD) is responsible for the operation and management of the County's solid waste disposal system, which consists of five regional landfills and nine transfer stations. Excavated soil not reused and other minimal construction wastes generated during construction of the proposed project would be taken to Twentynine Palms Transfer Station (operated by a private operator, Athens Disposal) for disposal. Waste would then be transferred to either an Athens-operated landfill or a SWMD facility. The majority of SWMD and Athens Disposal landfills are permitted to accept construction refuse (like soil spoils) and are assumed to have sufficient combined throughput and capacity to accommodate waste generated by the proposed project. Once operational, the proposed project would not generate any solid waste. Because construction waste is a short-term generation, any impacts to these landfills are considered to be less than significant.

g. Would the project comply with federal, State, and local statutes and regulations related to solid waste?

LESS THAN SIGNIFICANT IMPACT. The proposed project would generate solid waste during construction of the project, thus requiring the consideration of waste reduction and recycling measures. The 1989 California Integrated Waste Management Act (AB 939) requires San Bernardino County to attain specific waste diversion goals. In addition, the California Solid Waste Reuse and Recycling Access Act of 1991, as amended, requires expanded or new development projects to incorporate storage areas for recycling bins into the proposed project design. As discussed in Section A.1.4.2, of the current estimate of 430,000 bank yards of material to be excavated, it is anticipated that 356,850 CY would be re-used in the proposed project embankment while other material will be used as permanent fill on properties adjacent to the south of Donnell Basin. Final quantity of material to be re-used will depend upon material composition, to be assessed during construction. However, the proposed project would reuse and recycle as much excavated material as feasible. Therefore, the proposed project is considered to be consistent with AB 939 and the California Solid Waste Reuse and Recycling Access Act of 1991, resulting in less than significant impacts with respect to compliance with these applicable regulations.

C.18 Mandatory Findings of Significance

MANDATORY FINDING OF SIGNIFICANCE	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Does the project have impacts that are individually limited, but cumulatively considerable? (<i>Cumulatively considerable</i> 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.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

- 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?**

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. As described in Section C.4 (Biological Resources), the proposed project could result in impacts to habitats that support sensitive species, riparian habitats, and wetlands. However, implementation of mitigation measures would reduce these impacts to a less-than-significant level.

Section C.5 (Cultural Resources) shows the project will not have any direct or indirect (visual, noise/vibration, dust) impacts on any significant archaeological resources. However, due to the proximity of the project area to the Oasis of Mara, there is a possibility cultural materials are present below the modern ground surface. Nonetheless, implementation of mitigation measures would reduce this impact to a less-than-significant level.

Mitigation Measures

BIO-1 Desert tortoise:

- a. A qualified desert tortoise biologist will survey the site prior to initial site disturbance to verify that no desert tortoises are present.
- b. A temporary desert tortoise exclusion fence will be constructed around the project site perimeter to prevent desert tortoises from entering the site during construction. The existing chain-link fence around Donnell Basin may be used if it is retrofitted to eliminate gaps between the bottom of the fence and the ground. If project activities extend into the optional disturbance area south of Donnell Basin, then that area will also be fenced. The fence will be maintained throughout construction to ensure there are no gaps that would allow a tortoise to enter the site.

- c. If a desert tortoise is found within the project site during construction, then any project activities that could affect the tortoise will halt pending consultation with the California Department of Fish and Wildlife (CDFW) and the US Fish and Wildlife Service (USFWS). No one will be authorized to handle desert tortoises, except under authorization by the CDFW and the USFWS or to move a tortoise out of imminent danger, such as off of a paved road.

BIO-2 Burrowing owl: A qualified biologist will survey the site in advance of vegetation and soil clearing to determine burrowing owl presence or absence. This survey may be done concurrently with the desert tortoise survey, above. If one or more burrowing owls are present on the site outside of the nesting season (September 1 to January 31), then the California Department of Fish and Wildlife (CDFW) will be consulted and the qualified biologist may be authorized to exclude them from the site using passive exclusion methods described in the most recent CDFW staff report on burrowing owl mitigation (CDFG, 2012). If burrowing owls are present on the site during nesting season (February 1 through August 31), then construction will be either be postponed until nesting is completed, or no disturbance will be allowed within an appropriate buffer area to be established by a qualified biologist in accordance with the CDFW staff report on burrowing owl mitigation (CDFG, 2012).

BIO-3 Nesting birds: One of the two measures below will be implemented to prevent take of protected birds or their nests.

- a. Vegetation removal and initial grading will be completed outside the breeding season (i.e., no removal of potential nesting habitat from February 15 through August 15), or
- b. Prior to beginning vegetation removal, but after survey flagging is in place marking the limits of grading, a qualified biologist will confirm that no birds are nesting in or adjacent to areas to be disturbed. If native birds are nesting on the site, then construction will be postponed until nesting is completed or the qualified biologists will designate appropriate avoidance buffers around nests to protect nesting birds. No project related disturbance will be allowed within these buffers.

BIO-4 Environmental training: Environmental training will be given by a District Ecological Resource Specialist or qualified biologist to all construction crews and contractors prior to starting work on the project. The environmental training will include a review of the special-status species and other sensitive resources that could exist in the project site and vicinity, the locations of the sensitive biological resources, their legal status and protections, and mitigation measures to be implemented for avoidance of these sensitive resources. A record of all personnel trained will be maintained.

BIO-5 Animals: No pets will be permitted in the project site. Workers will not be permitted to feed, harm, approach, harass, or handle wildlife at any time, except to move animals out of harm's way, and only as directed by a District's Ecological Resource Specialist or qualified biologist.

BIO-6 Trash, refuse, concrete, and other materials: All trash and food materials will be properly contained within vehicles or closed refuse bins while on the site, and will regularly be removed from the site (at least on a weekly basis) for proper disposal. No raw cement, concrete or washings thereof, asphalt, paint, oil, solvents, or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources, shall

be disposed of on-site or allowed to spill onto soil. Cleanup of any spilled material shall begin immediately.

BIO-7

Native plants:

- a. All areas temporarily disturbed during project construction, that are not expected to be impacted by on-going maintenance such as unpaved access roads and the basin floor, will be hydroseeded with a seed mix composed of native plants found in the adjacent plant community. Consistent with the City of Twentynine Palms Development Code, some of the native species used in the seed mix will be fast-germinating species such as annuals and grasses to reduce soil erosion and dust. Other shrub species will also be included to create wildlife habitat. Species recommended for inclusion in the hydroseed mix include desert needlegrass (*Stipa speciosa*), Indian ricegrass (*Stipa hymenoides*), six-week fescue (*Vulpia octoflora*), cheesebush (*Ambrosia salsola*), all scale (*Atriplex polycarpa*), brittlebush (*Encelia farinosa*) and various native desert annuals.

- 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.)***

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. CEQA defines a cumulative impact as an effect that is created as a result of the combination of the proposed project together with other projects (past, present, or future) causing related impacts. Cumulative impacts of a project need to be evaluated when the project's incremental effect is cumulatively considerable and, therefore, potentially significant.

As discussed in preceding Sections C.1 (Aesthetics) through C.17 (Utilities and Service Systems), many of the potential impacts of the proposed project would occur during construction, with few lasting operational effects. Because the construction-related impacts of the proposed project would be temporary and localized, they would only have the potential to combine with similar impacts of other projects if they occur at the same time and in close proximity. Construction impacts caused by the proposed project (primarily related to air quality, biological resources, noise, and traffic) could combine with similar effects of other projects being built in the area. However, impacts would be less than significant with implementation of mitigation measures.

Mitigation Measures

AQ-1 Fugitive Dust Control. The following dust control measures shall be implemented:

- a. The travel on unpaved areas will be minimized and traffic speeds on unpaved areas/roads shall be limited to 15 miles per hour for all on-road and off-road equipment.
- b. All onsite unpaved travel routes/roads shall be effectively stabilized using water at least three times daily, or by using non-toxic soil stabilizers that shall not increase any other environmental impacts including loss of vegetation. Proposed soil stabilizer(s) Material Safety Data Sheet (MSDS) and application strategy (method, frequency, and quantity) shall be provided to the San Bernardino County Flood Control District for approval prior to use.
- c. All material excavated or graded will be sufficiently watered to prevent excessive dust. Watering will occur as needed with complete coverage of disturbed areas.

- d. The excavated soil piles, if not covered, shall be watered at an adequate frequency, or sprayed with an environmentally safe chemical stabilizer, to create stabilized surfaces that will minimize wind erosion emissions.
- e. Construction activities that occur on unpaved surfaces shall be discontinued during windy conditions when those activities cause visible dust plumes that are transported beyond the site boundary or that remain visible within 400 feet of any occupied residence, school, or public recreation area, or that otherwise conflict with the requirements of the Mojave Desert Air Quality Management District Rule 403.2 (C)(2)(f) under rule defined high wind conditions (wind gusts exceeding 25 mph or average hourly winds exceeding 15 mph).
- f. A wheel-washing system shall be installed and used to remove bulk material from tires and vehicle undercarriages before vehicles exit the project site. Track-out on public paved roads shall not extend 25 feet or more from an active operation and track-out shall be removed at the conclusion of each workday.
- g. All areas to be excavated shall be watered prior to excavation to ensure that the excavated materials are moist, and hauled materials shall be moist while being loaded into or out of dump trucks.
- h. All haul trucks hauling soil, sand, and other loose materials to or from the project site shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).
- i. Drop heights should be minimized when loading into or unloading out of haul trucks, and gate seals should be tight on haul trucks.
- j. Disturbed areas shall be minimized, and after active construction activity has ceased, disturbed areas shall be stabilized using non-toxic soil stabilizers approved for project use and shall be revegetated as soon as possible after disturbance.
- k. Other fugitive dust control measures shall be implemented as necessary to comply with the requirements of the Mojave Desert Air Quality Management District Rules 401, 402, and 403.2 and City of Twentynine Palms Development Code §19.64.030.

AQ-2 Off-road Equipment Mitigation. The emissions from the onsite off-road construction equipment shall be controlled by implementing the following:

- a. All off-road construction diesel engines not registered under California Air Resources Board's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower or more and 750 horsepower or less, shall meet, at a minimum, the Tier 3 California Emission Standards for Off-road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, Section 2423(b)(1). If a Tier 3 or Tier 3-equivalent engine is not available for a particular item of equipment, Tier 2 compliant engines shall be allowed on a case by case basis, as determined by the San Bernardino County Flood Control District. Off-road equipment with diesel engines larger than 750 horsepower shall meet Tier 2 California Emission Standards.
- b. All equipment shall be turned off when not in use. Engine idling of all equipment shall be minimized.
- c. All equipment engines shall be maintained in good operating condition and in proposed tune per manufacturers' specification.

BIO-1 *Desert tortoise:*

- a. A qualified desert tortoise biologist will survey the site prior to initial site disturbance to verify that no desert tortoises are present.
- b. A temporary desert tortoise exclusion fence will be constructed around the project site perimeter to prevent desert tortoises from entering the site during construction. The existing chain-link fence around Donnell Basin may be used if it is retrofitted to eliminate gaps between the bottom of the fence and the ground. If project activities extend into the optional disturbance area south of Donnell Basin, then that area will also be fenced. The fence will be maintained throughout construction to ensure there are no gaps that would allow a tortoise to enter the site.
- c. If a desert tortoise is found within the project site during construction, then any project activities that could affect the tortoise will halt pending consultation with the California Department of Fish and Wildlife (CDFW) and the US Fish and Wildlife Service (USFWS). No one will be authorized to handle desert tortoises, except under authorization by the CDFW and the USFWS or to move a tortoise out of imminent danger, such as off of a paved road.

BIO-2 *Burrowing owl:* A qualified biologist will survey the site in advance of vegetation and soil clearing to determine burrowing owl presence or absence. This survey may be done concurrently with the desert tortoise survey, above. If one or more burrowing owls are present on the site outside of the nesting season (September 1 to January 31), then the California Department of Fish and Wildlife (CDFW) will be consulted and the qualified biologist may be authorized to exclude them from the site using passive exclusion methods described in the most recent CDFW staff report on burrowing owl mitigation (CDFG, 2012). If burrowing owls are present on the site during nesting season (February 1 through August 31), then construction will be either be postponed until nesting is completed, or no disturbance will be allowed within an appropriate buffer area to be established by a qualified biologist in accordance with the CDFW staff report on burrowing owl mitigation (CDFG, 2012).

BIO-3 *Nesting birds:* One of the two measures below will be implemented to prevent take of protected birds or their nests.

- a. Vegetation removal and initial grading will be completed outside the breeding season (i.e., no removal of potential nesting habitat from February 15 through August 15), or
- b. Prior to beginning vegetation removal, but after survey flagging is in place marking the limits of grading, a qualified biologist will confirm that no birds are nesting in or adjacent to areas to be disturbed. If native birds are nesting on the site, then construction will be postponed until nesting is completed or the qualified biologists will designate appropriate avoidance buffers around nests to protect nesting birds. No project related disturbance will be allowed within these buffers.

BIO-4 *Environmental training:* Environmental training will be given by a District Ecological Resource Specialist or qualified biologist to all construction crews and contractors prior to starting work on the project. The environmental training will include a review of the special-status species and other sensitive resources that could exist in the project site and vicinity, the locations of the sensitive biological resources, their legal status and protections, and mitigation measures to be implemented for avoidance of these sensitive resources. A record of all personnel trained will be maintained.

- BIO-5 Animals:* No pets will be permitted in the project site. Workers will not be permitted to feed, harm, approach, harass, or handle wildlife at any time, except to move animals out of harm's way, and only as directed by a District's Ecological Resource Specialist or qualified biologist.
- BIO-6 Trash, refuse, concrete, and other materials:* All trash and food materials will be properly contained within vehicles or closed refuse bins while on the site, and will regularly be removed from the site (at least on a weekly basis) for proper disposal. No raw cement, concrete or washings thereof, asphalt, paint, oil, solvents, or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources, shall be disposed of on-site or allowed to spill onto soil. Cleanup of any spilled material shall begin immediately.
- BIO-7 Native plants:*
- a. All areas temporarily disturbed during project construction, that are not expected to be impacted by on-going maintenance such as unpaved access roads and the basin floor, will be hydroseeded with a seed mix composed of native plants found in the adjacent plant community. Consistent with the City of Twentynine Palms Development Code, some of the native species used in the seed mix will be fast-germinating species such as annuals and grasses to reduce soil erosion and dust. Other shrub species will also be included to create wildlife habitat. Species recommended for inclusion in the hydroseed mix include desert needlegrass (*Stipa speciosa*), Indian ricegrass (*Stipa hymenoides*), six-week fescue (*Vulpia octoflora*), cheesebush (*Ambrosia salsola*), all scale (*Atriplex polycarpa*), brittlebush (*Encelia farinosa*) and various native desert annuals.
- CR-1* If previously unidentified cultural resources are unearthed during construction activities, construction work in the immediate area of the find shall be halted and directed away from the discovery until a qualified archaeologist assesses the significance of the resource. The archaeologist, in consultation with the San Bernardino County Flood Control District, shall make the necessary plans for treatment of the find(s) and for the evaluation and mitigation of impacts if the finds are found to be historically significant according to the California Environmental Quality Act (California Environmental Quality Act Guidelines Section 15064.5 (a)).
- CR-2* Prior to ground disturbing activities, all construction personnel shall be trained, by a qualified archaeologist, regarding the recognition of possible buried cultural resources (i.e., prehistoric and/or historical artifacts, objects, or features) and protection of all archaeological resources during construction, prior to the initiation of construction or ground-disturbing activities. Training shall inform all construction personnel of the procedures to be followed upon the discovery of cultural materials. All personnel shall be instructed that unauthorized removal or collection of artifacts is a violation of State law.
- CR-3* If human remains are unearthed during construction activities, construction work in the immediate area of the discovery shall be halted and directed away from the discovery until the County coroner can determine whether the remains are those of a Native American. If they are those of a Native American, the following would apply:
- a. The coroner shall contact the Native American Heritage Commission.
 - b. If discovered human remains are determined to be Native American remains, and are released by the coroner, these remains shall be left in situ and covered by fabric or other temporary barriers.

