# IV.22 PUBLIC HEALTH, SAFETY, AND SERVICES

This chapter analyzes impacts on public health, safety, and services as they relate to implementation of the Desert Renewable Energy Conservation Plan (DRECP) Bureau of Land Management (BLM) Land Use Plan Amendment (LUPA) alternatives. Impacts are determined under the National Environmental Policy Act, which mandates an analysis of hazardous materials and wastes, occupational health and safety, public safety and services, and safety related to natural, sabotage, or terrorism events. This chapter also addresses public services as they relate to fire and police protection.

## IV.22.1 Approach to Impact Analysis

This analysis discusses typical impacts on public health, safety, and services associated with renewable energy facilities (i.e., solar, wind, and geothermal) and their required transmission infrastructure within the LUPA Decision Area. Impacts are analyzed in general terms because most issues concerning public health, safety, and services are similar across all renewable technologies and the LUPA Decision Area geography. However, there are some differences in impacts among the renewable energy technologies covered in the Proposed LUPA alternatives. These include the following:

- Hazardous material use tends to be greater in solar energy facilities.
- Wind development can increase fire risk.
- Greater dispersal of development, along with more acres of development, can increase the interface of wildland and development and increase fire risk.
- Airports near Development Focus Areas (DFAs) can potentially increase airport safety risk.

## IV.22.2 Typical Impacts Common to All Action Alternatives

Proposed LUPA alternatives would generate future renewable energy development applications within identified DFAs. Impacts would vary depending on the technology proposed, location within the LUPA Decision Area, the time and degree of disturbance resulting from development, and the size and complexity of the facilities. Short-term impacts occur for only a short time during and after the proposed actions (e.g., construction noise during development). Long-term impacts occur for an extended period after development or construction of the proposed actions is complete. All ground disturbances are considered to be long-term impacts.

BLM is responsible for public services and safety on BLM lands, and would continue these responsibilities for future renewable energy development, as follows:

- BLM is responsible for hazardous materials and safety issues on BLM land. BLM has its Hazard Management and Resource Restoration Program, commonly known as Hazardous Materials Management. Any development on BLM land will be subject to this program in addition to the federal and state regulations described in Section III.22.1.
- BLM considers renewable energy development and transmission in its emergency planning.
- BLM provides law enforcement services to renewable energy and transmission facilities and conservation areas through enforcement rangers and special agents.
- BLM provides fire protection services and oversees wildland fire management through its fire management programs.

## IV.22.2.1 Impacts of Renewable Energy and Transmission Development

Renewable energy and transmission development could create impacts related to hazardous materials, airport safety hazards, emergency plans, wildland fire hazards, public services, and public safety during site characterization, construction, operation, maintenance, and decommissioning activities.

### *IV.22.2.1.1 Impacts of Site Characterization*

As detailed in Volume II, Chapter II.3, Section II.3.3.1, Description of Renewable Energy Technologies, site characterization activities may include the use or construction of access roads, meteorological stations, site reconnaissance, and geotechnical borings. The typical impacts of these activities are described below.

#### Hazardous Materials

The construction of access roads or meteorological stations could introduce limited hazardous materials into a site or disturb existing hazardous materials. Geotechnical study borings could also disturb existing hazardous materials. These activities, as well as site reconnaissance activities, could introduce people into a site where hazardous materials are present.

#### Airport Safety Hazards

The nature and limited activity associated with site characterization activities would not create airport safety issues.

### Wildland Fire Hazards

Site characterization activities such as clearing vegetation with a line trimmer or other equipment, building access roads, and operating vehicles and equipment within areas of dry vegetation could increase wildland fire hazard risks.

### Public Services

Site characterization activities would not affect emergency plans. The limited number of individuals in one area would not affect evacuation routes or the emergency system in general. The activities associated with site characterization would neither increase demand for police or fire services nor affect existing or planned public services.

### Public Health and Safety

Geotechnical study borings and construction of access roads or meteorological stations could disturb soils containing valley fever fungal spores. Dust control measures and worker safety precautions would help limit exposure.

