

Section 3.8

Hazards and Hazardous Materials

This section describes the environmental and regulatory setting and the potential environmental impacts related to hazards and hazardous materials as they pertain to implementation of the proposed project. The section also describes existing conditions on the project site and regulations that relate to hazardous materials and fire hazards. Information in this section is based primarily on the site-specific *Phase I Environmental Site Assessment* prepared by Tetra Tech (2018a; see **Appendix H-1**), the *Technical Memorandum for the Phase I Environmental Site Assessment* prepared by Tetra Tech (2018b; see **Appendix H-2**), and the *Preliminary Geotechnical Engineering Report* prepared by Terracon Consultants, Inc. (2018; see **Appendix G**). Additionally, analysis of potential hazards relative to project compatibility with airport operations is based upon the *Barstow-Daggett Airport Safety and Compatibility Technical Memorandum* prepared by Tetra Tech (2019; see **Appendix H-3**). These reports were peer reviewed by Michael Baker International.

ENVIRONMENTAL SETTING

SCHOOLS

The nearest schools in the project vicinity are more than 5 miles from the project site and include the following:

- Alternative Education (grades K–12), 33525 Ponnay, Daggett
- Silver Valley High School (grades 9–12), 35484 Daggett-Yermo Road, Yermo
- Yermo School (grades TK–8), 38280 Gleason Street, Yermo
- Newberry Elementary School (grades TK–4), 33713 Newberry Road, Newberry Springs

AIRPORTS AND AIRSTRIPS

Barstow-Daggett Airport, a County-owned, public-use, general aviation airport, is directly south of the project site. The airport is classified in the National Plan of Integrated Airport Systems as a general aviation, general utility facility that accommodates virtually all general aviation aircraft with maximum gross takeoff weights of 12,500 pounds or less. The airport is situated on 1,087 acres in an unincorporated area of San Bernardino County 15 miles east of

Barstow. Aircraft usage has decreased over time from approximately 70 aircraft in 1992 to approximately 46.

The nearest heliport is the SCE Solar Heliport, approximately 2.7 miles east of the project site. The nearest military airport is the Twentynine Palms Strategic Expeditionary Landing Field, about 65 miles to the southeast.

WILDLAND FIRES

A wildfire or wildland fire is a fire in an area of combustible vegetation that generally occurs in the countryside or a rural area. Depending on the type of vegetation where it occurs, a wildfire can also be classified more specifically as a brush fire, bush fire, desert fire, forest fire, grass fire, hill fire, peat fire, or vegetation fire.

Wildfires present a significant potential for disaster in San Bernardino County, a region with relatively high temperatures, low humidity, and low precipitation during the summer, followed by a fall season that includes high velocity, very dry Santa Ana winds. Between 2005 and 2009, 23 wildfires burned over 168,000 acres in San Bernardino County (County of San Bernardino County).

According to the California Department of Forestry and Fire Protection (Cal Fire), a Fire Hazard Severity Zone (FHSZ) is a mapped area that designates zones (based on factors such as fuel, slope, and fire weather) with varying degrees of fire hazard (i.e., moderate, high, and very high). While the designation of an FHSZ does not predict when or where a wildfire will occur, FHSZs do identify areas where wildfire hazards could be more severe and therefore are of greater concern. FHSZ maps evaluate wildfire hazards, which are physical conditions that create a likelihood that an area will burn over a 30- to 50-year period. The maps do not take into account modifications such as fuel reduction efforts.

Although wildland fires represent a real threat to San Bernardino County, the County's Hazard Overlay mapping (sheet E110B) shows that the project site is not located in a Fire Safety Overlay District. Similarly, as shown on the Cal Fire (2007) map of Fire Hazard Severity Zones in the northwestern part of the county, the project site is designated as a Local Responsibility Area (LRA), Moderate. The project area and its surroundings are categorized as having a moderate potential for wildland fires. No areas in the general vicinity are classified as having either LRA High or LRA Very High potential for wildland fires.

HAZARDOUS MATERIALS AND WASTE

Hazardous materials, as defined by California Health and Safety Code Section 25501(n) and (o), are substances with certain physical properties that could pose a substantial present or

future hazard to human health or the environment when improperly handled, disposed, or otherwise managed.

Hazardous materials are grouped into the following four categories, based on their properties:

- Toxic – causes human health effects
- Ignitable – has the ability to burn
- Corrosive – causes severe burns or damage to materials
- Reactive – causes explosions or generates toxic gases

A hazardous waste is any hazardous material that is discarded, abandoned, or slated to be recycled. When improperly handled, hazardous materials and hazardous waste can result in public health hazards if discharged into the environment through releases into soil or groundwater, or via airborne releases in the form of vapors, fumes, or dust. Contaminated soil and groundwater containing concentrations of hazardous constituents that exceed regulatory thresholds must be handled and disposed of as hazardous waste when excavated or pumped. The California Code of Regulations (CCR), Title 22, Section 66261.20 et seq. contains technical descriptions of toxic characteristics that could cause soil or groundwater to be classified as hazardous waste.

Public health is potentially at risk whenever hazardous materials are or will be used. It is necessary to differentiate between the hazard of these materials and the acceptability of the risk they pose to human health and the environment. A hazard is any situation that has the potential to cause damage to human health and the environment. The risk to health and public safety is determined by the probability of exposure and by the inherent toxicity of a material (DTSC 2018a).

Factors that can influence health effects when human beings are exposed to hazardous materials include the dose to which the person is exposed, the frequency of exposure, the duration of exposure, the exposure pathway (route by which a chemical enters a person's body), and the individual's unique biological susceptibility.

Additionally, hazardous wastes are hazardous substances that no longer have practical use, such as materials that have been discarded, discharged, spilled, or contaminated or are being stored until they can be disposed of properly (CCR Title 22, Section 66261.10). Soil that is excavated from a site containing hazardous materials is a hazardous waste if it exceeds specific CCR Title 22 criteria. Various agencies maintain hazardous waste and substance lists in planning documents used by state and local agencies to comply with CEQA requirements

in providing information about the location of hazardous materials sites. While hazardous substances are regulated by multiple agencies, as described under the Regulatory Framework subsection below, cleanup requirements for hazardous wastes are determined on a case-by-case basis according to the agency with lead jurisdiction over a project.

PHASE I ENVIRONMENTAL ASSESSMENT RESULTS

A Phase I Environmental Site Assessment (ESA) is a report prepared for a project site that identifies existing and potential environmental contamination liabilities. The Phase I ESA is generally considered the first step in the process of environmental due diligence and does not include sampling of soil, air, groundwater, or building materials.