- c. The human remains shall be protected until the County, the land owner, and the Most Likely Descendant (MLD) appointed by the Native American Heritage Commission come to a decision on the final disposition of the remains.

According to the California Health and Safety Code, six (6) or more human burials at one (1) location constitute a cemetery (Section 8100), and willful disturbance of human remains is a felony (Section 7052).

HYD-1 Compliance with water quality permits. Prior to construction, the San Bernardino County Flood Control District shall contact all agencies with jurisdiction over the project and determine whether or not each agency requires a permit associated with water resources for the project. Where a permit is required, the San Bernardino County Flood Control District shall ensure that it is prepared and approved of prior to the onset of construction. Copies of all permits shall be maintained on-site during the construction period.

HYD-2 Accidental spill control and environmental training. Prior to the onset of construction of the project, the San Bernardino County Flood Control District shall prepare an accidental spill control plan and environmental training program which shall be implemented during the construction period. The plan shall include the following: define areas where hazardous materials would be stored, where trash would be placed, where rolling equipment would be parked, fueled and serviced, and where construction materials would be stored. The San Bernardino County Flood Control District shall prescribe hazardous materials handling procedures for reducing the potential for a spill during construction, and shall include an emergency response program to ensure quick and safe cleanup of accidental spills. These conditions may be included in the Stormwater Pollution Prevention Act (SWPPP) to be prepared for the project as identified in Section A.1.4.4 of this Initial Study.

HYD-3 Erosion Control Plan. An Erosion Control Plan shall be prepared for the project, and shall include best management practices (BMPs) to ensure that disturbed soils do not migrate within on- or off-site areas and do not result in siltation or sedimentation. Such BMPs may include but are not limited to: defining ingress and egress within the project site to control track-out, implementing a dust control program during construction, and properly containing stockpiled soil. The Erosion Control Plan shall be implemented during all soil-disturbing activities associated with the project.

N-1 Prior to construction, the project proponent shall obtain San Bernardino County and/or City of Twentynine Palms approval (exemption or variance) for all construction activities not exempt or not compliant with:

San Bernardino County Development Code Section 83.01.080 (Noise) and/or Section 83.01.090 (Vibration).

City of Twenty Nine Palms Development Code Chapter 19.74.090 (Noise) and/or Chapter 19.74.100 (Vibration).

PAL-1 Retention of a qualified paleontologist (Principal Investigator) and the preparation of a Paleontological Resources Management Plan (PRMP). Prior to the initiation of construction activities, a qualified paleontologist shall be retained to develop a PRMP for this project. This PRMP shall contain explanations of project geology, paleontological sensitivity, and procedures that will serve to comply with the State and County of San Bernardino's requirements in order to minimize or eliminate potential impacts to significant paleontological resources. Any available geotechnical or soils data, construction grading plans, and a construction schedule should be

provided to project paleontologists in order to ensure the most accurate data is used to determine monitoring procedures and locations. The qualified paleontologist shall participate in a pre-construction meeting with the San Bernardino County Department of Public Works staff and construction contractors for this project to ensure an understanding of any mitigation measures required during construction, and to establish proper communication procedures. Spot-checking to Full-time paleontological monitoring is recommended when, or if the project activities will impact Quaternary older alluvium. This will be discussed in the PRMP based on the most current available data.

The County of San Bernardino defines a qualified paleontologist as:

- Education: An advanced degree (Masters or higher) in geology, paleontology, biology or related disciplines (exclusive of archaeology).
- Professional experience: At least five years professional experience with paleontological (not including cultural) resources, including the collection, identification and curation of the resources.

PAL-2 Worker environmental awareness training prior to the commencement of ground disturbance. Before the initiation of ground disturbing activities, all construction personnel shall be trained regarding the recognition of possible subsurface paleontological resources and protection of all paleontological resources during construction. Training shall inform all construction personnel of the procedures to be followed upon the discovery of paleontological resources. This training should emphasize general paleontological items, including the paleontology and geology of the area, and should include pictures of typical fossils that can be found during construction, including vertebrate remains, invertebrates, and trace fossils. This training should emphasize applicable state, federal, and local laws, and include information on what to do in case an unanticipated discovery is made by a worker. All construction personnel should be informed of the possibility of encountering fossils, and instructed to immediately inform the field supervisor if any bones or other potential fossils are unearthed in the project area and a paleontological monitor is not present (for example, if a sensitive formation is encountered subsurface that is not mapped at the surface, thus not necessitating the presence of a paleontological monitor for this work). In such a case, workers should immediately cease all activity within a 20 foot radius of the discovery site and notify the Construction Manager. The qualified paleontologist shall be called to assess the find in order to examine and evaluate the fossils.

PAL-3 Paleontological monitoring in areas of moderate to high geologic sensitivity. Paleontological monitoring of earthmoving activities will be conducted on an as-needed basis, as described in the project Paleontological Resources Management Plan (PRMP), by the project qualified paleontologist during all earthmoving activities that may expose Quaternary older alluvium, and in accordance with San Bernardino County Museum recommendations and County of San Bernardino regulations. Earthmoving activities in areas of the project area where previously undisturbed strata will be buried but not otherwise disturbed will not be monitored. The project paleontologist shall inspect initial ground disturbance, and will have the authority to reduce monitoring once he/she determines the probability of encountering fossils has dropped below an acceptable level. Paleontological monitors shall be equipped to salvage fossils as they are unearthed, to avoid construction delays, and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. Monitors shall be empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Monitoring is not necessary if Quaternary older alluvium is not impacted, or if the qualified

paleontologist determines that Quaternary older alluvium encountered is not productive for fossils.

Paleontological resource monitoring of construction excavations involves field inspections of trenches, mass grading, spoils piles and all visible, exposed for occurrences of freshly exposed fossil remains. During construction excavation activities, the monitoring schedule and specific locations that can be inspected are dictated by field conditions including the number and locations of heavy equipment in the cut and amount of excavation activity.

PAL-4 Recovery of fossils. When fossils are discovered, the qualified paleontologist (or paleontological monitor) shall recover and fully document them. In the instance of an extended salvage period, the paleontologist shall work with the construction manager to temporarily direct, divert, or halt earthwork to allow recovery of fossil remains in a timely manner. If the find is too large to be managed by one monitor, additional assistance will be called upon to expedite the process. Because the potential for the recovery of small fossil remains, such as isolated mammal teeth, as determined by a qualified paleontologist, it may be necessary to collect bulk samples (up to 6,000 pounds) of sedimentary rock matrix. Screenwashing will only occur in the event of a significant discovery. The firm hired to conduct the paleontological monitoring should consult immediately with the County of San Bernardino Department of Public Works prior to collecting any bulk samples. Scientifically significant fossils of microscopic size consisting of vertebrates, invertebrates, plants, or trace fossils, may be located in sediments that produce significant finds. The locations of any significant discoveries should be sampled and washed on the project site, out of the way of construction activity, for maximum efficiency. The resultant matrix should be picked in the paleontological laboratory in order to fully document the microfaunal or microfloral diversity.

Paleontological monitors should always use caution when making decisions about significance in the field, and collect fossils if they are unsure of their significance. For example, when monitoring construction sites it is often difficult to see the full extent of a fossil being salvaged because it is collected partially encased in sedimentary matrix and as a result it may not be possible to determine the significance of a fossil specimen until it has been partially prepared. Generally, bone fragments lacking identifiable features (processes or definable skeletal structures) should not be collected, or should be discarded or used for educational or public outreach purposes if they are found to be non-significant once they have been partially prepared in the laboratory.

PAL-5 Fossil preparation, curation and reporting. Fossil remains collected during monitoring and salvage shall be cleaned, repaired, sorted, and catalogued as part of the mitigation program. When potentially scientifically significant fossil discoveries are made by paleontological monitors, they should be quickly and professionally explored, assessed and evaluated in order to minimize construction delays, and the Principal Investigator should be notified immediately. Additional paleontologists should be brought in to assist with the salvage as needed. Salvages may consist of the relatively rapid removal of small isolated fossils from an active cut, to hand quarrying of larger fossils over several hours, to excavations of large fossils or large numbers of smaller fossils from a bone bed over several days. The duration of each excavation is determined by the size, preservation, and number of fossils at each locality, and all excavations must be carried out in consultation with the project Construction Manager. As noted in *PAL-4*, should fossils extend beyond the project boundaries, the County of San Bernardino Department of Public Works shall be consulted in order to determine the feasibility of recovery.

Following fossil specimen preparation, all fossils should be inventoried and identified to taxon and element by a technical specialist, as necessary. Identification should be to the lowest taxonomic level possible. All fossils should be labeled with field locality number, collector, date of collection, taxon, and element description at a minimum. The properly inventoried fossil collection should then be analyzed taxonomically, taphonomically, biostratigraphically, and as appropriate depending upon the nature of the fossil collection and requirements of the designated repository. All data, including the results of the analysis and research on the fossil collection, should be compiled along with the fossil specimen inventory and detailed paleontological locality forms, maps and photos for inclusion in the paleontological mitigation report. The paleontological mitigation report should be prepared in accordance with industry standard reporting specifications and requirements and any contracted repositories (if applicable) upon the completion of field work, within 90 days of the completion of field work, or as negotiated on consultation, in compliance with San Bernardino County regulations and the requirements stipulated by the San Bernardino County Museum.

A final summary report shall be completed that outlines the results of the mitigation program. This report shall include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, photographs, and significance of recovered fossils. A qualified paleontologist shall prepare a report of findings made during all site grading activity with an appended itemized list of fossil specimens recovered during grading (if any). The report shall contain a report of findings made during all site grading activities and an appended itemized list of fossil specimens recovered during grading (if any) and proof of accession of fossil materials into the pre-approved museum repository. In addition, all appropriate fossil location information shall be submitted to the San Bernardino County for incorporation into their Regional Locality Inventories. All fossil specimens shall be curated at the San Bernardino County Museum in accordance with their standards and stipulations.

T-1 Prior to the issuance of grading or building permits, the San Bernardino County Flood Control District shall prepare and submit a Construction Traffic Control Plan to the City of Twentynine Palms and to the California Department of Transportation for review. The Construction Traffic Control Plan must be prepared in accordance with both the Caltrans Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook (WATCH) Manual and shall include detailed information on the following:

1. Timing and schedule of heavy equipment and building materials deliveries;
2. Any use of directing construction traffic with a flag person;
3. Any placement of temporary signing, lighting, and traffic control device placement as required; including, but not limited to: appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic;
4. Determination of the need for construction work hours and arrival/departure times outside peak traffic periods;
5. Ensure access for emergency vehicles to the project site and through the immediate project area;
6. Identification of vehicle safety procedures for entering and exiting site access roads;
7. The need for providing advance notification to affected property owners, businesses, residents, etc. of possible driveway blockages or other access obstructions and implement alternate access and parking provisions where necessary

8. Identification of vehicle safety procedures in the event of roadway flooding; and
9. Provisions for the establishment of a traffic control coordinator. The traffic control coordinator shall be responsible for responding to any local complaints about project construction and operational traffic concerns. The traffic control coordinator shall determine the cause of the traffic complaint and shall be required to implement reasonable measures to resolve the complaint. Signs posted along the project construction and operations access routes shall list the telephone number for the traffic control coordinator.

c. Does the project have environmental effects, which would cause substantial adverse effects on human beings, either directly or indirectly?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The preceding sections of this IS/MND discuss various types of impacts that could have adverse effects on human beings, including:

- Dust and air pollutants emitted during project construction activities (see Section C.3, Air Quality);
- Hazardous emissions or materials within one-quarter mile of an existing school, and potential interferences with emergency response or evacuation routes (see Section C.8, Hazards and Hazardous Materials);
- Water quality standards, waste discharge requirements, and erosion control (see Section C.9, Hydrology and Water Quality);
- Noise and vibration generated by construction and operation (see Section C.12, Noise);and
- Construction-related traffic and emergency access (see C.16, Transportation and Traffic).

These are primarily temporary impacts associated with the proposed project's construction activities. Each type of impact with the potential to cause substantial adverse effects on human beings has been evaluated, and this IS/MND concludes that with implementation of mitigation measures these impacts are less than significant.

Mitigation Measures

AQ-1 *Fugitive Dust Control.* The following dust control measures shall be implemented:

- a. The travel on unpaved areas will be minimized and traffic speeds on unpaved areas/roads shall be limited to 15 miles per hour for all on-road and off-road equipment.
- b. All onsite unpaved travel routes/roads shall be effectively stabilized using water at least three times daily, or by using non-toxic soil stabilizers that shall not increase any other environmental impacts including loss of vegetation. Proposed soil stabilizer(s) Material Safety Data Sheet (MSDS) and application strategy (method, frequency, and quantity) shall be provided to the San Bernardino County Flood Control District for approval prior to use.
- c. All material excavated or graded will be sufficiently watered to prevent excessive dust. Watering will occur as needed with complete coverage of disturbed areas.
- d. The excavated soil piles, if not covered, shall be watered at an adequate frequency, or sprayed with an environmentally safe chemical stabilizer, to create stabilized surfaces that will minimize wind erosion emissions.
- e. Construction activities that occur on unpaved surfaces shall be discontinued during windy conditions when those activities cause visible dust plumes that are transported beyond the

site boundary or that remain visible within 400 feet of any occupied residence, school, or public recreation area, or that otherwise conflict with the requirements of the Mojave Desert Air Quality Management District Rule 403.2 (C)(2)(f) under rule defined high wind conditions (wind gusts exceeding 25 mph or average hourly winds exceeding 15 mph).

- f. A wheel-washing system shall be installed and used to remove bulk material from tires and vehicle undercarriages before vehicles exit the project site. Track-out on public paved roads shall not extend 25 feet or more from an active operation and track-out shall be removed at the conclusion of each workday.
- g. All areas to be excavated shall be watered prior to excavation to ensure that the excavated materials are moist, and hauled materials shall be moist while being loaded into or out of dump trucks.
- h. All haul trucks hauling soil, sand, and other loose materials to or from the project site shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).
- i. Drop heights should be minimized when loading into or unloading out of haul trucks, and gate seals should be tight on haul trucks.
- j. Disturbed areas shall be minimized, and after active construction activity has ceased, disturbed areas shall be stabilized using non-toxic soil stabilizers approved for project use and shall be revegetated as soon as possible after disturbance.
- k. Other fugitive dust control measures shall be implemented as necessary to comply with the requirements of the Mojave Desert Air Quality Management District Rules 401, 402, and 403.2 and City of Twentynine Palms Development Code §19.64.030.