## *IV.22.2.1.2 Impacts of Construction and Decommissioning*

### Hazardous Materials

For purposes of this discussion, hazardous materials are defined as those chemicals listed in the Environmental Protection Agency Consolidated List of Chemicals Subject to Reporting, under Title III of the Superfund Amendments and Reauthorization Act of 1986. Extremely hazardous materials are defined by federal regulation (40 Code of Federal Regulations Part 355). Some construction and decommissioning-related waste may qualify as characteristic hazardous waste or federal- or state-listed hazardous waste. Also, hazardous materials, including unexploded ordnance, may be present on sites from previous military or mining activities.

Construction and decommissioning of renewable energy facilities would include the use of hazardous materials, including:

- Various fluids from on-site maintenance of construction vehicles and equipment (e.g., gasoline, diesel fuel, lubricating oils, hydraulic fluids, glycol-based coolants, and spent lead-acid storage batteries).
- Incidental chemical wastes from the maintenance of equipment and the application of corrosion-control protective coatings (e.g., solvents, paints, and coatings).
- Construction-related debris (e.g., dimension lumber, stone, and brick).

- Dunnage and packaging materials (primarily wood and paper).

**Solar.** In addition to the typical wastes mentioned here, construction and decommissioning of certain types of solar facilities may involve spent heat transfer fluids (HTF), dielectric fluids, thermal energy storage (TES) salts, and steam amendment chemicals. Much of this volume of waste has recycling options, but subsequent flushing (with water or appropriate organic solvents) and cleaning of the systems generate wastes that require disposal. The HTFs most commonly used are Therminol and Dowtherm. Therminol is an ethylated benzene compound with relatively low volatility at ambient temperatures. It has a low oral and inhalation toxicity (Solutia Inc. 2006), but is irritating to the skin. Dowtherm is primarily ethylene glycol, a common antifreeze. It also has a low volatility at ambient temperatures, low inhalation toxicity, and moderate oral toxicity; brief skin contact is nonirritating (Dow Chemical Inc. 2004).

HTFs are stored in tanks or circulated through the solar field in pipes, so the potential for exposure is low when workers follow applicable handling instructions. Impacts during facility dismantlement and draining could include spills, leaks, and releases to the environment from improper temporary on-site storage of recovered fluids.

Cadmium telluride (CdTe) may be present in photovoltaic solar panels used for solar energy projects. CdTe is considered toxic if ingested or inhaled via dust particles. Human exposure of CdTe would occur only if a module, sealed in glass, generated flake or dust particles. The potential for CdTe release could only occur from severe pitting of the panel surface. In addition, some high-performance solar photovoltaic cells contain small amounts of selenium and arsenic, which could be emitted if solar cells were broken during construction or decommissioning. For photovoltaic facilities using high-performance solar cells, special handling of solar panels containing toxic metals would be required to prevent accidental breakage that would also preclude recycling of the solar cell materials at off-site facilities.

**Wind.** Construction and decommissioning of wind facilities would generate both solid and industrial wastes. Fluids used and drained from turbine drivetrain components (e.g., lubricating oils, hydraulic fluids, coolants) require disposal. Tower segments, turbine components (emptied of their fluids), and broken concrete would not pose a hazardous materials risk and could be recycled or reused. Electrical transformers can be removed from the site and used elsewhere (in most cases, without the need to remove dielectric fluids such as transformer oil). Miscellaneous materials without salvage value are expected to be nonhazardous and would be sent to permitted disposal facilities.

**Geothermal.** The use, storage, and disposal of hazardous materials and waste associated with geothermal energy development could expose individuals to petroleum, oil, lubricants, paints, solvents, and herbicides.

### Airport Safety Hazards

Solar power towers, which may exceed 500 feet in height, and electric transmission lines, with heights up to about 150 feet, could pose hazards to low-flying aircraft. The installation of these facilities would need to consider civil and military aeronautical operations to avoid runway approach patterns, low-altitude flight corridors, and military exercise areas. The potential for electrical interference of transmission lines or solar array control systems with aircraft operations is remote, but would still be evaluated for new installations. Interactions with low-altitude aircraft avionics or communications could occur if corona discharges from the transmission lines are not minimized to avoid specific electric frequencies.