As part of the Phase I ESA Tetra Tech (2018a) conducted for the proposed project, a standard radius database search was conducted of 60 federal, state, local, and proprietary records. The project site was the center of the search, with a radius distance of 1 mile consistent with the ASTM E1527 13 standard, and inclusive of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

The objective of the Phase I ESA was to identify Recognized Environmental Conditions (RECs), Historical RECs (HRECs), and Controlled RECs (CRECs) that affect the project site. RECs are defined in ASTM International E1527 13 as “the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.” According to the ASTM Phase I ESA standard, the term “recognized environmental condition” is not intended to include de minimis conditions (minor things) that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate government authorities.

Based on the Phase I ESA site reconnaissance performed on June 19, 2018, the EDR database review, historical aerial and topographic map review, landowner interviews and completed user questionnaires, review of the GeoTracker database, and review of other documents made available, two RECs were identified, as further described below.

The projects containing RECs that were identified during the completion of the Phase I ESA are the Sunray Solar Energy project and Barstow-Daggett Airport. The two facilities and associated RECs are identified in detail in **Table 3.8-1, Identified RECs Summary**.

**Table 3.8-1:
Identified RECs Summary**

REC	Description	Remediated, Yes or No? Remarks
<p>Sunray Solar Energy Project: The solar facility (formerly the Solar Energy Generating Station II), at 35100 Santa Fe Street in Daggett and located immediately adjacent to the project site, was listed on the Emergency Response Notification System (ERNS) database for two occurrences.</p>	<ul style="list-style-type: none"> • In 1994, 100 gallons of other oil (Caloria Heat Transfer Oil) were spilled and reached the water at the site. The listing did not specify whether the spill impacted surface water or groundwater. • In 2014, 900 gallons of heat transfer fluid were spilled due to a failed HCE tube at the weld. 	<p>Yes. The Sunray Solar Energy facility is located on a site where another solar facility (SEGS solar facility) was formerly located. The former SEGS facility is listed as an inactive facility that was a Large Quantity Generator (LQG) meaning that the site generated 1,000 kilograms per month or more of hazardous waste or more than one kilogram per month of acutely hazardous waste. The site was also designated as an Emergency Planning and Community Right-to-Know (EPCRA) site which means the public was granted additional knowledge of the activities conducted at the site due to the public health risk posed by the storage and handling of toxic materials at the facility. This listing is indicative of historical regulatory status and is not considered a REC to the proposed Daggett Solar Power Facility Project site. Currently, the Sunray project is an active solar project because the site has been redeveloped after this record. No new occurrences have been reported at the redeveloped site.</p>
<p>Barstow-Daggett Airport: The airport is listed in the HIST Cal-Site database and is immediately adjacent to the south of the project site.</p>	<ul style="list-style-type: none"> • The airport includes five former underground storage tank (UST) sites that contain nine USTs. • Two waste disposal sites (Waste Disposal Sites A and B) are also located at the airport. Contaminants of concern have been previously identified from past soil sampling conducted for UST sites. See the Phase I ESA in Appendix H-1 for a detailed discussion of the contaminants found at Waste Disposal Sites A and B. • Metal-impacted soils associated with the waste disposal sites represent a material threat to the project site due to wind-transport mechanisms. • The releases associated with the UST sites appeared to have impacted groundwater with gasoline. 	<p>No. Based on the information available, the soil and/or groundwater impacts at this property associated with the leaking USTs and waste disposal activities are considered a REC because contamination from these areas of the airport represents a material threat based on proximity to the project site, the history of contamination, groundwater flow direction toward the east/southeast, and lack of closure documentation. See mitigation measure HM-1 for mitigation addressing sampling and analysis to further define soil conditions and avoidance measures, if required.</p>

Source: Tetra Tech 2018a

TRANSPORTATION OF HAZARDOUS MATERIALS

Hazardous materials transported through San Bernardino County are predominantly carried by truck on the interstate highway system. Registered hazardous waste haulers may use all roadways in the county to transport hazardous materials. To date, regulators have not placed restrictions on roadways available for the transportation of hazardous waste to and from the project site (FMCSA 2018).

AIRPORT OPERATIONS HAZARDS

Airport-related hazards are generally associated with aircraft accidents, particularly during takeoffs and landings. Other airport operation hazards include incompatible land uses, structures of a certain height when located too close to the runways and operations areas, wildlife hazards (e.g., bird strikes), and tall structures that penetrate the FAA established imaginary surfaces surrounding an airport.

Barstow-Daggett Airport is contiguous and adjacent to the project site parcels on the north, east, and west boundaries. The airport has been operational in close proximity with the following features:

- 626 MW Coolwater Generating Station, originally built in the 1950s as a coal-fired power plant and later converted to a natural gas-fired power plant, and now retired
- The 44-MW operating photovoltaic Sunray Solar Project
- The Los Angeles Department of Water and Power (LADWP) high-voltage transmission corridor of approximately 1,000 feet in width
- Several high-voltage substations and transmission lines owned by SCE
- Major highway and railroad infrastructure

The project area is in proximity to existing high voltage electrical infrastructure, existing energy generation facilities, and other industrial uses. Therefore, structural elements similar to those proposed with the project are present in the surrounding setting and in proximity to ongoing operations at Barstow-Daggett Airport.

The project area is located within the boundaries of the Airport Comprehensive Land Use Plan (ACLUP) for Barstow-Daggett Airport (County of San Bernardino 1992 and 2012). The airport operates as a County-owned, public use, general aviation airport and is located directly to the south of the project site, just north of I-40. An evaluation of the compatibility of the proposed

project with the policies identified in the ACLUP is included as Attachment 1 of **Appendix H-3** of this EIR.

The closest military airport is the Twentynine Palms Strategic Expeditionary Landing Field, about 65 miles to the southeast. All of the airports in the project vicinity have an adopted Airport Land Use Compatibility Plan.

REGULATORY FRAMEWORK

FEDERAL

Emergency Planning Community Right-to-Know Act

The Emergency Planning Community Right-to-Know Act (EPCRA) requires infrastructure at the state or local level to plan for emergencies resulting from potential release of chemical materials. Any documented information pertaining to a specific release at a site is required to be made publicly available so that interested parties may become informed about potentially dangerous chemicals released in the community. Sections 301 through 312 of the EPCRA are administered by the US Environmental Protection Agency's (EPA) Office of Emergency Management.

Hazardous Materials Transportation Act

Under Title 49 of the Code of Federal Regulations, the US Department of Transportation is responsible for regulating the transport of hazardous materials. The California Highway Patrol (CHP) and the California Department of Transportation (Caltrans) are primarily responsible for enforcing federal and state regulations pertaining to such activities and for responding to any related emergencies. These agencies are also responsible for necessary permitting for the transport of hazardous materials.