AQ-2 *Off-road Equipment Mitigation.* The emissions from the onsite off-road construction equipment shall be controlled by implementing the following:

- a. All off-road construction diesel engines not registered under California Air Resources Board's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower or more and 750 horsepower or less, shall meet, at a minimum, the Tier 3 California Emission Standards for Off-road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, Section 2423(b)(1). If a Tier 3 or Tier 3-equivalent engine is not available for a particular item of equipment, Tier 2 compliant engines shall be allowed on a case by case basis, as determined by the San Bernardino County Flood Control District. Off-road equipment with diesel engines larger than 750 horsepower shall meet Tier 2 California Emission Standards.
- b. All equipment shall be turned off when not in use. Engine idling of all equipment shall be minimized.
- c. All equipment engines shall be maintained in good operating condition and in proposed tune per manufacturers' specification.

HYD-1 *Compliance with water quality permits.* Prior to construction, the San Bernardino County Flood Control District shall contact all agencies with jurisdiction over the project and determine whether or not each agency requires a permit associated with water resources for the project. Where a permit is required, the San Bernardino County Flood Control District shall ensure that it is prepared and approved of prior to the onset of construction. Copies of all permits shall be maintained on-site during the construction period.

- HYD-2 Accidental spill control and environmental training.* Prior to the onset of construction of the project, the San Bernardino County Flood Control District shall prepare an accidental spill control plan and environmental training program which shall be implemented during the construction period. The plan shall include the following: define areas where hazardous materials would be stored, where trash would be placed, where rolling equipment would be parked, fueled and serviced, and where construction materials would be stored. The San Bernardino County Flood Control District shall prescribe hazardous materials handling procedures for reducing the potential for a spill during construction, and shall include an emergency response program to ensure quick and safe cleanup of accidental spills. These conditions may be included in the Stormwater Pollution Prevention Act (SWPPP) to be prepared for the project as identified in Section A.1.4.4 of this Initial Study.
- HYD-3 Erosion Control Plan.* An Erosion Control Plan shall be prepared for the project, and shall include best management practices (BMPs) to ensure that disturbed soils do not migrate within on- or off-site areas and do not result in siltation or sedimentation. Such BMPs may include but are not limited to: defining ingress and egress within the project site to control track-out, implementing a dust control program during construction, and properly containing stockpiled soil. The Erosion Control Plan shall be implemented during all soil-disturbing activities associated with the project.
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- San Bernardino County Development Code Section 83.01.080 (Noise) and/or Section 83.01.090 (Vibration).
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7. The need for providing advance notification to affected property owners, businesses, residents, etc. of possible driveway blockages or other access obstructions and implement alternate access and parking provisions where necessary
8. Identification of vehicle safety procedures in the event of roadway flooding; and
9. Provisions for the establishment of a traffic control coordinator. The traffic control coordinator shall be responsible for responding to any local complaints about project construction and operational traffic concerns. The traffic control coordinator shall determine the cause of the traffic complaint and shall be required to implement reasonable measures to resolve the complaint. Signs posted along the project construction and operations access routes shall list the telephone number for the traffic control coordinator.

D. References

Project Description

City of Twentynine Palms, 2012. City of Twentynine Palms General Plan, Safety Element. [online]: http://www.ci.twentynine-palms.ca.us/fileadmin/user_upload/pdf/GeneralPlan2012-Safety.pdf. Accessed March 29, 2013.

San Bernardino County, 2012. Biological Resources Report – Donnell Basin. Prepared by Department of Public Works, Environmental Management Division. December 17.

Aesthetics

CDPH (California Department of Public Health), 2014. Coccidioidomycosis (Valley Fever) webpage. [online]: <http://www.cdph.ca.gov/HealthInfo/discond/Pages/Coccidioidomycosis.aspx>. Accessed 5/28/14.

Caltrans (California Department of Transportation), 2013a. California Scenic Highway Mapping System. [online]: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm. Accessed June 13, 2013.

_____. 2013b. Scenic Highway Program, Frequently Asked Questions. [online]: <http://www.dot.ca.gov/hq/LandArch/scenic/faq.htm>. Accessed June 13, 2013.

San Bernardino County, 2007. San Bernardino County General Plan Section VI Open Space Element. [online]: <http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf>. Accessed June 12, 2013.

Agriculture and Forestry Resources

DOC (California Department of Conservation), 2013. San Bernardino County Williamson Act FY 2012/2013. [online]: ftp://ftp.consrv.ca.gov/pub/dlrp/wa/sanbernardino_so_12_13_WA.pdf. Accessed 6/11/13.

_____. 2010. California Department of Conservation – San Bernardino County Important Farmland 2010 [online]: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/sbd10_so.pdf. Accessed June 11, 2013.

Air Quality

City of Twentynine Palms, 2004. City of Twentynine Palms - Development Code, Chapter 19.64 Hillside Grading, Clearing and Plant Removal. [online]: http://www.ci.twentynine-palms.ca.us/fileadmin/user_upload/pdf/DevCode19-64-HillsideGradingCleargPlantRemov.pdf. Accessed June 2013.

MDAQMD (Mojave Desert Air Quality Management District), 2011. California Environmental Quality Act (CEQA) and Federal Conformity Guidelines. August 2011. [online]: <http://www.mdaqmd.ca.gov/index.aspx?page=13>. Accessed June 2013.

_____. 2008. MDAQMD Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Non-attainment Area). June 9, 2008. [online]: <http://www.mdaqmd.ca.gov/index.aspx?page=13>. Accessed June 2013.

- _____. 2004. MDAQMD 2004 Ozone Attainment Plan (State and Federal). April 26, 2004. [online]: <http://www.mdaqmd.ca.gov/index.aspx?page=13>. Accessed June 2013.
- _____. 2006. 8-Hour Reasonably Available Control Technology – State Implementation Plan Analysis (RACT SIP Analysis). August 2006. [online]: <http://www.mdaqmd.ca.gov/index.aspx?page=13>. Accessed June 2013.
- _____. 1995. Mojave Desert Planning Area Federal Particulate Matter (PM10) Attainment Plan. July 31, 1995. [online]: <http://www.mdaqmd.ca.gov/index.aspx?page=13>. Accessed June 2013.
- San Bernardino County, 2013. County of San Bernardino 2007 General Plan - Land Use Services Department. Amended December 27, 2012. [online]: <http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP61813.pdf>. Accessed June 2013.
- _____. 2012. County of San Bernardino 2007 Development Code. Amended June 18, 2012. [online]: <http://www.sbcounty.gov/Uploads/lus/DevelopmentCode/DC21227Amend.pdf>. Accessed June 2013.

Biological Resources

- CDFG (California Department of Fish and Game), 2012. Staff Report on Burrowing Owl Mitigation. [online] <http://www.dfg.ca.gov/wildlife/nongame/docs/BUOWStaffReport.pdf>
- CDFW (California Department of Fish and Wildlife), 2013. RareFind (records of special-status species on the Indian Cove, Queen Mountain, Sunfair, Twentynine Palms, Twentynine Palms Mountain, and Valley Mountain USGS 7.5- minute topographic quads). Natural Heritage Division, CDFW, Sacramento.
- San Bernardino County, 2007. County of San Bernardino 2007 Development Code Section 88.01.060, Desert Native Plant Protection Ordinance. [online]: <http://www.sbcounty.gov/Uploads/lus/Handouts/Plant.pdf>. Adopted April 12, 2007.
- City of Twentynine Palms, 2004. City of Twentynine - Palms Development Code, Title 19, Hillside Grading, Clearing And Plant Removal. [online]: http://www.ci.twentynine-palms.ca.us/fileadmin/user_upload/pdf/DevCode19-64-HillsideGradingClearingPlantRemov.pdf. Adopted January 27, 2004.
- USFWS (U.S. Fish and Wildlife Service), 1994. Endangered and threatened wildlife and plants; determination of critical habitat for the Mojave population of the desert tortoise. Federal Register 59:5820-5866 (8 Feb.).

Geology and Soils

- City of Twentynine Palms, 2012a. City of Twentynine Palms Hazard Mitigation Plan. Draft June 27. [online]: http://www.ci.twentynine-palms.ca.us/fileadmin/user_upload/pdf/DraftHazMit29Palms-6-27-12.pdf. Accessed June 26, 2013.
- _____. 2012b. City of Twentynine Palms General Plan – Conservation and Open Space Element. [online]: http://ci.twentynine-palms.ca.us/fileadmin/user_upload/pdf/GeneralPlan2012-Conservation-OpenSpace.pdf. Accessed June 26, 2013.
- DOC (California Department of Conservation), 2007. Alquist-Priolo Earthquake Fault Zone Maps. San Bernardino County: City of Twentynine Palms. [online]: <http://www.quake.ca.gov/gmaps/WH/regulatorymaps.htm>. Accessed June 25, 2013.

San Bernardino County, 2007. Geologic Hazards Maps. Desert Region, Twentynine Palms, FI24C. May 30. [online]: <http://www.sbcounty.gov/Uploads/lus/GeoHazMaps/FI24C.pdf>. Accessed June 26, 2013.

Greenhouse Gases Emissions

MDAQMD (Mojave Desert Air Quality Management District), 2011. California Environmental Quality Act and Federal Conformity Guidelines. August 2011. [online]: <http://www.mdaqmd.ca.gov/index.aspx?page=13>. Accessed June 2013.

San Bernardino County, 2011. County of San Bernardino Greenhouse Gas Emissions Reduction Plan. September 2011. [online]: <http://www.sbcounty.gov/Uploads/lus/GreenhouseGas/FinalGHG.pdf>. Accessed June 2013.

Hazards and Hazardous Materials

City of Twentynine Palms, 2012. General Plan, Safety Element. [online]: http://www.ci.twentynine-palms.ca.us/fileadmin/user_upload/pdf/GeneralPlan2012-Safety.pdf. Accessed June 25, 2012.

_____. 2011. Emergency Operations Plan. [online]: http://ci.twentynine-palms.ca.us/Emergency_Ops_Plan.59.0.html. Accessed June 25, 2013.

DTSC (Department of Toxic Substances Control), 2007. EnviroStor – Hazardous Waste and Substances Site List. [online]: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm. Accessed June 25, 2013.

EDR (Environmental Data Resources Inc.), 2013. The EDR Radius Map Report with GeoCheck – Donnell Basin. July 9.

San Bernardino County, 1992. San Bernardino County - Airport Comprehensive Land Use Plan – Twentynine Palms Airport. May. [online]: <http://www.sbcounty.gov/Uploads/lus/Airports/29Palms.pdf>. Accessed June 25, 2013.

Hydrology and Water Quality

City of Twentynine Palms, 2012. General Plan – Safety Element. [online]: http://www.ci.twentynine-palms.ca.us/fileadmin/user_upload/pdf/GeneralPlan2012-Safety.pdf. Accessed June 27, 2013.

TPWD (Twentynine Palms Water District), 2013. Water Service. [online]: <http://29palmswater.com/water.html>. Accessed July 2, 2013.

_____. 2011. 2010 Final Urban Water Management Plan. June. [online]: http://29palmswater.com/pdf/UWMP_2010_FINAL.pdf. Accessed July 2, 2013.

Land Use Planning

San Bernardino County, 2007. San Bernardino County Land Use Maps – Desert Region Zoning Map FI24 A. [online]: <http://cms.sbcounty.gov/Portals/5/Planning/ZoningOverlayMaps/LUZD/FI24A.pdf>. Accessed June 12, 2013.

City of Twentynine Palms, 2012a. City of Twentynine Palms – 2012 General Plan Land Use Element. online: Accessed June 13, 2013.

_____. 2012b. City of Twentynine Palms – Land Use Map. [online]: http://www.ci.twentynine-palms.ca.us/fileadmin/user_upload/pdf/LandUseMap-04242012.pdf. Accessed June 13, 2013.

_____. 2010. City of Twentynine Palms – Development Code. [online]: http://www.ci.twentynine-palms.ca.us/fileadmin/user_upload/pdf/DevCode19-00-Contents.pdf. Accessed June 13, 2013.

Mineral Resources

MRDS (Mineral Resources Data System), 2013. Mineral Resources On-Line Spatial Data. [online]: <http://mrddata.usgs.gov/mrds/package.php>. Accessed May 28, 2013.

Noise

City of Twentynine Palms, 2012a. General Plan Noise Element. [online]: http://www.ci.twentynine-palms.ca.us/Noise_Element.49.0.html. Accessed June 15, 2013.

_____. 2012b. General Plan Circulation Element. [online]: http://www.ci.twentynine-palms.ca.us/General_Plan.45.0.html. Accessed June 13, 2013.

_____. 2009. Development Code. [online]: http://www.ci.twentynine-palms.ca.us/Municipal_Code.56.0.html. Accessed June 15, 2013.

FTA (Federal Transit Authority), 2006. Transit Noise and Vibration Impact Assessment, Table 12-1.

San Bernardino County, 2007a. County of San Bernardino 2007 General Plan. Adopted March 13, 2007; Amended December 6, 2011. [online]: www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGeneralPlanTextImages06112012.pdf. Accessed June 11, 2013.

_____. 2007b. County of San Bernardino 2007 Development Code. Adopted March 13, 2007; Amended December 27, 2012. [online]: <http://cms.sbcounty.gov/lus/Planning/DevelopmentCode.aspx>. Accessed June 11, 2013.

_____. 1992. County of San Bernardino Twentynine Palms Airport Comprehensive Land Use Plan. Adopted May. [online]: <http://cms.sbcounty.gov/lus/Planning/AirportLandUse.aspx>. Accessed June 11, 2013.

Public Services

CAL FIRE (California Department of Forestry and Fire Protection), 2013. San Bernardino County FHSZ Map. [online]: http://www.fire.ca.gov/fire_prevention/fhsz_maps_sanbernardinow.php. Accessed June 2013.

Traffic and Transportation

Caltrans (California Department of Transportation), 2011. Traffic and Vehicle Data Systems Unit 2011 All Traffic Volumes on CSHS. [online]: <http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2011all/index.html>. Accessed June 12, 2013.

City of Twentynine Palms, 2012. General Plan Circulation Element. [online]: http://www.ci.twentynine-palms.ca.us/General_Plan.45.0.html. Accessed June 13, 2013.

San Bernardino County, 2007. County of San Bernardino 2007 General Plan. Adopted March 13, 2007; Amended December 6, 2011. [online]: www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGeneralPlanTextImages06112012.pdf. Accessed June 11, 2013.

SANBAG (San Bernardino Association of Governments), 2013. SANBAG Plans. [online]: http://sanbag.ca.gov/planning2/plan_county-wide-transit.html. Accessed June.

_____. 2007. Congestion Management Program for San Bernardino County. December 2007 Update. [online]: <http://sanbag.ca.gov/planning2/congestion-mgmt.html>. Accessed June 12, 2013.

Appendix A

Air Quality

Donnell Basin Project Air Quality Calculations

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Donnell Basin Project

Emission Calculation Assumptions

General Assumptions

- 1) Work occurs 5 days a week, typically from 7 am to 3 pm, excepting major holidays (average 22 days/month).

Onroad Equipment Emission Calculations Assumptions

- 1) CARB EMFAC2011 model emission factors for San Bernardino County are used to estimate on-road emissions. All passenger vehicles are assumed to be gasoline-fueled and all delivery and heavy heavy duty trucks are assumed to be diesel-fueled. Emission factors for each of these three combined vehicle classes are the weight-averaged emission factors based on the total miles traveled by each EMFAC 2011 vehicle class and their total emissions.
- 2) Trip estimates are based on raw material import/export trips (16.5 CY/truck for dirt and crushed rock, 25 ton/truck for street improvement debris removal, and 9 CY per concrete truck), equipment delivery, and worker trips provided by the applicant.
- 3) Trip distance assumptions: 50 miles/round trip for construction workers, 40 miles/round trip for imported fill trucks, concrete trucks, waste trucks, and delivery trucks, 20 miles/round trip for fuel trucks and 10 miles/round trip for water trucks.

Offroad Equipment Emission Calculation Assumptions

- 1) CARB OFFROAD model emission factors in San Bernardino County are used to estimate ROG, NOx, SOx, and PM emissions for off-road equipment.
- 2) 2014 SCAQMD CEQA website emission factors are used for CO for all offroad equipment.
- 3) Gasoline equipment emission factors are estimated based on the rate in g/hp-hr provided in the Gasoline Equipment Emission Factor Rates table for EPA/ARB compliant four-cycle engines.
- 4) Unmitigated emissions assume county fleet average emissions factors, mitigated emissions assume the use of county fleet average Tier 3 or better engines for equipment over 50 hp are used.

Fugitive Dust Emission Calculations Assumptions

- 1) Fugitive dust emissions are estimated using AP-42 and assume compliance with MDAQMD Rule 403.2.
- 2) Unpaved travel distance assumes vehicles average 0.5 mile unpaved to access working areas along the construction route for unmitigated emissions, and for mitigated emissions that worker vehicles travel on and park on graveled access road and lot.
- 3) Unmitigated emissions assume no speed control on unpaved areas, mitigated emissions assume maximum speed of 15 mph on unpaved areas.
- 4) For construction, the duration of disturbance is the 10 month construction schedule.
- 5) For maintenance, the duration of disturbance is 140 days.
- 6) Total area to be disturbed is 41.4 acres for unmitigated construction, 20.7 acres for mitigated construction, and 7.7 acres for maintenance.
- 7) Site specific silt content testing was performed at the project site using the USEPA AP-42 specified method, and the average silt content of these tests was used in the emission factor calculations for unpaved roads and dozing.

Greenhouse Gas Emission Calculations Assumptions

- 1) GHG emissions are estimated based on guideline and emission factors provided by The Climate Registry General Reporting Protocol (ver. 2.0 March 2013)
- 2) For diesel-fueled equipment, fuel consumption rate of 0.38 lbs/bhp-hr and density of 6.8 lbs/gallon are used.
- 3) For gasoline-fueled equipment, fuel consumption rate of 0.47 lbs/bhp-hr and density of 6.0 lbs/gallon are used.

Donnell Basin Project

Construction - Unmitigated Emissions Summary

Average Daily Emissions (lbs/day)

	VOC	CO	NOx	SOx	PM10	PM2.5
Onroad Vehicles	2.90	16.59	78.15	0.12	2.58	1.95
Offroad Equipment	7.07	36.88	96.91	0.08	4.52	4.16
Fugitive Dust	---	---	---	---	100.34	17.87
Total	9.98	53.47	175.06	0.20	107.45	23.98
MDAQMD Significance Thresholds	137	548	137	137	82	82
<i>Exceeds Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>

Total Emissions (tons)

	VOC	CO	NOx	SOx	PM10	PM2.5
Onroad Vehicles	0.44	2.52	11.88	0.02	0.39	0.30
Offroad Equipment	1.07	5.61	14.73	0.01	0.69	0.63
Fugitive Dust	---	---	---	---	15.25	2.72
Total	1.52	8.13	26.61	0.03	16.33	3.64
MDAQMD Significance Thresholds	25	100	25	25	15	15
<i>Exceeds Thresholds?</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>

Average Daily Emissions (lbs/day)

	CO2	N2O	CH4	CO2e
Onroad Vehicles	13,051	0.06	0.04	13,066
Offroad Equipment	8,415	0.48	0.21	8,491
Total	21,466	0.54	0.26	21,557
MDAQMD Significance Thresholds				548,000
<i>Exceeds Thresholds?</i>				<i>No</i>

Total GHG Emissions (Tons)

	CO2	N2O	CH4	CO2e
Onroad Vehicles	1,984	0.01	0.01	1,986
Offroad Equipment	1,279	0.07	0.03	1,291
Total	3,263	0.08	0.04	3,277
MDAQMD Significance Thresholds				100,000
<i>Exceeds Thresholds?</i>				<i>No</i>

Donnell Basin Project

Construction - Mitigated Emissions Summary

Average Daily Emissions (lbs/day)

	VOC	CO	NOx	SOx	PM10	PM2.5
Onroad Vehicles	2.90	16.59	78.15	0.12	2.58	1.95
Offroad Equipment	3.12	36.88	37.99	0.08	1.71	1.58
Fugitive Dust	---	---	---	---	70.83	13.87
Total	6.02	53.47	116.14	0.20	75.12	17.39
MDAQMD Significance Thresholds	137	548	137	137	82	82
<i>Exceeds Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

Total Emissions (tons)

	VOC	CO	NOx	SOx	PM10	PM2.5
Onroad Vehicles	0.44	2.52	11.88	0.02	0.39	0.30
Offroad Equipment	0.47	5.61	5.77	0.01	0.26	0.24
Fugitive Dust	---	---	---	---	10.77	2.11
Total	0.91	8.13	17.65	0.03	11.42	2.64
MDAQMD Significance Thresholds	25	100	25	25	15	15
<i>Exceeds Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

Average Daily Emissions (lbs/day)

	CO2	N2O	CH4	CO2e
Onroad Vehicles	13,051	0.06	0.04	13,066
Offroad Equipment	8,415	0.48	0.21	8,491
Total	21,466	0.54	0.26	21,557
MDAQMD Significance Thresholds				548,000
<i>Exceeds Thresholds?</i>				<i>No</i>

Total GHG Emissions (Tons)

	CO2	N2O	CH4	CO2e
Onroad Vehicles	1,984	0.01	0.01	1,986
Offroad Equipment	1,279	0.07	0.03	1,291
Total	3,263	0.08	0.04	3,277
MDAQMD Significance Thresholds				100,000
<i>Exceeds Thresholds?</i>				<i>No</i>

Donnell Basin Project

Maintenance - Summary

Debris Clean Up/Maintenance

Average Daily Emissions (lbs/day)

	VOC	CO	NOx	SOx	PM10	PM2.5
Onroad Vehicles	0.59	3.80	11.53	0.03	0.70	0.47
Offroad Equipment	2.07	10.42	26.95	0.02	1.38	1.27
Fugitive Dust	---	---	---	---	22.18	4.03
Total	2.66	14.22	38.48	0.05	24.25	5.76
MDAQMD Significance Thresholds	137	548	137	137	82	82
Exceeds Thresholds?	No	No	No	No	No	No

Total Emissions (tons)

	VOC	CO	NOx	SOx	PM10	PM2.5
Onroad Vehicles	0.04	0.27	0.81	0.00	0.05	0.03
Offroad Equipment	0.14	0.73	1.89	0.00	0.10	0.09
Fugitive Dust	---	---	---	---	1.55	0.28
Total	0.19	1.00	2.69	0.00	1.70	0.40
MDAQMD Significance Thresholds	25	100	25	25	15	15
Exceeds Thresholds?	No	No	No	No	No	No

Average Daily Emissions (lbs/day)

	CO2	N2O	CH4	CO2e
Onroad Vehicles	3,957	0.02	0.01	3,962
Offroad Equipment	2,040	0.12	0.05	2,058
Total	5,997	0.14	0.07	6,020
MDAQMD Significance Thresholds				548,000
Exceeds Thresholds?				No

Total GHG Emissions (Tons)

	CO2	N2O	CH4	CO2e
Onroad Vehicles	277	0	0	277
Offroad Equipment	143	0	0	144
Total	420	0.01	0.00	421
MDAQMD Significance Thresholds				100,000
Exceeds Thresholds?				No

Donnell Basin Project

Construction - Schedule

Phase	Start	End	Duration (work days)	No. of Employees	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14
					Month	1	2	3	4	5	6	7	8	9
1 Mobilization	1/1/2014	1/14/2014	10	6	■									
2 Clearing and Grubbing	1/13/2014	1/17/2014	5	8		■								
3 Excavation	1/16/2014	5/9/2014	80	8		■	■	■	■					
4 Placement of Embankment	3/24/2014	10/31/2014	65	8			■	■	■	■	■	■	■	■
5 Loading and Hauling of Excess Material	2/3/2014	7/18/2014	160	10		■	■	■	■	■	■			
6 Rock Slope Protection	9/8/2014	10/31/2014	40	8									■	■
7 Concrete Structures Installation	9/8/2014	10/31/2014	60	10									■	■
8 Street Improvement/Misc. Works	9/22/2014	10/31/2014	30	8									■	■

Donnell Basin Project
Construction - Equipment Assumptions

Assumptions:

1. Work occurs 5 days a week, 6 am to 5 pm, excepting major holidays (average 22 days/month).
2. Trips are round trips.

Construction Schedule

	Phase	Duration (work days)	Start	End	Employees	Quantity
1	Mobilization	10	1/1/2014	1/14/2014	6	
2	Clearing and Grubbing	5	1/13/2014	1/17/2014	8	28 acre
3	Excavation	80	1/16/2014	5/9/2014	8	430,000 bank cu.yd.
4	Placement of Embankment	65	3/24/2014	10/31/2014	8	82,000 loose cu.yd.
5	Loading and Hauling of Excess Material	160	2/3/2014	7/18/2014	10	400,000 loose cu.yd.
6	Rock Slope Protection	40	9/8/2014	10/31/2014	8	2,500 cu.yd.
7	Concrete Structures Installation	60	9/8/2014	10/31/2014	10	2,100 cu.yd.
8	Street Improvement/Misc. Works	30	9/22/2014	10/31/2014	8	200 ton

Onroad Equipment Use

	Onroad Equipment	Type	Veh. Type	Total VMT/Trip	Unpaved VMT/Trip	Trips/Day	Total Trips	Total		Unpaved		Paved		
								VMT/Day	Total VMT	VMT/Day	Total VMT	VMT/Day	Total VMT	
1	Mobilization	Employee Vehicle	Onroad	Passenger	50	0.5	6	60	300	3,000	3	30	297	2,970
	Supplies Delivery	Onroad	Delivery	40	0.5	1	10	40	400	1	5	40	395	
	Equipment Delivery	Onroad	HHDT	40	0.5	2	20	80	800	1	10	79	790	
2	Clearing and Grubbing	Employee Vehicle	Onroad	Passenger	50	0.5	8	40	400	2,000	4	20	396	1,980
		Supplies Delivery	Onroad	Delivery	40	0.5	1	5	40	200	1	3	40	198
		Debris Removal	Onroad	HHDT	40	0.5	1	5	40	200	1	3	40	198
3	Excavation	Employee Vehicle	Onroad	Passenger	50	0.5	8	640	400	32,000	4	320	396	31,680
4	Placement of Embankment	Employee Vehicle	Onroad	Passenger	50	0.5	8	520	400	26,000	4	260	396	25,740
5	Loading and Hauling of Excess Material	Employee Vehicle	Onroad	Passenger	50	0.5	10	1,600	500	80,000	5	800	495	79,200
		Haul Trucks	Onroad	HHDT	40	0.5	152	24,243	6,061	969,720	76	12,122	5,985	957,599
6	Rock Slope Protection	Employee Vehicle	Onroad	Passenger	50	0.5	8	320	400	16,000	4	160	396	15,840
		Haul Trucks	Onroad	HHDT	40	0.5	4	152	152	6,080	2	76	150	6,004
7	Concrete Structures Installation	Employee Vehicle	Onroad	Passenger	50	0.5	10	600	500	30,000	5	300	495	29,700
		Service Trucks	Onroad	Delivery	40	0.5	1	60	40	2,400	1	30	40	2,370
		Concrete Truck	Onroad	HHDT	40	0.5	10	234	400	9,360	5	117	395	9,243
8	Street Improvement/Misc. Works	Employee Vehicle	Onroad	Passenger	50	0.5	8	240	400	12,000	4	120	396	11,880
		Service Trucks	Onroad	Delivery	40	0.5	1	30	40	1,200	1	15	40	1,185
		Debris Removal	Onroad	HHDT	40	0.5	1	8	40	320	1	4	40	316
n/a	Daily	Fuel Truck	Onroad	Delivery	20	0.5	1	220	20	4,400	1	110	20	4,290
		Water Truck	Offroad	N/A	10	10	1	220	10	2,200	10	2,200	0	0

Offroad Equipment Use

	Primary Offroad Equipment	Type	HP	Quantity	Hr/day	Days	
2	Clearing and Grubbing	Bulldozer	Offroad	305	1	8	5
		Grader	Offroad	220	1	8	5
		Loader	Offroad	129	1	4	5
		Chipper	Offroad	50	1	4	5
		Chainsaw	Offroad	6	1	8	5
		Water Truck	Offroad	457	1	8	5
3	Excavation	Wheel Scraper	Offroad	500	5	8	80
		Bulldozer	Offroad	305	2	8	80
		Water Truck	Offroad	457	1	8	80
4	Placement of Embankment	Loader	Offroad	129	1	8	65
		Bulldozer	Offroad	305	1	8	65
		Grader	Offroad	220	1	8	65
		Sheepsfoot/Roller/Tamper	Offroad	240	1	8	65
		Water Truck	Offroad	457	1	8	65
5	Loading and Hauling of Excess Material	Loader	Offroad	129	2	8	160
		Bulldozer	Offroad	305	1	8	160
		Water Truck	Offroad	457	2	8	160
6	Rock Slope Protection	Excavator	Offroad	188	1	8	40
		Loader	Offroad	129	1	8	40
		Grout Pump	Offroad	43	1	8	30
7	Concrete Structures Installation	Concrete Mixer	Offroad	15	4	8	60
		Concrete Pump	Offroad	43	1	8	60
8	Street Improvement/Misc. Works	Paving Machine	Offroad	121	1	8	5
		Compressor	Offroad	100	1	8	30
		Water Truck	Offroad	457	1	8	30
		Grader	Offroad	220	1	8	10
		Roller/Compactor	Offroad	150	1	8	5

Donnell Basin Project

Construction- Onroad Vehicles Emission Calculations

Assumption:

1. CARB EMFAC 2011 model fleet average emission factors for San Bernardino County under MDAQMD jurisdiction are used to estimate on-road emissions.