Toxic Substances Control Act

The Toxic Substances Control Act phased out the use of asbestos and asbestos-containing materials in new building materials. The act identifies requirements for the use, handling, and disposal of asbestos-containing materials. Additionally, Section 402(a)(1) of the act establishes disposal standards for lead-based paint.

Resource Conservation and Recovery Act (as Amended by the Hazardous and Solid Waste Amendments of 1984)

The Resource Conservation and Recovery Act (RCRA) generally communicates federal laws pertaining to hazardous waste management and provides a “cradle-to-grave” approach to the regulation of hazardous wastes. The RCRA requires any entity generating hazardous waste to identify and track such substances from generation to recycling, reuse, or disposal. The California Department of Toxic Substances Control implements the RCRA program in combination with other state hazardous waste laws, collectively known as the Hazardous Waste Control Law.

Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as “Superfund,” was enacted by Congress on December 11, 1980. This law (42 United States Code 103) provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA establishes requirements concerning closed and abandoned hazardous waste sites, provides for liability of persons responsible for releases of hazardous waste at these sites, and establishes a trust fund to provide for cleanup when no responsible party can be identified. CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP (Title 40, Code of Federal Regulations [CFR], Part 300) provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List.

Occupational Safety and Health Administration

The mission of the Occupational Safety and Health Administration (OSHA) is to ensure the safety and health of American workers by setting and enforcing standards; providing training, outreach, and education; and encouraging continual improvement in workplace safety and health. OSHA establishes and enforces protective standards and reaches out to employers and employees through technical assistance and consultation programs. OSHA standards are listed in 29 CFR 1910, which include preparation of Health and Safety Plans (HASPs). HASPs identify potential hazards associated with a proposed land use and may provide appropriate mitigation measures as required.

29 CFR Section 1910.120(e) requires all employees working on site exposed to hazardous substances, health hazards, or safety hazards and their supervisors and management

responsible for the site to receive training before they are permitted to engage in hazardous waste operations that could expose them to hazardous substances, safety, or health hazards.

STATE

California Environmental Quality Act

CEQA (California Public Resources Code, Section 21000 et seq.) was established by the state legislature to inform both state and local governmental decision-makers and the public about significant environmental effects of proposed activities (including impacts on biological resources) to identify ways to avoid or reduce significant adverse effects on the environment and to disclose the reasons why a project is approved if significant environmental impacts would result.

California Environmental Protection Agency

The California Environmental Protection Agency (CalEPA) was created in 1991 by Governor's Executive Order. The six boards, departments, and office were placed under the CalEPA "umbrella" to create a cabinet-level voice for the protection of human health and the environment and to ensure the coordinated deployment of state resources. The mission of CalEPA is to restore, protect, and enhance the environment to ensure public health, environmental quality, and economic vitality (CalEPA 2017). CalEPA and the State Water Resources Control Board establish rules governing the use of hazardous materials and the management of hazardous waste. Applicable state and local laws include the following:

- Public Safety/Fire Regulations/Building Codes
- Hazardous Waste Control Law
- Hazardous Substances Information and Training Act
- Air Toxics Hot Spots and Emissions Inventory Law
- Underground Storage of Hazardous Substances Act
- Porter-Cologne Water Quality Control Act

Also, as required by Government Code Section 65962.5, CalEPA develops an annual update to the Hazardous Waste and Substances Sites (Cortese) List. The DTSC is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional hazardous materials release information for the list.

California Fire Code

The California Fire Code, which is updated every 3 years, is included in California Code of Regulations Title 24, Chapter 9 and was created by the California Building Standards Commission. Based on the International Fire Code, the California Fire Code serves as the primary means for authorizing and enforcing procedures and methods to ensure the safe handling and storage of hazardous substances that pose potential public health and safety hazards. The code regulates the use, handling, and storage requirements for hazardous materials at certain facilities. The California Fire Code and the California Building Code apply a classification system in identifying appropriate protective measures relative to fire protection and public safety. Such measures may include identification and use of proper construction standards, setbacks from property lines, and/or installation of specialized equipment.

State Fire Regulations

Fire regulations for California are established in Section 13000 et seq. of the California Health and Safety Code, which includes regulations for structural standards (similar to those identified in the California Building Code), fire protection and public notification systems, fire protection devices such as extinguishers and smoke alarms, standards for high-rise structures and childcare facilities, and fire suppression training. The State Fire Marshal is responsible for enforcement of these established regulations and building standards for all state-owned buildings, state-occupied buildings, and state institutions in California.

Strategic Fire Plan for California

The 2010 Strategic Fire Plan was prepared by the California Board of Forestry and Fire Protection and the California Department of Forestry and Fire Protection (Cal Fire) for the purpose of statewide fire protection. The plan is aimed at improving the availability and application of data on fire hazards and risk assessment; land use planning relative to fire prevention and safety; facilitating cooperation and planning between communities and the multiple fire protection jurisdictions, including county- and community-based wildfire protection plans; establishing fire resistance in assets at risk; shared visioning among multiple fire protection jurisdictions and agencies; assessment of levels of fire suppression and related services; and appropriate recovery efforts following the event of a fire.

California Occupational Safety and Health Administration

California Occupational Safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than federal regulations. The employer is

required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR 337–340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings, and health and safety plans (8 CCR 5192).

LOCAL

San Bernardino County Fire Department

The San Bernardino County Fire Department, Hazardous Materials Division, is the Certified Unified Program Agency (CUPA) for San Bernardino County. It issues permits to and conducts inspections of businesses that use, store, or handle substantial quantities of hazardous materials and/or waste. The CUPA is charged with the responsibility of conducting compliance inspections for over 7,000 regulated facilities in the county. These facilities handle hazardous materials, generate or treat hazardous waste, and/or operate an underground storage tank. The CUPA employs a comprehensive environmental management approach to resolve environmental issues and uses education and enforcement procedures to minimize the potential risk to human health and the environment while promoting fair business practices. As a CUPA, the San Bernardino County Fire Department manages six hazardous material and hazardous waste programs. The CUPA program is designed to consolidate, coordinate, and uniformly and consistently administer permits, inspection activities, and enforcement activities throughout the county.

County of San Bernardino General Plan

The County's General Plan includes policies and programs that are intended to address hazards to the public and environment and guide future development in a way that lessens impacts. For instance, the General Plan requires the application of program review and permitting procedures for proposed land uses potentially introducing hazardous substances, as well as the inspection of hazardous material handlers and hazardous waste generators. Policies and goals that are relevant to hazards and hazardous materials are listed below.

Renewable Energy and Conservation Element

Policy RE 4.6 Require all recyclable electronic and/or toxic materials to be recycled in accordance with the requirements of the Basel Convention or comparable standard.

Safety Element**GOAL S2**

The County will minimize the generation of hazardous waste in the County and reduce the risk posed by storage, handling, transportation, and disposal of hazardous wastes.