Onroad Emission Factors - 2014 (lbs/mile)

	VOC	CO	NOx	SOx	PM10	PM2.5
Passenger	0.00048	0.00579	0.00066	0.00001	0.00010	0.00004
Delivery	0.00043	0.00180	0.01177	0.00002	0.00069	0.00047
Heavy-Heavy Duty	0.00079	0.00392	0.02385	0.00004	0.00077	0.00059

Total Emissions

Mobilization

Vehicle Type	Total VMT	Total Emissions (lbs)					
	Total	VOC	CO	NOx	SOx	PM10	PM2.5
Passenger	3,000	1.43	17.36	1.98	0.03	0.31	0.13
Delivery	400	0.17	0.72	4.71	0.01	0.28	0.19
Heavy-Heavy Duty	800	0.64	3.13	19.08	0.03	0.62	0.47
Totals		2.24	21.22	25.77	0.06	1.20	0.79

Clearing and Grubbing

Vehicle Type	Total VMT	Total Emissions (lbs)					
	Total	VOC	CO	NOx	SOx	PM10	PM2.5
Passenger	2,000	0.96	11.58	1.32	0.02	0.21	0.09
Delivery	200	0.09	0.36	2.35	0.00	0.14	0.09
Heavy-Heavy Duty	200	0.16	0.78	4.77	0.01	0.15	0.12
Totals		1.20	12.72	8.45	0.03	0.50	0.30

Excavation

Vehicle Type	Total VMT	Total Emissions (lbs)					
	Total	VOC	CO	NOx	SOx	PM10	PM2.5
Passenger	32,000	15.29	185.22	21.16	0.28	3.33	1.41
Delivery	--	--	--	--	--	--	--
Heavy-Heavy Duty	--	--	--	--	--	--	--
Totals		15.29	185.22	21.16	0.28	3.33	1.41

Placement of Embankment

Vehicle Type	Total VMT	Total Emissions (lbs)					
	Total	VOC	CO	NOx	SOx	PM10	PM2.5
Passenger	26,000	12.43	150.49	17.19	0.23	2.71	1.15
Delivery	--	--	--	--	--	--	--
Heavy-Heavy Duty	--	--	--	--	--	--	--
Totals		12.43	150.49	17.19	0.23	2.71	1.15

Loading and Hauling of Excess Material

Vehicle Type	Total VMT	Total Emissions (lbs)					
	Total	VOC	CO	NOx	SOx	PM10	PM2.5
Passenger	80,000	38.24	463.05	52.90	0.71	8.33	3.53
Delivery	--	--	--	--	--	--	--
Heavy-Heavy Duty	969,720	769.92	3,797.64	23,124.88	34.83	745.80	569.70
Totals		808.16	4,260.69	23,177.78	35.54	754.12	573.23

Donnell Basin Project

Construction- Onroad Vehicles Emission Calculations

Rock Slope Protection

Vehicle Type	Total VMT	Total Emissions (lbs)					
	Total	VOC	CO	NOx	SOx	PM10	PM2.5
Passenger	16,000	7.65	92.61	10.58	0.14	1.67	0.71
Delivery	--	--	--	--	--	--	--
Heavy-Heavy Duty	6,080	4.83	23.81	144.99	0.22	4.68	3.57
Totals		12.47	116.42	155.57	0.36	6.34	4.28

Concrete Structures Installation

Vehicle Type	Total VMT	Total Emissions (lbs)					
	Total	VOC	CO	NOx	SOx	PM10	PM2.5
Passenger	30,000	14.34	173.64	19.84	0.27	3.12	1.32
Delivery	2,400	1.04	4.33	28.24	0.06	1.65	1.14
Heavy-Heavy Duty	9,360	7.43	36.66	223.21	0.34	7.20	5.50
Totals		22.81	214.62	271.29	0.66	11.97	7.96

Street Improvement/Misc. Works

Vehicle Type	Total VMT	Total Emissions (lbs)					
	Total	VOC	CO	NOx	SOx	PM10	PM2.5
Passenger	12,000	5.74	69.46	7.93	0.11	1.25	0.53
Delivery	1,200	0.52	2.16	14.12	0.03	0.83	0.57
Heavy-Heavy Duty	320	0.25	1.25	7.63	0.01	0.25	0.19
Totals		6.51	72.87	29.69	0.15	2.32	1.29

Daily

Vehicle Type	Total VMT	Total Emissions (lbs)					
	Total	VOC	CO	NOx	SOx	PM10	PM2.5
Passenger	--	--	--	--	--	--	--
Delivery	4,400	1.91	7.93	51.77	0.10	3.03	2.09
Heavy-Heavy Duty	--	--	--	--	--	--	--
Totals		1.91	7.93	51.77	0.10	3.03	2.09

Total Emissions

Vehicle Type	Total VMT	Total Emissions (lbs)					
	Total	VOC	CO	NOx	SOx	PM10	PM2.5
Passenger	201,000	96.07	1,163.40	132.91	1.79	20.92	8.86
Delivery	8,600	3.73	15.50	101.20	0.20	5.92	4.08
Heavy-Heavy Duty	986,480	783.23	3,863.28	23,524.56	35.43	758.69	579.55
Totals		883.03	5,042.18	23,758.66	37.42	785.53	592.49

Donnell Basin Project

Construction- Offroad Equipment Unmitigated Emission Calculations:

Assumptions:

1. CARB OFFROAD model emission factors in San Bernardino County are used to estimate ROG, NOx, SOx, and PM emissions for off-road equipment.
2. 2014 SCAQMD CEQA website emission factors are used for CO for all offroad equipment.
3. Gasoline equipment emission factors are estimated based on the rate in g/hp-hr provided in the Gasoline Equipment Emission Factor Rates table for EPA/ARB compliant four-cycle engines.

Offroad Emission Factors - 2014 (pounds/hour)

	Primary Offroad Equipment	HP	Number	Off-road Emission Factor (lbs/hr)					Hrs/day	Days
				ROG	CO	NOx	SOx	PM		
Clearing and Grubbing	Bulldozer	305	1	0.1584	0.8044	2.1190	0.0013	0.1043	8	5
	Grader	220	1	0.0639	0.5439	1.1386	0.0010	0.0368	8	5
	Loader	129	1	0.0750	0.4470	0.7438	0.0005	0.0647	4	5
	Chipper	50	1	0.0492	0.2573	0.2548	0.0003	0.0230	4	5
	Chainsaw	6	1	0.6138	2.1016	0.0254	0.0000	0.0033	8	5
	Water Truck	457	1	0.1288	0.5726	1.8535	0.0019	0.0719	8	5
Excavation	Wheel Scraper	500	5	0.2166	1.1355	3.3972	0.0027	0.1381	8	80
	Bulldozer	305	2	0.1584	0.8044	2.1190	0.0013	0.1043	8	80
	Water Truck	457	1	0.1288	0.5726	1.8535	0.0019	0.0719	8	80
Placement of Embankment	Loader	129	1	0.0750	0.4470	0.7438	0.0005	0.0647	8	65
	Bulldozer	305	1	0.1584	0.8044	2.1190	0.0013	0.1043	8	65
	Grader	220	1	0.0639	0.5439	1.1386	0.0010	0.0368	8	65
	Sheepsfoot/Roller/Tamper	240	1	0.0606	0.4045	1.0479	0.0010	0.0371	8	65
	Water Truck	457	1	0.1288	0.5726	1.8535	0.0019	0.0719	8	65
Loading and Hauling of Excess Material	Loader	129	2	0.0750	0.4470	0.7438	0.0005	0.0647	8	160
	Bulldozer	305	1	0.1584	0.8044	2.1190	0.0013	0.1043	8	160
	Water Truck	457	2	0.1288	0.5726	1.8535	0.0019	0.0719	8	160
Rock Slope Protection	Excavator	188	1	0.0516	0.6109	0.7432	0.0008	0.0367	8	40
	Loader	129	1	0.0750	0.4470	0.7438	0.0005	0.0647	8	40
	Grout Pump	43	1	0.0423	0.2432	0.2192	0.0002	0.0198	8	30
Concrete Structures Installation	Concrete Mixer	15	4	0.0148	0.0617	0.0765	0.0001	0.0069	8	60
	Concrete Pump	43	1	0.0423	0.2432	0.2192	0.0002	0.0198	8	60
Street Improvement/Misc. Works	Paving Machine	121	1	0.0629	0.5061	0.6901	0.0006	0.0538	8	5
	Compressor	100	1	0.0554	0.2996	0.6098	0.0005	0.0476	8	30
	Water Truck	457	1	0.1288	0.5726	1.8535	0.0019	0.0719	8	30
	Grader	220	1	0.0639	0.5439	1.1386	0.0010	0.0368	8	10
	Roller/Compactor	150	1	0.0386	0.5204	0.5958	0.0006	0.0278	8	5

Donnell Basin Project

Construction- Offroad Equipment Unmitigated Emission Calculations

Clearing and Grubbing

	HP	Number	Emission Factor (lbs/hour)					Hrs/day	Days	Total Emissions (lbs)				
			ROG	CO	NOx	SOx	PM			ROG	CO	NOx	SOx	PM
Bulldozer	305	1	0.1584	0.8044	2.1190	0.0013	0.1043	8	5	6.34	32.18	84.76	0.05	4.17
Grader	220	1	0.0639	0.5439	1.1386	0.0010	0.0368	8	5	2.56	21.76	45.54	0.04	1.47
Loader	129	1	0.0750	0.4470	0.7438	0.0005	0.0647	4	5	1.50	8.94	14.88	0.01	1.29
Chipper	50	1	0.0492	0.2573	0.2548	0.0003	0.0230	4	5	0.98	5.15	5.10	0.01	0.46
Chainsaw	6	1	0.6138	2.1016	0.0254	0.0000	0.0033	8	5	24.55	84.06	1.02	0.00	0.13
Water Truck	457	1	0.1288	0.5726	1.8535	0.0019	0.0719	8	5	5.15	22.90	74.14	0.08	2.88
										41.08	174.99	225.43	0.19	10.41

Excavation

	HP	Number	Emission Factor (lbs/hour)					Hrs/day	Days	Total Emissions (lbs)				
			ROG	CO	NOx	SOx	PM			ROG	CO	NOx	SOx	PM
Wheel Scraper	500	5	0.2166	1.1355	3.3972	0.0027	0.1381	8	80	693.03	3,633.56	10,871.15	8.51	441.79
Bulldozer	305	2	0.1584	0.8044	2.1190	0.0013	0.1043	8	80	202.81	1,029.66	2,712.36	1.71	133.53
Water Truck	457	1	0.1288	0.5726	1.8535	0.0019	0.0719	8	80	82.42	366.47	1,186.22	1.24	46.04
										978.26	5,029.69	14,769.74	11.46	621.37

Placement of Embankment

	HP	Number	Emission Factor (lbs/hour)					Hrs/day	Days	Total Emissions (lbs)				
			ROG	CO	NOx	SOx	PM			ROG	CO	NOx	SOx	PM
Loader	129	1	0.0750	0.4470	0.7438	0.0005	0.0647	8	65	39.02	232.43	386.78	0.26	33.65
Bulldozer	305	1	0.1584	0.8044	2.1190	0.0013	0.1043	8	65	82.39	418.30	1,101.90	0.69	54.25
Grader	220	1	0.0639	0.5439	1.1386	0.0010	0.0368	8	65	33.23	282.82	592.08	0.52	19.13
Sheepsfoot/Roller/Tamper	240	1	0.0606	0.4045	1.0479	0.0010	0.0371	8	65	31.52	210.35	544.89	0.52	19.31
Water Truck	457	1	0.1288	0.5726	1.8535	0.0019	0.0719	8	65	66.97	297.76	963.81	1.01	37.41
										253.13	1,441.67	3,589.45	3.00	163.75

Loading and Hauling of Excess Material

	HP	Number	Emission Factor (lbs/hour)					Hrs/day	Days	Total Emissions (lbs)				
			ROG	CO	NOx	SOx	PM			ROG	CO	NOx	SOx	PM
Loader	129	2	0.0750	0.4470	0.7438	0.0005	0.0647	8	160	192.08	1,144.29	1,904.15	1.30	165.68
Bulldozer	305	1	0.1584	0.8044	2.1190	0.0013	0.1043	8	160	202.81	1,029.66	2,712.36	1.71	133.53
Water Truck	457	2	0.1288	0.5726	1.8535	0.0019	0.0719	8	160	329.68	1,465.90	4,744.89	4.96	184.17
										724.58	3,639.85	9,361.40	7.97	483.38

Rock Slope Protection

	HP	Number	Emission Factor (lbs/hour)					Hrs/day	Days	Total Emissions (lbs)				
			ROG	CO	NOx	SOx	PM			ROG	CO	NOx	SOx	PM
Excavator	188	1	0.0516	0.6109	0.7432	0.0008	0.0367	8	40	16.50	195.49	237.83	0.25	11.73
Loader	129	1	0.0750	0.4470	0.7438	0.0005	0.0647	8	40	24.01	143.04	238.02	0.16	20.71
Grout Pump	43	1	0.0423	0.2432	0.2192	0.0002	0.0198	8	30	10.16	58.36	52.60	0.05	4.75
										50.67	396.88	528.45	0.47	37.19

Concrete Structures Installation

	HP	Number	Emission Factor (lbs/hour)					Hrs/day	Days	Total Emissions (lbs)				
			ROG	CO	NOx	SOx	PM			ROG	CO	NOx	SOx	PM
Concrete Mixer	15	4	0.0148	0.0617	0.0765	0.0001	0.0069	8	60	28.35	118.49	146.79	0.15	13.25
Concrete Pump	43	1	0.0423	0.2432	0.2192	0.0002	0.0198	8	60	20.32	116.72	105.20	0.11	9.49
										48.67	235.21	251.99	0.25	22.74

Street Improvement/Misc. Works

	HP	Number	Emission Factor (lbs/hour)					Hrs/day	Days	Total Emissions (lbs)				
			ROG	CO	NOx	SOx	PM			ROG	CO	NOx	SOx	PM
Paving Machine	121	1	0.0629	0.5061	0.6901	0.0006	0.0538	8	5	2.52	20.24	27.60	0.02	2.15
Compressor	100	1	0.0554	0.2996	0.6098	0.0005	0.0476	8	30	13.30	71.90	146.36	0.11	11.43
Water Truck	457	1	0.1288	0.5726	1.8535	0.0019	0.0719	8	30	30.91	137.43	444.83	0.46	17.27
Grader	220	1	0.0639	0.5439	1.1386	0.0010	0.0368	8	10	5.11	43.51	91.09	0.08	2.94
Roller/Compactor	150	1	0.0386	0.5204	0.5958	0.0006	0.0278	8	5	1.54	20.81	23.83	0.02	1.11
										53.38	293.90	733.72	0.70	34.91

Total Emissions (lbs)				
ROG	CO	NOx	SOx	PM
2,149.77	11,212.18	29,460.18	24.04	1,373.74

Donnell Basin Project

Construction- Offroad Equipment Mitigated Emission Calculations

Assumptions:

1. CARB OFFROAD model emission factors in San Bernardino County are used to estimate ROG, NOx, SOx, and PM emissions for off-road equipment.
2. 2014 SCAQMD CEQA website emission factors are used for CO for all offroad equipment.
3. Gasoline equipment emission factors are estimated based on the rate in g/hp-hr provided in the Gasoline Equipment Emission Factor Rates table for EPA/ARB compliant four-cycle engines.
4. Tier 3 or better engines will be required to be used for offroad equipment larger than 50 hp. Emission factors are based on weighted averages of equipment within the MDAB in 2014 with model years beyond when Tier 3 emission standards took effect.