Policy S 2.1

Because reducing the amount of waste generated in this County is an effective mechanism for reducing the potential impact of these wastes on the public health and safety and the environment, and because legislation encourages the reduction, to the extent feasible, of hazardous waste, this jurisdiction will encourage and promote practices that will, in order of priority: (1) reduce the use of hazardous materials and the generation of hazardous wastes at their source; (2) recycle the remaining hazardous wastes for reuse; and (3) treat those wastes that cannot be reduced at the source or recycled. Only residuals from waste recycling and treatment will be land disposed.

Policy S 2.2

Include extensive public participation in the County's application review process for siting hazardous waste facilities and coordinate among agencies and County departments to expedite the process. Apply a uniform set of criteria to the siting of these facilities for the protection of public health and safety and the environment.

Policy S 2.3

Ensure that environmental review is conducted for projects proposed on sites that have been identified as contaminated.

Policy S 2.5

Minimize the risk of exposure to hazardous substances by residential and other sensitive receptors through the application of program review and permitting procedures.

GOAL S3

The County will protect its residents and visitors from injury and loss of life and protect property from fires.

Policy S 3.2

The County will endeavor to prevent wildfires and continue to provide public safety from wildfire hazards.

San Bernardino County Code of Ordinances**Title 2, Division 3, Fire Protection and Explosives and Hazardous Materials**

Chapter 6, Permits, Inspections and Hearing Procedures for Hazardous Materials, prohibits any person or business subject to the requirements of the CUPA Permit Program Elements

from generating, producing, storing, treating, or other handling of hazardous materials or hazardous waste without getting the proper operation permitting and paying the appropriate fees.

Chapter 7, CUPA Permit Elements for Hazardous Materials, defines the types of facilities, activities, and operations that are subject to these fees and permit requirements.

Title 8, Division 2, Land Use Zoning Districts and Allowed Land Uses

Development Code Chapter 82.13, Fire Safety (FS) Overlay, was created to provide greater public safety in areas prone to wildland brush fires by establishing additional development standards for these areas.

Chapter 82.16, Hazardous Waste (HW) Overlay, ensures that hazardous waste facilities are sited in areas that protect public health, safety, welfare, and the environment by buffering hazardous waste facilities so that incompatible uses are not permitted to be developed in the vicinity.

Title 8, Division 4, Standards for Specific Land Uses and Activities

Development Code Chapter 84.11, Hazardous Waste Facilities, includes provisions that apply to hazardous waste facilities where allowed in compliance with Chapter 82.16 described above. The chapter states that an approved Special Use Permit is required for the establishment of a hazardous waste facility. The permit's purpose is to evaluate the operation and monitoring plan of the facility; ensure the facility has adequate measures for monitoring ongoing impacts to air quality, groundwater, and environmentally sensitive resources; evaluate the types and quantities of wastes that will be treated or disposed of at the facility; and require periodic inspections of the facility to ensure conditions of approval are implemented and monitored.

Barstow-Daggett Airport Land Use Plan

The Airport Comprehensive Land Use Plan for Barstow-Daggett Airport was prepared to comply with state planning law and is the primary land use document for the airport (County of San Bernardino 1992 and FAA 2012). Its purpose is fourfold:

- To promote the development of compatible land uses in the area influenced by airport operations.
- To safeguard the general welfare of the inhabitants within the vicinity of the airport by minimizing exposure to excessive noise levels.

- To safeguard the general welfare of the inhabitants within the vicinity of the airport by minimizing exposure to crash hazards associated with aircraft operations.
- To safeguard the general welfare of aviation activities within the vicinity of the airport by imposing appropriate height restrictions for the protection of aircraft operations.

The plan establishes land uses for the area in the vicinity of the airport. The plan area is divided into three safety review areas, each of which reflects a particular level and type of hazard or risk within its borders. It has been determined that Safety Review Area 1 has the highest exposure to aircraft operations and therefore the highest potential to be impacted by aviation-related hazards. Conversely, Safety Review Area 3 has the lowest exposure to aircraft operations and consequently the lowest potential to be impacted by aviation-related hazards.

The principal land use planning goals for an airport comprehensive land use plan are to minimize potential harm to people and property, to protect aircraft operations, and to provide for the viability of the airport. These objectives are generally accomplished by limiting land use densities and restricting land use activity in the areas with the highest potential to be affected by aircraft operations or aircraft accidents. The safety areas for Daggett-Barstow Airport are described below.

- Safety Area 1, or the Runway Protection Zone (RPZ), is designed to protect people and property on the ground and to protect airborne aircraft. The area is centered on the extended runway centerline, beginning at the primary surface and extending outward horizontally 1,000 feet. This area is designated as both a runway object-free area (OFA) and a runway protection zone (RPZ). The purpose of the OFA is to identify and preserve areas on or near airports for reasons of ground or flight safety. The intention of the RPZ is to identify and preserve an area off each runway end that has significant potential for aircraft crashes during takeoffs and landings. The RPZ or Safety Review Area 1 is located at the end of the runway zones and is to remain clear of objects or to be restricted to certain objects to ensure safety during aircraft takeoff and landing. In the RPZ, development and associated design features that might create glare, produce misleading lights, or lead to the construction of residences, fuel handling and storage facilities, smoke generating activities, and places of public assembly are prohibited in the RPZ.
- Safety Area 2 also furnishes protection to both people on the ground and to aircraft operations. The area is centered over the runway, extending outward to the 65 CNEL noise contour. In addition to the 65 CNEL noise contour, a single object free area, the runway obstacle free zone (OFZ), lies mostly within the safety review area. The OFZ is

a 400-foot-wide three-dimensional volume of airspace centered above the runway, extending 200 feet beyond each end.

- Safety Area 3 is coterminous with the horizontal surface and provides protection to both people on the ground and to aircraft operations. The area is centered over the airport, extending outward in all directions from the primary surfaces. The land use districts in this area are low-density single-family residential and agriculture. In general, all the land use districts in Safety Review Area 3, excluding those beneath the outer segment of the approach surface and those beneath the transitional surfaces, are compatible with the airport's activities.

A portion of the project site located just north of the airport is partially designated within Safety Area 1. Development of the project in these areas will be in accordance with guidance for Safety Review Areas, and in consultation with the FAA and ALUC.

Emergency Response Plan

The intent of hazard mitigation is to reduce and/or eliminate loss of life and property. Hazard mitigation is defined by the Federal Emergency Management Agency (FEMA) as “any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards.” FEMA defines a hazard as “any event or condition with the potential to cause fatalities, injuries, property damage, infrastructure damage, agricultural loss, environmental damage, business interruption, or other loss.”