Offroad Emission Factors - 2014 (pounds/hour)

	Primary Offroad Equipment	HP	Number	Off-road Emission Factor (lbs/hr)					Hrs/day	Days
				ROG	CO	NOx	SOx	PM		
Clearing and Grubbing	Bulldozer	305	1	0.0526	0.8044	0.6827	0.0013	0.0297	8	5
	Grader	220	1	0.0368	0.5439	0.6046	0.0010	0.0209	8	5
	Loader	129	1	0.0225	0.4470	0.3730	0.0005	0.0213	4	5
	Chipper	50	1	0.0076	0.2573	0.2149	0.0003	0.0068	4	5
	Chainsaw	6	1	0.6138	2.1016	0.0254	0.0000	0.0033	8	5
	Water Truck	457	1	0.0844	0.5726	0.8110	0.0019	0.0382	8	5
Excavation	Wheel Scraper	500	5	0.0755	1.1355	1.1796	0.0027	0.0462	8	80
	Bulldozer	305	2	0.0526	0.8044	0.6827	0.0013	0.0297	8	80
	Water Truck	457	1	0.0844	0.5726	0.8110	0.0019	0.0382	8	80
Placement of Embankment	Loader	129	1	0.0225	0.4470	0.3730	0.0005	0.0213	8	65
	Bulldozer	305	1	0.0526	0.8044	0.6827	0.0013	0.0297	8	65
	Grader	220	1	0.0368	0.5439	0.6046	0.0010	0.0209	8	65
	Sheepsfoot/Roller/Tamper	240	1	0.0168	0.4045	0.3750	0.0010	0.0084	8	65
	Water Truck	457	1	0.0844	0.5726	0.8110	0.0019	0.0382	8	65
Loading and Hauling of Excess Material	Loader	129	2	0.0225	0.4470	0.3730	0.0005	0.0213	8	160
	Bulldozer	305	1	0.0526	0.8044	0.6827	0.0013	0.0297	8	160
	Water Truck	457	2	0.0844	0.5726	0.8110	0.0019	0.0382	8	160
Rock Slope Protection	Excavator	188	1	0.0211	0.6109	0.4153	0.0008	0.0146	8	40
	Loader	129	1	0.0225	0.4470	0.3730	0.0005	0.0213	8	40
	Grout Pump	43	1	0.0423	0.2432	0.2192	0.0002	0.0198	8	30
Concrete Structures Installation	Concrete Mixer	15	4	0.0148	0.0617	0.0765	0.0001	0.0069	8	60
	Concrete Pump	43	1	0.0423	0.2432	0.2192	0.0002	0.0198	8	60
Street Improvement/Misc. Works	Paving Machine	121	1	0.0128	0.5061	0.3339	0.0006	0.0151	8	5
	Compressor	100	1	0.0132	0.2996	0.3093	0.0005	0.0147	8	30
	Water Truck	457	1	0.0844	0.5726	0.8110	0.0019	0.0382	8	30
	Grader	220	1	0.0368	0.5439	0.6046	0.0010	0.0209	8	10
	Roller/Compactor	150	1	0.0122	0.5204	0.2853	0.0006	0.0100	8	5

Donnell Basin Project

Construction- Offroad Equipment Mitigated Emission Calculations

Clearing and Grubbing

	HP	Number	Emission Factor (lbs/hr)					Hrs/day	Days	Total Emissions (lbs)				
			ROG	CO	NOx	SOx	PM			ROG	CO	NOx	SOx	PM
Bulldozer	305	1	0.0526	0.8044	0.6827	0.0013	0.0297	8	5	2.10	32.18	27.31	0.05	1.19
Grader	220	1	0.0368	0.5439	0.6046	0.0010	0.0209	8	5	1.47	21.76	24.19	0.04	0.84
Loader	129	1	0.0225	0.4470	0.3730	0.0005	0.0213	4	5	0.45	8.94	7.46	0.01	0.43
Chipper	50	1	0.0076	0.2573	0.2149	0.0003	0.0068	4	5	0.15	5.15	4.30	0.01	0.14
Chainsaw	6	1	0.6138	2.1016	0.0254	0.0000	0.0033	8	5	24.55	84.06	1.02	0.00	0.13
Water Truck	457	1	0.0844	0.5726	0.8110	0.0019	0.0382	8	5	3.38	22.90	32.44	0.08	1.53
										32.11	174.99	96.71	0.19	4.25

Excavation

	HP	Number	Emission Factor (lbs/hr)					Hrs/day	Days	Total Emissions (lbs)				
			ROG	CO	NOx	SOx	PM			ROG	CO	NOx	SOx	PM
Wheel Scraper	500	5	0.0755	1.1355	1.1796	0.0027	0.0462	8	80	241.63	3,633.56	3,774.58	8.53	147.95
Bulldozer	305	2	0.0526	0.8044	0.6827	0.0013	0.0297	8	80	67.29	1,029.66	873.88	1.70	38.05
Water Truck	457	1	0.0844	0.5726	0.8110	0.0019	0.0382	8	80	54.04	366.47	519.03	1.23	24.47
										362.96	5,029.69	5,167.49	11.46	210.47

Placement of Embankment

	HP	Number	Emission Factor (lbs/hr)					Hrs/day	Days	Total Emissions (lbs)				
			ROG	CO	NOx	SOx	PM			ROG	CO	NOx	SOx	PM
Loader	129	1	0.0225	0.4470	0.3730	0.0005	0.0213	8	65	11.68	232.43	193.95	0.27	11.09
Bulldozer	305	1	0.0526	0.8044	0.6827	0.0013	0.0297	8	65	27.34	418.30	355.01	0.69	15.46
Grader	220	1	0.0368	0.5439	0.6046	0.0010	0.0209	8	65	19.15	282.82	314.41	0.51	10.86
Sheepsfoot/Roller/Tamper	240	1	0.0168	0.4045	0.3750	0.0010	0.0084	8	65	8.73	210.35	194.98	0.52	4.35
Water Truck	457	1	0.0844	0.5726	0.8110	0.0019	0.0382	8	65	43.91	297.76	421.71	1.00	19.89
										110.80	1,441.67	1,480.07	2.99	61.64

Loading and Hauling of Excess Material

	HP	Number	Emission Factor (lbs/hr)					Hrs/day	Days	Total Emissions (lbs)				
			ROG	CO	NOx	SOx	PM			ROG	CO	NOx	SOx	PM
Loader	129	2	0.0225	0.4470	0.3730	0.0005	0.0213	8	160	57.51	1,144.29	954.84	1.31	54.59
Bulldozer	305	1	0.0526	0.8044	0.6827	0.0013	0.0297	8	160	67.29	1,029.66	873.88	1.70	38.05
Water Truck	457	2	0.0844	0.5726	0.8110	0.0019	0.0382	8	160	216.17	1,465.90	2,076.12	4.93	97.90
										340.96	3,639.85	3,904.83	7.94	190.53

Rock Slope Protection

	HP	Number	Emission Factor (lbs/hr)					Hrs/day	Days	Total Emissions (lbs)				
			ROG	CO	NOx	SOx	PM			ROG	CO	NOx	SOx	PM
Excavator	188	1	0.0211	0.6109	0.4153	0.0008	0.0146	8	40	6.75	195.49	132.90	0.25	4.68
Loader	129	1	0.0225	0.4470	0.3730	0.0005	0.0213	8	40	7.19	143.04	119.35	0.16	6.82
Grout Pump	43	1	0.0423	0.2432	0.2192	0.0002	0.0198	8	30	10.16	58.36	52.60	0.05	4.75
										24.10	396.88	304.86	0.47	16.25

Concrete Structures Installation

	HP	Number	Emission Factor (lbs/hr)					Hrs/day	Days	Total Emissions (lbs)				
			ROG	CO	NOx	SOx	PM			ROG	CO	NOx	SOx	PM
Concrete Mixer	15	4	0.0148	0.0617	0.0765	0.0001	0.0069	8	60	28.35	118.49	146.79	0.15	13.25
Concrete Pump	43	1	0.0423	0.2432	0.2192	0.0002	0.0198	8	60	20.32	116.72	105.20	0.11	9.49
										48.67	235.21	251.99	0.25	22.74

Street Improvement/Misc. Works

	HP	Number	Emission Factor (lbs/hr)					Hrs/day	Days	Total Emissions (lbs)				
			ROG	CO	NOx	SOx	PM			ROG	CO	NOx	SOx	PM
Paving Machine	121	1	0.0128	0.5061	0.3339	0.0006	0.0151	8	5	0.51	20.24	13.36	0.02	0.61
Compressor	100	1	0.0132	0.2996	0.3093	0.0005	0.0147	8	30	3.17	71.90	74.24	0.11	3.54
Water Truck	457	1	0.0844	0.5726	0.8110	0.0019	0.0382	8	30	20.27	137.43	194.64	0.46	9.18
Grader	220	1	0.0368	0.5439	0.6046	0.0010	0.0209	8	10	2.95	43.51	48.37	0.08	1.67
Roller/Compactor	150	1	0.0122	0.5204	0.2853	0.0006	0.0100	8	5	0.49	20.81	11.41	0.02	0.40
										27.38	293.90	342.01	0.70	15.39

Total Emissions (lbs)				
ROG	CO	NOx	SOx	PM
946.97	11,212.18	11,547.95	23.99	521.27

Donnell Basin Project

Construction - Fugitive Dust Unmitigated Emission Calculations

Assumptions:

1. Fugitive dust emissions are estimated using AP-42.
2. Equipment usage, amount of material handling, and VMT assumptions are presented under "Schedule & Equipment" and "Onroad Vehicles Emission Calculations" above.
3. Mitigation level assumes MDAQMD rule 403.2 compliance only.

Emission Categories

- 1) Earthmoving
- 2) Road Dust Paved/Unpaved
- 3) Disturbed Area Windblown Emissions

1) Earthmoving

Emission Types

- A) Dozing
- B) Grading
- C) Scraper
- D) Material Loading/Handling

A) Dozing (AP-42 Section 11.9 for overburden)

$$E = k \times (s)^{1.5} / (M)^{1.4} \text{ For PM10 and } k \times 5.7 \times (s)^{1.2} / (M)^{1.3} \text{ for PM2.5}$$

$$E = \text{lb/hr}$$

k = Scaling Constant (0.75 for PM10 and 0.105 for PM2.5)

s = Silt Content (assumed to be 4.9%)

M = Moisture Content = 15% (based on SCAQMD moist and soil definition)

Emission Factor, lb/hr

PM10	PM2.5
0.18358	0.11923

Total Dozer Use

	Hrs
Total Dozer Use	2,480

Dozer Emissions (Tons)

	PM10	PM2.5
Total Dozer Use	0.228	0.148

B) Grading (AP-42 Section 11.9)

$$E = k \times 0.051 \times (S)^{2.0} \text{ for PM10 and } k \times 0.040 \times (S)^{2.5} \text{ for PM2.5}$$

$$E = \text{lb/VMT}$$

k = Scaling Constant (0.60 for PM10 and 0.031 for PM2.5)

S = Mean Vehicle Speed assumed to be 3 mph

Assumes VMT = 3 x hours in use

Emission Factor, lb/VMT

PM10	PM2.5
0.27540	0.01933

Total Grader VMT

	Hrs	VMT
Total Grader Use	640	1920

Emission Control
61%

Water dust suppression is assumed as a control measure.

Grading Emissions (Tons)

	PM10	PM2.5
Total Grader Use	0.10	0.01

C) Scraper (AP-42 Section 11.9)

Assumptions

1. Emission Factor is 0.058 lb/ton for removal plus 0.04 lb/ton for unloading of Total Suspended Particulate (AP-42 Section 11.9)
2. PM10 and PM2.5 fractions of TSP are 0.489 and 0.102 respectively per CEIDARS factors from SCAQMD CEQA Website
3. A density of 1.6 tons/cy is used for wet soil.

Emission Factor, lb/ton

PM10	PM2.5
0.04792	0.01000

Emission Control
69%

Water dust suppression (SCAQMD factor for 12% soil moisture)

Scraper Throughput

cy	tons
430,000	688,000

Scraper Emissions (Tons)

	PM10	PM2.5
Total Scraper Use	5.11	1.07

Donnell Basin Project

Construction - Fugitive Dust Unmitigated Emission Calculations

D) Material Loading/Handling (AP-42, p. 13.2.4.3)

Assumptions:

1. This emission source covers the removal of the excess excavated materials. The materials used onsite are covered by the other fugitive dust source categories.
2. The total excess material removal is expected to be 400,000 tons, which with two assumed drops is 800,000 tons dropped.

$$E = (k)(0.0032)[(U/5)^{1.3}]/[(M/2)^{1.4}]$$

E = lb/ton

k = Particle Size Constant (0.35 for PM10 and 0.053 for PM2.5)

U = average wind speed = 25 MPH worst day, 8 MPH avg daytime (engineering assumption)

M = moisture content = 15% (SCAQMD moist)

Four separate drops are assumed

	tons/period
Total	800,000

Emission Factors and Emissions

Emission Factors

PM10 Total	PM2.5 Total
0.00012	0.00002

Emissions (Tons/year)

	PM10	PM2.5
Total	0.09831	0.01489

2) Road Dust

Emission Types

A) Paved Road Dust

B) Unpaved Road Dust

A) Paved Road Dust

$$E = [k \times (sL)^{0.91} \times (W)^{1.02}] \times (1-P/4N)$$

E = lb/VMT

k = Constant (0.0022 for PM10 and 0.00054 for PM2.5)

sL = Silt Loading (assumed to be 0.03 g/m² for ADT > 10,000 of Table 13.2.1-2)

W = Average weight of vehicles in tons (calculated below)

P = Days of precipitation (15 assumed for annual calculation)

N = Days in period (365 for annual calculation)

Average Vehicle Weight Calculation

Assumptions

Passenger Vehicles = 2 tons average

Midsized "Delivery" Vehicles = 8 ton average

Heavy-Heavy Duty Trucks = 27.5 tons average (loaded 40 tons, unloaded 15 tons)

Total Case VMT	Passenger Vehicles	Delivery/Work Vehicles	Heavy-Heavy Duty Vehicles	Total Paved VMT	Average Weight (Tons)
Total Project	198,990	8,438	974,149	1,181,577	23.1

Total Emission Factors (lb/VMT)

	PM10 Annual	PM2.5 Annual
Total Project	0.0022	0.0005

Emissions (Tons)

	PM10	PM2.5
Total Project	1.30	0.32

B) Unpaved Road Dust

$$E = (k)[(s/12)^{0.9}][[(W/3)^{0.45}][[(365-P)/365]]$$

k = constant = 1.5 lb/VMT for PM10 and 0.15 lb/VMT for PM2.5

s = Silt Content (assumed to be 4.9%)

W = avg. vehicle weight = calculated below

P = Days of precipitation (15 assumed for annual calculation)

No correction for number of wet days due to assumption of working in dry season

Average Vehicle Weight Calculation

Assumptions:

1. Personal/Professionals/inspection Vehicles = 2 tons average

2. Midsized "Delivery" Vehicles = 8 ton average

3. Heavy-Heavy Duty Trucks = 27.5 tons average (loaded 40 tons, unloaded 15 tons)

Total Case VMT	Passenger Vehicles	Delivery/Work Vehicles	Heavy-Heavy Duty Vehicles	Total Unpaved VMT	Average Weight (Tons)
Total Project	2,010.00	162.50	14,531.00	16,704	24.2

Donnell Basin Project

Construction - Fugitive Dust Unmitigated Emission Calculations

Uncontrolled Emission Factors and Emissions

Total Emission Factors (lb/VMT)

	PM10 Annual	PM2.5 Annual
Total Project	1.64	0.16

Emissions (Tons)

	PM10	PM2.5
Total Project	13.74	1.37

Controlled Emissions (assumes 61% with watering)

Emissions (Tons)

	PM10	PM2.5
Total Project	5.36	0.54

Emission Control
61%

3) Disturbed Area Windblown Emissions

Assumptions

1. Emission Factor is 0.38 tons/disturbed acres/year of Total Suspended Particulate (AP-42 Section 11.9).
2. PM10 and PM2.5 fractions of TSP are 0.489 and 0.102 respectively per CEIDARS factors from SCAQMD CEQA Website.
3. There are permanent and temporary disturbed acres that make up the total acre-years of disturbed area which totals 49.7 acres.
4. Duration of disturbance is the 10 month construction schedule.
5. Disturbed areas are controlled by water dust suppression of 61% control.
6. Restoration of disturbed acres creates no net emission increase of permanently disturbed acres

Disturbed Acres (acre-years)	Total Emissions (Tons)	
	PM10	PM2.5
41.4	3.06	0.63

* Disturbance area includes piles of earth fill.