The purpose of the County of San Bernardino's (2011) Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) is to demonstrate the mechanisms for reducing and/or eliminating risk in the unincorporated area of the county and its five special districts. The MJHMP process encourages communities to develop goals and projects that will reduce risk and build a more disaster-resilient community by analyzing potential hazards.

IMPACT ANALYSIS AND MITIGATION MEASURES

METHODOLOGY

An evaluation of the significance of potential impacts relevant to hazards and hazardous materials must consider both direct effects to the resource and indirect effects in a local or regional context. Potentially significant impacts would generally result in the loss or degradation of public health and safety or conflict with local, state, or federal agency conservation plans, goals, policies, or regulations.

THRESHOLDS FOR DETERMINATION OF SIGNIFICANCE

A project would result in a significant impact related to hazards or hazardous materials if it would do any of the following:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- 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.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- 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, create a significant hazard to the public or the environment.
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area.
- For a project in the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.
- Impairs implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- 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.

PROJECT IMPACTS AND MITIGATION

HAZARDS RELATED TO THE TRANSPORT, USE, OR DISPOSAL OR RELEASE OF HAZARDOUS MATERIALS

Impact 3.8-1 **The project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Impacts would be less than significant.**

Due to the limited quantities of hazardous materials required for use in the construction, operation, and decommissioning of the proposed project, the project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. The quantities and concentrations of hazardous substances are not expected to reach regulated levels.

SHORT-TERM CONSTRUCTION

Project construction activities would involve the use and transportation of hazardous materials such as fuels, asphalt, lubricants, toxic solvents, pesticides, and herbicides. Common nonhazardous wastes anticipated to be used could include common household trash, cardboard, copper wire, scrap metal, paper, glass, plastic from packing material, waste lumber, insulation, concrete, empty nonhazardous containers, and vegetation waste. Recycling will occur with as much of the generated waste as feasible. Construction equipment generally contains limited amounts of hazardous materials such as diesel fuel, hydraulic oil, grease, solvents, adhesives, paints, and other petroleum-based products.

The use, storage, and disposal of hazardous materials and wastes associated with project construction could result in potential adverse health and environmental impacts if these materials were to be used, stored, or disposed of improperly, causing accidents and spills. Incidents of this nature could release hazardous substances into the environment and would cause contamination of soil, surface water, and groundwater, in addition to any toxic fumes that might be generated.

Project construction activities would occur in accordance with all applicable local standards set forth by the County of San Bernardino, as well as state and federal health and safety requirements that are intended to minimize hazardous materials risk to the public, such as California Division of Occupational Safety and Health (Cal/OSHA) requirements, the Hazardous Waste Control Act, the California Accidental Release Protection Program, and the California Health and Safety Code. The construction contractor would be required to implement such regulations relative to the transport, handling, and disposal of any hazardous materials, including the use of standard construction controls and safety procedures that

would avoid or minimize the potential for accidental release of such substances into the environment. Standard construction practices would be observed such that any materials released are appropriately contained and remediated as required by local and state laws. The project is required to prepare a Storm Water Pollution Prevention Plan that includes best management practices designed to prevent chemicals used onsite from coming into contact with any stormwater, thereby preventing chemical transport offsite and into receiving water bodies (refer to Chapter 3.9, Hydrology and Water Quality).

LONG-TERM OPERATIONS

A permanent on-site operation and maintenance (O&M) facility would be required to support the project. It is anticipated that maintenance requirements would be minimal. Small amounts of water would be required for panel washing activities and general maintenance. The need for panel washing would be infrequent (e.g., months to years between washings) and determined based on operating considerations, including actual soiling of the PV panels and any expected benefit from cleaning. Should cleaning be necessary, water would be sprayed on the PV panels to remove dust. An estimated 25 acre-feet per year of water would be necessary for panel washing (for all phases of the project or full 650-MW buildout). This water would be obtained from on-site wells.

Sanitary facilities would be available in the O&M building during project operations. Waste would be properly treated via an on-site septic tank. Other waste from equipment replacement or other work would be removed from the site at the end of the day.

Operations and maintenance vehicles would include light-duty trucks (e.g., pickup, flatbed) and other light equipment for maintenance and module washing. Heavy equipment would not be used during normal operations. Large or heavy equipment may be brought to the facility infrequently for equipment repair or replacement or for vegetation control.

Once the project is operational, hazardous materials associated with the maintenance of the project site and associated landscape would be limited to the use of commercially available cleaning products, landscaping chemicals and fertilizers, and various other commercially available substances. The project would consist of operational solar modules, transformers and battery storage; however, modules made with cadmium telluride and crystalline silicon and batteries do not result in emissions during their normal operations and accidental breakage is unlikely. In addition, all mineral oil filled transformers would be equipped with spill containment areas and battery storage would be in accordance with OSHA requirements such as inclusion of ventilation, acid resistant materials, and spill response supplies. All hazardous materials would be disposed of in accordance with RCRA and State Hazardous Waste Management Program requirements. Although the project would introduce a

renewable energy use, batteries, and substations to the site, resulting in an increased use of commercially available potentially hazardous materials, the use of these substances is subject to all applicable federal, state, and local health and safety laws and regulations that are intended to minimize health risk to the public associated with hazardous materials. These regulations establish a comprehensive regulatory system for handling, using, and transporting hazardous materials in a manner that protects human health and the environment. As such, both accidental and reasonably foreseeable hazardous materials releases would be expected to occur infrequently and result in minimal hazard to the public or to the environment.

Developments of this type do not require the routine transport, use, or disposal of hazardous materials in significant quantities. Generally, the exposure of persons to hazardous materials could occur through improper handling or use of hazardous materials or hazardous wastes during construction or operation, particularly by untrained personnel, or an accident during transport, environmentally unsound disposal methods, or fire, explosion, or other emergencies.

The project site is in proximity to Interstate 40, along which hazardous materials may be transported. The federal Hazardous Materials Regulations address hazardous materials transportation via classification, packaging, hazard communication, emergency response information, and training requirements. The regulations' emergency response requirements include initial emergency actions regarding evacuation isolation of the affected area, firefighting, leaking containers, spill containment, and first aid. These requirements would also reduce the number of persons exposed to any hazardous materials incidents. Furthermore, hazardous materials spills on state highways are the responsibility of Caltrans and the CHP. These agencies provide on-scene management of the spill site and coordinate with the California Department of Public Health, Center for Environmental Health; the California Office of Emergency Services; and applicable local agencies.

DECOMMISSIONING

If operations at the project site were terminated permanently, the facility would be decommissioned. Most parts of the proposed system are recyclable or can be resold for scrap value. Panels typically consist of silicon, glass, and an aluminum frame. Tracking systems (not counting the motors and control systems) typically consist of aluminum, steel, and concrete. All these materials can be recycled.

Fuel, hydraulic fluids, and oils would be transferred directly to a tanker truck from the respective tanks and vessels. Storage tanks/vessels would be rinsed and transferred to trucks per standard best management practices. Other items that are not feasible to remove at the

point of generation, such as smaller containers of lubricants, paints, thinners, solvents, cleaners, batteries, and sealants, would be kept in a locked utility building with integral secondary containment that meets CUPA and RCRA requirements for hazardous waste storage until their removal for proper disposal and recycling. It is anticipated that all oils and batteries would be recycled at an appropriate facility. Site personnel involved in handling these materials would be trained with proper handling techniques.

Containers used to store hazardous materials would be inspected regularly for any signs of failure or leakage. Transportation of the removed hazardous materials would comply with regulations for transporting hazardous materials, including those set by the US Department of Transportation, EPA, DTSC, CHP, and California State Fire Marshal.

Numerous recyclers for the various materials to be used on the project site operate in San Bernardino and Riverside Counties. Metal, scrap equipment, and parts that do not have free-flowing oil can be sent for salvage. Equipment containing any free-flowing oil from equipment would be managed as used oil, which is a hazardous waste in California. Decommissioning would comply with federal, state, and local standards and all regulations that exist when the project is decommissioned. Upon removal of the proposed project components, the site would be returned to conditions generally consistent with the existing (pre-development) conditions, subject to a closure plan in accordance with San Bernardino Development Code Section 84.29.060.

Mitigation Measures: None required.

Level of Significance: Less than significant.

HAZARDS RELATED TO THE UPSET OR RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT

Impact 3.8-2	The project could 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. Impacts would be less than significant with mitigation.
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Based on records review the Sunray Solar Energy project and Barstow-Daggett Airport were identified as containing RECs. Please refer to **Table 3.8-1** for a summary of the RECs identified or see **Appendix H-1** of this EIR for a detailed report of the occurrences at these two sites.

Records indicate that the site where the Sunray Solar Energy is currently located, is listed in some data bases as an inactive facility that contained RECs. The site was designated a Large Quantity Generator (LQG) meaning that the site generated 1,000 kilograms per month or more of hazardous waste or more than one kilogram per month of acutely hazardous waste.

The site was also designated as an Emergency Planning and Community Right-to-Know (EPCRA) site which means the public was granted additional knowledge of the activities conducted at the site due to the public health risk posed by the storage and handling of toxic materials at the facility. This listing, however, is indicative of historical regulatory status of the adjacent property and is not considered a REC for the project site. The Sunray Solar Energy facility is now an active solar project as the site was redeveloped after County review and permitting was completed in 2015. No new occurrences have been reported at the redeveloped site.

The Barstow-Daggett Airport RECs are immediately adjacent to, and south of the project site and include nine USTs; soil contamination from the USTs is likely to exist. Additionally, two waste disposal sites are on the airport property. Based on the RECs identified adjacent to the project site, there is a potential for impacted soils and groundwater to be present at the project site. Mitigation measure **HM-1** outlines additional research and a soil sampling effort to further identify whether any contamination reached the Daggett Solar Facility site and if so avoidance and minimization measures will be implemented.

Project construction for each project phase is expected to consist of two major stages. The first stage would include site preparation, grading (“smoothing” of the site because the project site is relatively flat and no major grading will occur), and preparation of staging areas and on-site access routes. The second stage would involve installation of solar arrays and constructing electrical components, including an aboveground and/or underground gen-tie line and substations. On-site roads would be constructed with a scarified and compacted subgrade. Dust palliative, including water, may be applied to roads to limit dust.

The installation of solar arrays would require driving piles approximately 6 to 10 feet into the ground to support the racking system. Considering the depth to groundwater in the vicinity of the project site, which ranges from 100 to 200 feet below ground surface, and the 6- to 10-foot depths necessary for piles, the proposed project is not expected to encounter groundwater during construction.

Project development has the potential to release hazardous materials associated with the above described RECs into the environment. Therefore, mitigation measure **HM-1** is required to reduce potential impacts associated with potentially hazardous site conditions because mitigation measure **HM-1** requires additional environmental documentation review and on-site soil samplings of the RECs to verify pollution contamination levels prior to issuance of grading permits.

Mitigation Measures:

HM-1 The following actions shall be taken to address the potential RECs associated with the project site.

- Perform a review of relevant environmental documents of the properties associated with the RECs (Barstow-Daggett Airport) to validate the REC conclusion and further evaluate potential contaminants and areas of concern in order to inform locations where shallow soil sampling may be required and any soil disposal requirements prior to issuance of the grading permit for Phase 2.
- Perform shallow soil sampling along the project site boundaries that are immediately adjacent to the Barstow-Daggett Airport in locations determined by the review required above and where grading is planned to screen the soils for elevated contaminant prior to issuance of the grading permit for Phase 2.
- Prior to issuance of a grading permit, prepare a Soil Management Plan to provide background information regarding the project site, highlight areas of concern that the grading contractor should be aware of during grading activities, and define the procedures for addressing suspected contaminated materials or subsurface anomalies that may be encountered during grading activities.

Level of Significance: Less than significant with mitigation.

EMIT HAZARDOUS EMISSIONS NEAR AN EXISTING OR PROPOSED SCHOOL

Impact 3.8-3 **The project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. No impact would occur.**

As previously indicated, the nearest schools in the area are located more than 5 miles from the project site. Therefore, the project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. No impacts would result from the proposed project.

Mitigation Measures: None required.

Level of Significance: No impact.

BE LOCATED ON A HAZARDOUS MATERIALS SITE

Impact 3.8-4 **The project would not 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, it would not create significant hazard to the public or the environment. Impacts would be less than significant.**

One of the objectives from the Phase I ESA was to determine if one or more hazardous materials occur on the project site; refer to the discussion titled Areas of Known Hazardous Contamination – Cortese List, above. These assessments are included as **Appendix H-1** of this EIR. A search of the EnviroStor database did not identify any hazardous material sites on the project site (DTSC 2018b). Similarly, the Phase I ESA determined that the project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Tetra Tech 2018a). A review of the CA HIST CORTESE list, as provided by EDR and dated April 1, 2001, determined that there is one CA HIST CORTESE site within 0.5 miles of the project site and identified as the Coolwater Generating Station at 37072 Santa Fe Road.

Although RECs have been identified as occurring near the project site and mitigation measure **HM-1** is required to mitigate impacts associated with those nearby RECs, no RECs were detected on the project site that would warrant a recommendation of subsequent testing or remediation, and no further action is recommended. Therefore, the proposed project would not create a significant hazard to the public or the environment. Impacts would be less than significant.

Mitigation Measures: None required.

Level of Significance: Less than significant.