Fugitive Dust Emissions Summary

Total Fugitive Emissions

	PM10	PM2.5
Dozing	0.23	0.15
Grading	0.10	0.01
Scraper	5.11	1.07
Material Loading/Handling	0.10	0.01
Paved Road Dust	1.30	0.32
Unpaved Road Dust	5.36	0.54
Disturbed Area Windblown Emissions	3.06	0.63
Total	15.25	2.72

Donnell Basin Project

Construction - Fugitive Dust Mitigated Emission Calculations

Assumptions:

1. Fugitive dust emissions are estimated using AP-42.
2. Equipment usage, amount of material handling, and VMT assumptions are presented under "Schedule & Equipment" and "Onroad Vehicles Emission Calculations" above.
3. Mitigation assumes MDAQMD Rule 403.2 compliance and additional mitigation outlined in Mitigation Measures AQ-1.

Emission Categories

- 1) Earthmoving
- 2) Road Dust Paved/Unpaved
- 3) Disturbed Area Windblown Emissions

1) Earthmoving

Emission Types

- A) Dozing
- B) Grading
- C) Scraper
- D) Material Loading/Handling

A) Dozing (AP-42 Section 11.9 for overburden)

$$E = k \times (s)^{1.5} / (M)^{1.4} \text{ For PM}_{10} \text{ and } k \times 5.7 \times (s)^{1.2} / (M)^{1.3} \text{ for PM}_{2.5}$$

E = lb/hr

k = Scaling Constant (0.75 for PM₁₀ and 0.105 for PM_{2.5})

s = Silt Content (assumed to be 4.9%)

M = Moisture Content = 15% (based on SCAQMD moist and soil definition)

Emission Factor, lb/hr

PM10	PM2.5
0.18358	0.11923

Total Dozer Use

	Hrs
Total Dozer Use	2,480

Dozer Emissions (Tons)

	PM10	PM2.5
Total Dozer Use	0.228	0.148

B) Grading (AP-42 Section 11.9)

$$E = k \times 0.051 \times (S)^{2.0} \text{ for PM}_{10} \text{ and } k \times 0.040 \times (S)^{2.5} \text{ for PM}_{2.5}$$

E = lb/VMT

k = Scaling Constant (0.60 for PM₁₀ and 0.031 for PM_{2.5})

S = Mean Vehicle Speed assumed to be 3 mph

Assumes VMT = 3 x hours in use

Emission Factor, lb/VMT

PM10	PM2.5
0.27540	0.01933

Emission Control

61%

Water dust suppression is assumed as a control measure.

Total Grader VMT

	Hrs	VMT
Total Grader Use	640	1920

Grading Emissions (Tons)

	PM10	PM2.5
Total Grader Use	0.10	0.01

C) Scraper (AP-42 Section 11.9)

Assumptions:

1. Emission Factor is 0.058 lb/ton for removal plus 0.04 lb/ton for unloading of Total Suspended Particulate (AP-42 Section 11.9)
2. PM₁₀ and PM_{2.5} fractions of TSP are 0.489 and 0.102 respectively per CEIDARS factors from SCAQMD CEQA Website
3. A density of 1.6 tons/cy is used for wet soil.

Emission Factor, lb/ton

PM10	PM2.5
0.04792	0.01000

Emission Control

69%

Water dust suppression (SCAQMD factor for 12% soil moisture)

Scraper Throughput

cy	tons
430,000	688,000

Scraper Emissions (Tons)

	PM10	PM2.5
Total Scraper Use	5.11	1.07

Donnell Basin Project

Construction - Fugitive Dust Mitigated Emission Calculations

D) Material Loading/Handling (AP-42, p. 13.2.4.3)

Assumptions:

1. This emission source covers the removal of the excess excavated materials. The materials used onsite are covered by the other fugitive dust source categories.
2. The total excess material removal is expected to be 400,000 tons, which with two assumed drops is 800,000 tons dropped.

$$E = (k)(0.0032)[(U/5)^{1.3}]/[(M/2)^{1.4}]$$

E = lb/ton

k = Particle Size Constant (0.35 for PM10 and 0.053 for PM2.5)

U = average wind speed = 25 MPH worst day, 8 MPH avg daytime (engineering assumption)

M = moisture content = 15% (SCAQMD moist)

Two separate drops are assumed

	tons/period
Total	800,000

Emission Factors and Emissions

Emission Factors

PM10 Total	PM2.5 Total
0.00012	0.00002

Emissions (Tons/year)

	PM10	PM2.5
Total	0.09831	0.01489

2) Road Dust

Emission Types

- A) Paved Road Dust
- B) Unpaved Road Dust

A) Paved Road Dust

$$E = [k \times (sL)^{0.91} \times (W)^{1.02}] \times (1-P/4N)$$

E = lb/VMT

k = Constant (0.0022 for PM10 and 0.00054 for PM2.5)

sL = Silt Loading (assumed to be 0.03 g/m2 for ADT > 10,000 of Table 13.2.1-2)

W = Average weight of vehicles in tons (calculated below)

P = Days of precipitation (15 assumed for annual calculation)

N = Days in period (365 for annual calculation)

Average Vehicle Weight Calculation

Assumptions:

1. Passenger Vehicles = 2 tons average
2. Midsize "Delivery" Vehicles = 8 ton average
3. Heavy-Heavy Duty Trucks = 27.5 tons average (loaded 40 tons, unloaded 15 tons)

Total Case VMT	Passenger Vehicles	Delivery/Work Vehicles	Heavy-Heavy Duty Vehicles	Total Paved VMT	Average Weight (Tons)
Total Project	198,990	8,438	974,149	1,181,577	23.1

Total Emission Factors (lb/VMT)

	PM10 Annual	PM2.5 Annual
Total Project	0.0022	0.0005

Emissions (Tons)

	PM10	PM2.5
Total Project	1.30	0.32

B) Unpaved Road Dust

$$E = (k)[(s/12)^{0.9}]/[(W/3)^{0.45}][[(365-P)/365]]$$

k = constant = 1.5 lb/VMT for PM10 and 0.15 lb/VMT for PM2.5

s = Silt Content (assumed to be 4.9%)

W = avg. vehicle weight = calculated below

P = Days of precipitation (15 assumed for annual calculation)

No correction for number of wet days due to assumption of working in dry season

Average Vehicle Weight Calculation

Assumptions:

1. Personal/Professionals/inspection Vehicles = 2 tons average
2. Midsize "Delivery" Vehicles = 8 ton average
3. Heavy-Heavy Duty Trucks = 27.5 tons average (loaded 40 tons, unloaded 15 tons)

Total Case VMT	Passenger Vehicles	Delivery/Work Vehicles	Heavy-Heavy Duty Vehicles	Total Unpaved VMT	Average Weight (Tons)
Total Project	2,010.00	162.50	14,531.00	16,704	26.4

Donnell Basin Project

Construction - Fugitive Dust Mitigated Emission Calculations

Uncontrolled Emission Factors and Emissions

Total Emission Factors (lb/VMT)

	PM10 Annual	PM2.5 Annual
Total Project	1.71	0.17

Emissions (Tons)

	PM10	PM2.5
Total Project	14.28	1.43

Controlled Emissions

Assumptions:

1. The total emission control factor is 83.2% based on a speed reduction control factor of 57% for 15 mph maximum speed and a water dust suppression control factor of 61%.

Emissions (Tons)

	PM10	PM2.5
Total Project	2.40	0.24

Emission Control
83%

3) Disturbed Area Windblown Emissions

Assumptions:

1. Emission Factor is 0.38 tons/disturbed acres/year of Total Suspended Particulate (AP-42 Section 11.9)
2. PM10 and PM2.5 fractions of TSP are 0.489 and 0.102 respectively per CEIDARS factors from SCAQMD CEQA Website
3. There are permanent and temporary disturbed acres that make up the total acre-years of disturbed area which totals 49.7 acres.
4. 50% of this total area is disturbed on average throughout the construction period due to mitigation measure requirement to stabilize disturbed areas after active construction has ceased in those areas.
5. Duration of disturbance is the 10 month construction schedule.
6. Disturbed areas are controlled by water dust suppression of 61% control (SCAQMD CEQA website)
7. Restoration of disturbed acres creates no net emission increase of permanently disturbed acres

Disturbed Acres (acre-years)	Total Emissions (Tons)	
	PM10	PM2.5
20.7	1.53	0.31

* Disturbance area includes piles of earth fill.

Fugitive Dust Emissions Summary

Total Fugitive Emissions (tons)

	PM10	PM2.5
Dozing	0.23	0.15
Grading	0.10	0.01
Scraper	5.11	1.07
Material Loading/Handling	0.10	0.01
Paved Road Dust	1.30	0.32
Unpaved Road Dust	2.40	0.24
Disturbed Area Windblown Emissions	1.53	0.31
Total	10.77	2.11

Donnell Basin Project

Maintenance - Emission Calculations

Maintenance Schedule

	Duration (work days)	Employees	Quantity
Debris Clean Up/Maintenance	100	10	54,100 cu. yd.

Note: Total duration of 140 days or 20 weeks; 5 work days/week

Onroad Equipment Use

	Onroad Equipment	Type	Veh. Type	Total VMT/Trip	Unpaved VMT/Trip	Trips/Day	Total Trips	Total		Unpaved		Paved	
								VMT/Day	Total VMT	VMT/Day	Total VMT	VMT/Day	Total VMT
Debris Clean Up/Maintenance	Employee Vehicle	Onroad	Passenger	50	0.5	10	1,000	500	50,000	5	500	495	49,500
	Supplies Delivery	Onroad	Delivery	40	0.5	2	80	80	3,200	1	40	79	3,160
	Dump Trucks	Onroad	HHDT	40	0.5	33	3,279	1,312	131,152	16	1,639	1,295	129,512

Onroad Emissions

Vehicle Type	Total VMT	Total Emissions (lbs)					
	Total	VOC	CO	NOx	SOx	PM10	PM2.5
Passenger	50,000	23.90	289.40	33.06	0.45	5.20	2.20
Delivery	3,200	1.39	5.77	37.65	0.07	2.20	1.52
Heavy-Heavy Duty	131,152	56.85	236.39	1,543.26	3.06	90.33	62.26
Totals		82.13	531.56	1,613.97	3.58	97.74	65.98

Offroad Equipment Use

	Primary Offroad Equipment	Type	HP	Quantity	Hr/day	Days
	Debris Clean Up/Maintenance	Loader	Offroad	129	1	8
Bulldozer		Offroad	305	1	8	100
Water Truck		Offroad	457	1	8	100

Offroad Emissions

	HP	Number	Emission Factor (lbs/hr)					Hrs/day	Days	Total Emissions (lbs)				
			ROG	CO	NOx	SOx	PM			ROG	CO	NOx	SOx	PM
Loader	129	1	0.0750	0.4470	0.7438	0.0005	0.0647	8	100	60.03	357.59	595.05	0.41	51.78
Bulldozer	305	1	0.1584	0.8044	2.1190	0.0013	0.1043	8	100	126.76	643.53	1,695.23	1.07	83.46
Water Truck	457	1	0.1288	0.5726	1.8535	0.0019	0.0719	8	100	103.03	458.09	1,482.78	1.55	57.55
									289.81	1,459.22	3,773.05	3.02	192.79	

Donnell Basin Project

Maintenance - Emission Calculations

Fugitive Dust Emissions

Assumptions:

1. Fugitive dust emissions are estimated using AP-42.

Emission Categories

- 1) Screening
- 2) Earthmoving: Material Loading/Handling
- 3) Road Dust Paved/Unpaved
- 4) Disturbed Area Windblown Emissions

1) Earthmoving

Emission Types

- A) Dozing
- B) Material Loading/Handling

A) Dozing (AP-42 Section 11.9 for overburden)

$$E = k \times (s)^{1.5} / (M)^{1.4} \text{ For PM10 and } k \times 5.7 \times (s)^{1.2} / (M)^{1.3} \text{ for PM2.5}$$

E = lb/hr

k = Scaling Constant (0.75 for PM10 and 0.105 for PM2.5)

s = Silt Content (assumed to be 4.9%)

M = Moisture Content = 15% (based on SCAQMD moist and soil definition)

Emission Factor, lb/hr

PM10	PM2.5
0.18358	0.11923

Total Dozer Use

Total Dozer Use	Hrs
	800

Dozer Emissions (Tons)

Total Dozer Use	PM10	PM2.5
	0.073	0.048

B) Material Loading/Handling (AP-42, p. 13.2.4.3)

Assumptions:

1. This emission source covers the removal of the excess excavated materials. The materials used onsite are covered by the other fugitive dust source categories.

2. The total excess material removal is expected to be 86,560 tons, which with two assumed drops is 173,120 tons dropped.

$$E = (k)(0.0032)[(U/5)^{-1.3}]/[(M/2)^{1.4}]$$

E = lb/ton

k = Particle Size Constant (0.35 for PM10 and 0.053 for PM2.5)

U = average wind speed = 25 MPH worst day, 8 MPH avg daytime (engineering assumption)

M = moisture content = 15% (SCAQMD moist)

Two separate drops are assumed

	tons/period
Total	173,120

Emission Factors and Emissions

Emission Factors

PM10 Total	PM2.5 Total
0.00012	0.00002

Emissions (Tons/year)

Total	PM10	PM2.5
	0.02127	0.00322

2) Road Dust

Emission Types

- A) Paved Road Dust
- B) Unpaved Road Dust

A) Paved Road Dust

$$E = [k \times (sL)^{0.91} \times (W)^{1.02}] \times (1-P/4N)$$

E = lb/VMT

k = Constant (0.0022 for PM10 and 0.00054 for PM2.5)

sL = Silt Loading (assumed to be 0.03 g/m2 for ADT > 10,000 of Table 13.2.1-2)

W = Average weight of vehicles in tons (calculated below)

P = Days of precipitation (0 assumed for annual calculation)

N = Days in period (365 for annual calculation)

Donnell Basin Project

Maintenance - Emission Calculations

Average Vehicle Weight Calculation

Assumptions:

1. Passenger Vehicles = 2 tons average
2. Midsize "Delivery" Vehicles = 8 ton average
3. Heavy-Heavy Duty Trucks = 27.5 tons average (loaded 40 tons, unloaded 15 tons)

Total Case VMT	Passenger Vehicles	Delivery/Work Vehicles	Heavy-Heavy Duty Vehicles	Total Paved VMT	Average Weight (Tons)
Total Project	49,500	3,160	129,512	182,172	20.2

Total Emission Factors (lb/VMT)

	PM10 Annual	PM2.5 Annual
Total Project	0.0019	0.0005

Emissions (Tons)

	PM10	PM2.5
Total Project	0.18	0.04

B) Unpaved Road Dust

$$E = (k)[(s/12)^{0.9}][[(W/3)^{0.45}][(365-P)/365]$$

k = constant = 1.5 lb/VMT for PM10 and 0.15 lb/VMT for PM2.5

s = Silt Content (assumed to be 4.9%)

W = avg. vehicle weight = calculated below

P = Days of precipitation (0 assumed for annual calculation)

No correction for number of wet days due to assumption of working in dry season

Average Vehicle Weight Calculation

Assumptions:

1. Personal/Professionals/Inspection Vehicles = 2 tons average
2. Midsize "Delivery" Vehicles = 8 ton average
3. Heavy-Heavy Duty Trucks = 27.5 tons average (loaded 40 tons, unloaded 15 tons)

Total Case VMT	Passenger Vehicles	Delivery/Work Vehicles	Heavy-Heavy Duty Vehicles	Total Unpaved VMT	Average Weight (Tons)
Total Project	500.00	40.00	1,639.39	2,179	23.2

Uncontrolled Emission Factors and Emissions

Total Emission Factors (lb/VMT)

	PM10 Annual	PM2.5 Annual
Total Project	1.68	0.17

Emissions (Tons)

	PM10	PM2.5
Total Project	1.83	0.18

Controlled Emissions

Emissions (Tons)

	PM10	PM2.5
Total Project	0.71	0.07

Emission Control	61%
------------------	-----

3) Disturbed Area Windblown Emissions

Assumptions:

1. Emission Factor is 0.38 tons/disturbed acres/year of Total Suspended Particulate (AP-42 Section 11.9)
2. PM10 and PM2.5 fractions of TSP are 0.489 and 0.102 respectively per CEIDARS factors from SCAQMD CEQA Website
3. The total acre-years of disturbed area is estimated to be 7.67 acres.
4. 50% of this total area is disturbed on average throughout the construction period due to mitigation measure requirement to stabilize disturbed areas after active construction has ceased in those areas.
5. Duration of disturbance is 140 days.
6. Disturbed areas are controlled by water dust suppression of 61% control (SCAQMD CEQA website)
7. Restoration of disturbed acres creates no net emission increase of permanently disturbed acres

Disturbed Acres (acre-years)	Total Emissions (Tons)	
	PM10	PM2.5
7.7	0.57	0.12

* Disturbance area includes piles of earth fill.