SAFETY HAZARD RELATED TO A PUBLIC AIRPORT OR PRIVATE AIRSTRIP

Impact 3.8-5 **The project is located within an airport land use plan and within 2 miles of a public airport or public use airport. The project could result in a safety hazard for people residing or working in the project area, or result in a safety hazard for people residing or working in the vicinity of a private airstrip. Impacts would be less than significant with mitigation.**

GLINT AND GLARE

Due to the nature of the project and the anticipated minimal grading and operation activities necessary, project construction, operations, and decommissioning are not anticipated to create safety hazards for people residing or working near the project site. Additionally, unlike solar thermal facilities, which rely on large fields of mirrors to reflect light, the potential reflection from solar PV modules used on a tracker mounting system is inherently low due to the materials of its construction and its mode of operation. PV cells are designed to capture (rather than reflect) sunlight. However, with Barstow-Daggett Airport located in such proximity, a glare study was conducted to analyze the potential for impacts.

A glint and glare analysis to identify whether the project significantly impacts Airport operations was performed and is included in **Appendix H-3**. Specifically, this analysis considered the impact on aircraft approaching land on Runways 08/26 and 04/22. The study was conducted in accordance with the FAA interim policy for Solar Energy System projects on Federally Obligated Airports.

The results of the study show that there is a “low potential for after image” associated with glare emanating from Array 6 only. This glare may be seen by aircraft making approaches to Runway 22. This level of glare is deemed acceptable by FAA standards per the interim policy for Solar Energy System projects on Federally Obligated Airports. No glare was identified that would have an effect on Runway 08/26 from any of the arrays. Therefore, there would be a less than significant impact on airport operations as a result of glint and glare from the project.

PUBLIC AND PRIVATE AIRPORTS

Barstow-Daggett Airport, a County-owned, public-use, general aviation airport, is directly south of the project site. The project site is not within 2 miles of a private airstrip. The nearest heliport is the SCE Solar Heliport approximately 2.7 miles east of the site. The nearest military airport is the Twentynine Palms Strategic Expeditionary Landing Field, about 65 miles to the southeast.

The Airport Comprehensive Land Use Plan (ACLUP) for Barstow-Daggett Airport was prepared to comply with state planning law and is the primary land use document for the airport (County of San Bernardino 1992 and FAA 2012). The project is being designed in conformance with ACLUP policies and with input received from Airport and Fort Irwin Training Center staff. Additionally, an Obstruction Evaluation and Airspace Analysis was prepared by Capital Airspace Group for the project to identify aviation safety data necessary to be incorporated into the final project design (Tetra Tech 2018b; see Attachment 3 of **Appendix H-3**).

The ACLUP establishes land uses for the area in the vicinity of the airport. The plan area is divided into three Safety Areas, each of which reflects a particular level and type of hazard or risk within its borders. Portions of the project site is located within Safety Area 1 and Safety Area 3, although Safety Area 1 represents a relatively small portion of the overall project site. In general, land uses in Safety Review Area 3 are typically compatible with the airport's activities, while development in Safety Area 1 is more restrictive and prohibitive.

Safety Area 1 is designated as both a runway object-free area (OFA) and a runway protection zone (RPZ). The project portion within Safety Area 1 is located within the RPZ, while no project features are located in the OFA. The intention of the RPZ is to identify and preserve an area off each runway end that has significant potential for aircraft crashes during takeoffs and landings. Therefore, development in the RPZ is either prohibited or restricted based on FAA requirements.

Development, and associated design features, that might create glare, produce misleading lights, or lead to the construction of residences, fuel handling and storage facilities, smoke generating activities, and places of public assembly are prohibited in the RPZ. Furthermore, according to current FAA guidance, solar panels are prohibited within runway protection zones (RPZs). Therefore, impacts are potentially significant.

The applicant will be required to obtain a Determination of No Hazard from the Federal Aviation Administration (FAA) prior to issuance of building and grading permits from the County. Development of the project in the RPZ would be in accordance with guidance for Safety Review Areas, and in consultation with the FAA and Airport Land Use Commission (ALUC). FAA review and issuance of a Determination of No Hazard will require the project applicant would incorporate final design modifications and safety features (e.g., maximum height, clearance requirements) in accordance with the Obstruction Evaluation (Tetra Tech 2018b; see Attachment 3 of **Appendix H-3**). In addition, project facilities including solar panels, fences and transmission line poles within the RPZ or Safety Area 1 would be reviewed by the FAA for compatibility with airport operations. If the FAA finds that development within the Safety Areas does not pose a hazard to airport activities based on height, glare, proximity to runways, and other air navigation safety factors, the FAA may issue a Determination of No Hazard, which gives the applicant approval to proceed with the project as designed. If the FAA finds that the structures within the RPZ do not comply with FAA requirements, the FAA may require project alterations, such as removing solar panels from the RPZ or undergrounding utilities, before a Determination of No Hazard is granted to the applicant. Potential impacts to airport operations and public safety would be minimized to a less than significant level with implementation of mitigation measure **HM-2** by requiring the applicant

to provide the County with a Determination of No Hazard from the FAA prior to issuance of building or grading permits.

Mitigation Measures:

HM-2 Prior to issuance of building and grading permits, the Applicant shall provide to the County a Determination of No Hazard issued by the Federal Aviation Administration (FAA).

Level of Significance: Less than significant with mitigation.

INTERFERE WITH AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN

Impact 3.8-6 The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

Project access would include a 26-foot-wide entrance. All interior access roads would be a minimum of 20 feet in width. All roads within the site would consist of compacted native soil according to San Bernardino County Fire Department requirements. Roads would be stabilized with a soil stabilization material, if necessary. Activities associated with the project would not impede the free movement of emergency response vehicles. Construction vehicles would access the project site from I-40 and I-15. During construction, materials would be placed within the project boundaries adjacent to the current phase of construction in order to avoid any access conflicts in case of emergency evacuations.

The County's Multi-Jurisdictional Hazard Mitigation Plan includes measures to reduce future hazards and better respond during emergency evacuations. The plan states that improvements in Daggett and at Barstow-Daggett Airport are anticipated and the project would not interfere with the County's ability to complete the anticipated improvements in the project vicinity, which are as follows:

- The County is in the process of locally funding construction of a new road, Daggett Road, at Daggett Ditch Bridge.
- The Capital Improvement Program includes funding for the construction of a new fire station for the Ludlow/Amboy area and—pending FAA approval—for airfield improvements and the Taxiway B extension at Barstow-Daggett Airport, which features significant military activity and supports the Fort Irwin National Training Center (County of San Bernardino 2011).

In addition, the County's Emergency Operations Plan (EOP) identifies the County Sheriff's Department (including transit agencies and Animal Control) as the main personnel supporting the safe evacuation of persons, domestic animals, and livestock from hazardous areas in case of emergencies (County of San Bernardino 2013). The project would not interfere with the Sheriff's ability to safely evacuate the area in the event of an emergency.

The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

Mitigation Measures: None required.

Level of Significance: Less than significant.

WILDLAND FIRES

Impact 3.8-7 **The project would not 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. Impacts would be less than significant.**

Any new development in previously undeveloped areas generally increases the potential for occurrence of wildfires. The proposed project would introduce battery storage and other facilities that have the potential to increase fire hazards, as detailed below.

BATTERY STORAGE

The project is anticipated to include up to 450 MW of battery storage to be constructed in three phases corresponding to the phased construction of the solar arrays. The battery storage system is expected to be located either adjacent to each of the substations or distributed throughout the solar array at the inverter equipment pads or tracker rows. Up to 16 acres of battery storage would be located throughout the project site.

If batteries were located adjacent to the substations, they would be contained either within steel enclosures similar to a shipping container or in a freestanding building. If distributed throughout the solar array, the battery system would likely be contained within metal housings and electrically connected to the inverters at each of the equipment pads. However, the locations may be changed to optimize overall facility design. The battery storage system would likely use one of several available lithium ion technologies, though alternatives may be considered (such as flow batteries) given continuing rapid technological change in the battery industry.

The proposed battery storage system would be designed, constructed, operated, and maintained in accordance with applicable industry best practices and regulatory requirements, including fire safety standards. Current best practices for fire safety, as of the preparation of this EIR, use chemical agent suppressant-based systems to detect and suppress fires. If smoke or heat were detected, or if the system were manually triggered, an alarm would sound, horn-strobes would flash, and the system would release suppressant, typically FM-200, NOVEC 1230, or similar, from pressurized storage cylinders. However, final fire safety design would follow applicable standards and would be specific to the battery technology chosen.

The major components of the battery system include the inverter, cells, modules, enclosure, and safety system. The inverter converts the direct current (DC) electricity produced by the solar system into alternating current (AC) electricity that can safely be transferred into the electrical grid. The inverter contains no liquids or chemicals. The battery cell and modules for the proposed project would utilize lithium ion technology which would be housed in an enclosure that contains integrated fire suppression and controls.

The configuration of the safety system would be determined based on site-specific environmental factors and associated fire response strategy. The safety system would include a fire detection and suppression control system that would be triggered automatically when the system senses imminent fire danger. A fire suppression control system would be provided within each on-site battery enclosure. Components of the system would include a fire panel, aspirating hazard detection system, smoke/heat detectors, strobes/sirens, and suppression tanks. The safety system would operate in three phases: Pre-alarm, Stage 1, and Stage 2. If the safety system detects a potential issue, the Pre-alarm phase would be initiated and would shut down the heating, ventilation and air conditioning (HVAC) units and fans to help contain the potential fire. The control system would then wait approximately 5 minutes to determine if the initiation of Stage 1, which would shut down the HVAC and fans indefinitely, is warranted. If reached, Stage 2 would then result in the fire panel discharging the suppression agent onto the fire. The safety system would either use a waterless evaporating fluid, sustainable clean agent (not a hydrofluorocarbon clean agent), or an alternative suppression agent, such as an inert gas.

OTHER INFRASTRUCTURE

An O&M building would be constructed on approximately 1.5 acres within the project footprint during the first phase of the project. The O&M building would serve to store spare parts and vehicles and to accommodate full- and part-time staff associated with the project. Telecommunications equipment, such as fiber-optic line, a SCADA (supervisory control and

data acquisition) system, and auxiliary power, would be installed throughout the project site at each inverter equipment pad, substation, and security system. Fire protection would also be included according to applicable requirements.

COUNTY HAZARD OVERLAY MAP

While the project would be designed in such a way as to minimize impacts to potential habitat and associated vegetation, large portions of the project site have been previously disturbed with agricultural uses and the project will comply with Fire Department vegetation clearance requirements. Project vehicles will travel on roads that have been cleared of vegetation. As such, vegetation-related fires would be unlikely to occur on the site.

Additionally, according to the County's Hazard Overlay mapping (sheet EI10B), the project site is not in a Fire Safety Overlay District. In addition, the project design would be required to conform to conditions established by the County Fire Department to ensure potential hazards relative to exposure of people or structures to significant risk of loss, injury, or death involving wildland fires would be reduced to the extent feasible.

Comprehensive safety measures that comply with federal, state, and local worker safety and fire protection codes and regulations would be implemented for the proposed project and would minimize the occurrences of fire due to project activities during construction and for the life of the project. Coupled with the implementation of fire suppression technology and adherence with applicable industry best practices and regulatory fire standards, impacts would be less than significant.

Mitigation Measures: None required.

Level of Significance: Less than significant.

CUMULATIVE IMPACTS

Impact 3.8-8 The project would not result in cumulative impacts related to hazards and hazardous materials. Impacts would be less than significant.

Similar to other potential impacts, such as those related to geology and soils, risks related to hazards and hazardous materials are typically localized in nature because they tend to be related to on-site existing hazardous conditions and/or hazards caused by the project's construction or operation. The geographic scope when considering cumulative impacts from hazards and hazardous materials includes renewable energy and other projects in the County's Desert Region Planning Area and specific projects are listed in **Table 3.0-1, Cumulative Projects**, in Section 3.0 of this EIR lists the projects considered for this cumulative

impact analysis. Out of the nineteen projects considered, fifteen of which are solar projects, there are three projects located within ten miles of the proposed project: Minneola Solar, Silver Valley, and Ned Araujo.

As with the proposed project, these cumulative projects would also be required to avoid and/or mitigate impacts due to hazards and hazardous materials. The proposed project and other solar projects involve the storage, use, disposal, and transport of hazardous materials to varying degrees during construction, operation, and decommission activities. Impacts from these activities are anticipated to be less than significant, because similar solar projects would also comply with federal, state, and local regulations and policies. Compliance with these regulation and policies would involve measures such as secondary containment of hazardous waste and proper disposal to minimize spills and leaks. Additionally, these projects will implement safety measures and precautions necessary to minimize any potential disturbance of hazardous materials and prevent the creation of additional hazards that cannot be mitigated or contained properly. Implementation of mitigation measure **HM-1**, or a similar project specific mitigation measure, prior to project construction would minimize the potential for soil contamination from the accidental release of hazardous materials. Lastly, other solar project's storage facilities would also be equipped with secondary containment and fire suppressant technology to lessen the impacts of potential battery fires.

Therefore, in combination with other reasonably foreseeable development projects in the County's desert region, the proposed project would not result in a considerable contribution to a significant cumulative impact.

Mitigation Measures: None required.

Level of Significance: Less than significant.