Fugitive Dust Emissions Summary

Total Fugitive Emissions (tons)

	PM10	PM2.5
Dozing	0.07	0.05
Material Loading/Handling	0.02	0.00
Paved Road Dust	0.18	0.04
Unpaved Road Dust	0.71	0.07
Disturbed Area Windblown Emissions	0.57	0.12
Total	1.55	0.28

Donnell Basin Project

Construction - Onroad Vehicles GHG Emission Calculations

Assumptions:

1. GHG emissions are estimated based on guideline and emission factors provided by The Climate Registry General Reporting Protocol (ver. 2.0 March 2013)

EMFAC 2011 Fuel Consumption Rate in San Bernardino County (gallon/mile)

Passenger	Gasoline	0.047484
Delivery	Diesel	0.109966
Heavy-Heavy Duty	Diesel	0.169405

TCR Table 13.1 Carbon Dioxide Emission Factors for Transport Fuels (kg CO2/gallon)

	CO2
Motor Gasoline	8.78
Diesel	10.21

TCR Table 13.5 Emission Factors for Each Fuel and Vehicle Type (g/mile)

		CH4	N2O
Passenger*	Gasoline	0.0168	0.0051
Delivery	Diesel	0.0010	0.0015
Heavy-Heavy Duty	Diesel	0.0051	0.0048

*Passenger vehicles (Model Year 2010) are assumed to be half passenger cars and half light trucks (vans, pickup trucks, and SUVs).

Onroad Emission Factors - 2014 (pounds/mile)

	CO2	CH4	N2O
Passenger	0.91913	0.00004	0.00001
Delivery	2.47525	0.00001	0.00001
Heavy-Heavy Duty	3.81316	0.00001	0.00001

Total On-road GHG Emissions

Vehicle Type	VMT	Total Emissions (tons)			
	Total	CO2	CH4	N2O	CO2e
Passenger	201,000	92	0.00	0.00	93
Delivery	8,600	11	0.00	0.00	11
Heavy-Heavy Duty	986,480	1,881	0.01	0.01	1,883
Totals		1,984	0.01	0.01	1,986

Donnell Basin Project

Construction - Offroad Equipment GHG Emission Calculations

Assumptions:

1. GHG emissions are estimated based on guideline and emission factors provided by The Climate Registry General Reporting Protocol (ver. 2.0 March 2013)
2. For diesel-fueled equipment, fuel consumption rate of 0.38 lbs/bhp-hr and density of 6.8 lbs/gallon are used.
3. For gasoline-fueled equipment, fuel consumption rate of 0.47 lbs/bhp-hr and density of 6.0 lbs/gallon are used.

TCR Table 13.1 Carbon Dioxide Emission Factors for Transport Fuels (kg CO2/gallon)

	CO2 (kg/gallon)
Motor Gasoline	8.78
Diesel	10.21

TCR Table 13.7 Methane and Nitrous Oxide Emission Factors for Non-Highway Vehicles

Construction	CH4 (g/gallon)	N2O (g/gallon)
Gasoline	0.50	0.22
Diesel	0.58	0.26

Total Offroad GHG Emissions

	Fuel Use (gallon)	Total Emissions (tons)			
		CO2	CH4	N2O	CO2e
Gasoline	18.80	0	0.00	0.00	0
Diesel	113,611	1,279	0.07	0.03	1,290
Totals	113,630	1,279	0.07	0.03	1,291

Donnell Basin Project

Maintenance - Onroad Vehicles GHG Emission Calculations

Assumptions:

1. GHG emissions are estimated based on guideline and emission factors provided by The Climate Registry General Reporting Protocol (ver. 2.0 March 2013)

EMFAC 2011 Fuel Consumption Rate in San Bernardino County (gallon/mile)

Passenger	Gasoline	0.047484
Delivery	Diesel	0.109966
Heavy-Heavy Duty	Diesel	0.169405

TCR Table 13.1 Carbon Dioxide Emission Factors for Transport Fuels (kg CO2/gallon)

	CO2
Motor Gasoline	8.78
Diesel	10.21

TCR Table 13.5 Emission Factors for Each Fuel and Vehicle Type (g/mile)

		CH4	N2O
Passenger*	Gasoline	0.0168	0.0051
Delivery	Diesel	0.0010	0.0015
Heavy-Heavy Duty	Diesel	0.0051	0.0048

*Passenger vehicles (Model Year 2010) are assumed to be half passenger cars and half light trucks (vans, pickup trucks, and SUVs).

Onroad Emission Factors - 2014 (pounds/mile)

	CO2	CH4	N2O
Passenger	0.91913	0.00004	0.00001
Delivery	2.47525	0.00001	0.00001
Heavy-Heavy Duty	3.81316	0.00001	0.00001

Total On-road GHG Emissions

	VMT	Total Emissions (tons)			
Vehicle Type	Total	CO2	CH4	N2O	CO2e
Passenger	50,000	23	0.00	0.00	23
Delivery	3,200	4	0.00	0.00	4
Heavy-Heavy Duty	131,152	250	0.00	0.00	250
Totals		277	0.00	0.00	277

Donnell Basin Project

Maintenance - Offroad Equipment GHG Emission Calculations

Assumptions:

1. GHG emissions are estimated based on guideline and emission factors provided by The Climate Registry General Reporting Protocol (ver. 2.0 March 2013)
2. For diesel-fueled equipment, fuel consumption rate of 0.38 lbs/bhp-hr and density of 6.8 lbs/gallon are used.
3. For gasoline-fueled equipment, fuel consumption rate of 0.47 lbs/bhp-hr and density of 6.0 lbs/gallon are used.

TCR Table 13.1 Carbon Dioxide Emission Factors for Transport Fuels (kg CO2/gallon)

	CO2 (kg/gallon)
Motor Gasoline	8.78
Diesel	10.21

TCR Table 13.7 Methane and Nitrous Oxide Emission Factors for Non-Highway Vehicles

Construction	CH4 (g/gallon)	N2O (g/gallon)
Gasoline	0.50	0.22
Diesel	0.58	0.26

Total Offroad GHG Emissions

	Fuel Use (gallon)	Total Emissions (tons)			
		CO2	CH4	N2O	CO2e
Gasoline	0.00	0	0.00	0.00	0
Diesel	12,684	143	0.01	0.00	144
Totals	12,684	143	0.01	0.00	144

Screening Level Health Risk Assessment

Assumptions:

- 1) Annual concentration based on SCREEN3 hourly impacts multiplied by 0.08 per USEPA Guidance
- 2) The DPM emissions are modeled as a single volume source with an initial height of 4 meters and vertical dimension of 4 meters to account for the buoyancy of the diesel engine exhaust and with an initial lateral dimension of 100 meters, which is considered a reasonable assumption given the spread of activity and emissions over the large area of the project site.
- 3) SCREEN3 modeling inputs are attached, and nearest school is assumed to be 350 meters away from the project site emissions area.
- 4) The emissions rate modeled was 1 grams per second, equivalent to an hourly emissions rate of just under 8 lbs/hour that resulted in an hourly maximum impact of 98 ug/m3. The calculated onsite hourly maximum and average off-road equipment emission rates were used as correction factors to adjust the concentration to the actual emissions values.
- 5) Risk Calculations based on SCAQMD's "Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis"
- 6) Unit risk and REL factors are from CARB/OEHHA.

Calculations

$$\text{Cancer Risk} = \text{CRdpm} = \text{Cdpm} \times \text{URFdpm} \times \text{LEA} \times \text{ProjAdj}$$

Where:

CRdpm = Cancer Risk from DPM exposure
 Cdpm = Annual Average Concentration of DPM (SCREEN3 results time 0.08 for annual)
 URFdpm = Unit Risk Factor for DPM (300 in a million for DPM)
 LEA = Lifetime exposure adjustment (1 for schoolchildren)
 ProjAdj = Added factor that adjusts for project life of 10 months (10/12 x 1/70)

	Cdpm	URFdpm	LEA	ProjAdj	CRdpm
Schoolchildren	7.05E-02	3.00E-04	1	1.19E-02	2.52E-07

$$\text{Chronic HI} = \text{Hidpm} = \text{Cdpm} / \text{RELdpm}$$

Where:

Hidpm = Chronic Health Index for DPM exposure (unitless)
 Cdpm = Annual Average Concentration of DPM (SCREEN3 results corrected to actual average annual emissions times 0.08 for annual)
 RELdpm = Reference Exposure Level DPM (5.0 ug/m3)

	Cdpm	RELdpm	Hidpm
Schoolchildren	7.05E-02	5.00E+00	1.41E-02

$$\text{Acute HI} = \text{Ci} * \sum \text{Frac}_i / \text{RELI}$$

Where:

Acute HI = Acute Health Index for diesel equipment emissions exposure (unitless)
 Ci = Concentration of exposure for particulate or VOC based on hourly modeling result and actual maximum hourly offroad emission:
 $\sum \text{Frac}_i / \text{RELI}$ = Summation of the fraction of particulate or VOC TAC i divided by the Reference Exposure Level for TAC

	TACs	Ci	$\sum \text{Frac}_i / \text{RELI}$	HI(i)
Schoolchildren	Part. TACs	7.36E+00	1.33E-04	9.82E-04
	VOC TACs	1.29E+01	2.85E-03	3.68E-02
				3.78E-02 Total

06/28/13
17:23:43

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 13043 ***

Donnell Basin

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = VOLUME
EMISSION RATE (G/S) = 1.000000
SOURCE HEIGHT (M) = 4.0000
INIT. LATERAL DIMEN (M) = 100.0000
INIT. VERTICAL DIMEN (M) = 4.0000
RECEPTOR HEIGHT (M) = 1.5000
URBAN/RURAL OPTION = URBAN

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.000 M**4/S**3; MOM. FLUX = 0.000 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	0.000	0	0.0	0.0	0.0	0.00	0.00	0.00	
200.	0.000	0	0.0	0.0	0.0	0.00	0.00	0.00	
300.	112.1	5	1.0	1.0	10000.0	4.00	122.52	22.78	NO
400.	86.92	5	1.0	1.0	10000.0	4.00	129.69	27.91	NO
500.	70.70	5	1.0	1.0	10000.0	4.00	136.69	32.66	NO
600.	59.40	5	1.0	1.0	10000.0	4.00	143.55	37.08	NO
700.	51.10	5	1.0	1.0	10000.0	4.00	150.26	41.24	NO
800.	44.74	5	1.0	1.0	10000.0	4.00	156.84	45.16	NO
900.	39.73	5	1.0	1.0	10000.0	4.00	163.29	48.87	NO
1000.	35.68	5	1.0	1.0	10000.0	4.00	169.62	52.41	NO
1100.	32.35	5	1.0	1.0	10000.0	4.00	175.84	55.80	NO
1200.	29.56	5	1.0	1.0	10000.0	4.00	181.94	59.04	NO
1300.	27.19	5	1.0	1.0	10000.0	4.00	187.94	62.15	NO
1400.	25.15	5	1.0	1.0	10000.0	4.00	193.83	65.16	NO
1500.	23.38	5	1.0	1.0	10000.0	4.00	199.62	68.06	NO
1600.	21.84	5	1.0	1.0	10000.0	4.00	205.33	70.86	NO
1700.	20.47	5	1.0	1.0	10000.0	4.00	210.94	73.58	NO
1800.	19.26	5	1.0	1.0	10000.0	4.00	216.46	76.22	NO
1900.	18.18	5	1.0	1.0	10000.0	4.00	221.91	78.79	NO
2000.	17.21	5	1.0	1.0	10000.0	4.00	227.27	81.29	NO
2100.	16.33	5	1.0	1.0	10000.0	4.00	232.56	83.72	NO
2200.	15.53	5	1.0	1.0	10000.0	4.00	237.77	86.10	NO
2300.	14.80	5	1.0	1.0	10000.0	4.00	242.91	88.42	NO
2400.	14.14	5	1.0	1.0	10000.0	4.00	247.98	90.69	NO
2500.	13.53	5	1.0	1.0	10000.0	4.00	252.98	92.91	NO
2600.	12.97	5	1.0	1.0	10000.0	4.00	257.92	95.09	NO
2700.	12.45	5	1.0	1.0	10000.0	4.00	262.80	97.22	NO
2800.	11.97	5	1.0	1.0	10000.0	4.00	267.61	99.31	NO
2900.	11.52	5	1.0	1.0	10000.0	4.00	272.37	101.36	NO
3000.	11.10	5	1.0	1.0	10000.0	4.00	277.07	103.38	NO
3500.	9.393	5	1.0	1.0	10000.0	4.00	299.78	112.96	NO
4000.	8.126	5	1.0	1.0	10000.0	4.00	321.31	121.84	NO
4500.	7.151	5	1.0	1.0	10000.0	4.00	341.79	130.16	NO
5000.	6.380	5	1.0	1.0	10000.0	4.00	361.37	137.99	NO
5500.	5.756	5	1.0	1.0	10000.0	4.00	380.13	145.43	NO
6000.	5.240	5	1.0	1.0	10000.0	4.00	398.17	152.51	NO
6500.	4.807	5	1.0	1.0	10000.0	4.00	415.56	159.29	NO
7000.	4.439	5	1.0	1.0	10000.0	4.00	432.35	165.80	NO

7500.	4.122	5	1.0	1.0	10000.0	4.00	448.61	172.07	NO
8000.	3.847	5	1.0	1.0	10000.0	4.00	464.37	178.12	NO
8500.	3.606	5	1.0	1.0	10000.0	4.00	479.68	183.98	NO
9000.	3.393	5	1.0	1.0	10000.0	4.00	494.56	189.66	NO
9500.	3.203	5	1.0	1.0	10000.0	4.00	509.06	195.18	NO
10000.	3.033	5	1.0	1.0	10000.0	4.00	523.20	200.55	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:
 216. 147.0 5 1.0 1.0 10000.0 4.00 116.45 18.16 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** SCREEN DISCRETE DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
350.	97.98	5	1.0	1.0	10000.0	4.00	126.12	25.40	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	147.0	216.	0.

 ** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