Glare from solar energy facilities (i.e., the sun's reflection off mirrors or photovoltaic, panels) could interfere with pilot vision as was reported in 2013 by two flight crews in the vicinity of the Ivanpah solar facility. In the case of heavily traveled air routes (e.g., airport approach routes), solar array patterns may be adjusted to minimize interference.

The Federal Aviation Administration (FAA) requires a notice of proposed construction for a project in order to determine whether it would adversely affect commercial, military, or personal air navigation safety (FAA 2000 as cited in BLM 2005). One of the triggering criteria is whether the project would be located within 20,000 feet of an existing public or military airport. Another FAA criterion triggering this notice of proposed construction is construction or alteration of any structure higher than 200 feet. This criterion applies regardless of a project's distance from an airport (FAA 2000 as cited in BLM 2005). Because a wind or solar energy development project would have to meet appropriate FAA criteria, no adverse impacts on aviation would be expected.

### Wildland Fire Hazards

Construction equipment and flammable materials, combined with adding people in remote areas with vegetation, could increase wildland fire hazards. Much of the LUPA Decision Area experiences high winds and dry conditions, so the risk is high for rapidly spreading fire.

### Public Services

Construction and decommissioning activities would not interfere with either evacuation routes or general emergency systems, or affect emergency plans. Project security personnel, security lighting, and facility fencing would all limit vandalism calls to local

police and fire departments. However, given the large number of construction personnel required at renewable energy facilities, accidents are likely to happen, so there would be a need for emergency medical services. Construction traffic can also dramatically increase baseline traffic levels on local roadways, which in turn can also increase the need for police or highway patrol and emergency response to traffic accidents. There could therefore be a need for short-term expansion of BLM law enforcement staff, County sheriff, or emergency response services, but not for additional law enforcement stations.

### Public Health and Safety

Renewable energy construction and decommissioning could produce occupational hazards, health concerns, and general public safety concerns. Occupational health and safety considerations related to constructing and decommissioning energy development projects include the following:

- Physical hazards
- Risks of injuries and fatalities to workers during the construction of facilities and their associated transmission lines
- Risks resulting from exposure to weather extremes (e.g., heat stress or stroke, frostbite)
- Risk of harmful interactions with plants, animals, and soil-based pathogens, especially valley fever (*Coccidioidomycosis*)
- Risks associated with working at extreme heights
- Fire hazards
- Exposure to hazardous substances used at or emitted from the facilities, including *Legionella* bacteria, as well as diesel particulate matter emitted from construction vehicles
- Risk of electrical shock

**Valley Fever.** The fungus that causes valley fever is present in soils within the LUPA Decision Area, particularly in the West Mojave area. Disturbance of these soils during construction and decommissioning could release dust contaminated with valley fever spores that could be inhaled by workers and others in the area, resulting in illness or, in severe cases, death.

Construction and decommissioning pose the general risk of wildfires and vehicle accidents. Some of the occupational hazards associated with construction of renewable energy projects are similar to those associated with heavy construction in the electric power industry, while others are unique to the type of project (e.g., working at extreme heights,

working in areas of high wind, and working near rotating or spinning equipment). In particular, the hazards of installing and repairing turbines are similar to those of building and maintaining bridges and other tall structures (Sørensen 1995, as cited in BLM 2005). Gipe (1995, as cited in BLM 2005) and Sørenson report multiple fatalities and serious injuries in wind energy project construction. Solar power tower construction may result in similar occupational hazards. Geothermal exploration and drilling could expose individuals to: (1) drilling mud and geothermal fluid or steam during drilling; (2) hydrogen sulfide contained in geothermal fluids or steam; (3) hazardous materials such as petroleum, oils, and lubricants; and (4) a variety of potential accidents inherent in drilling operations.

### *IV.22.2.1.3 Impacts of Operation and Maintenance*

#### Hazardous Materials

The operation and maintenance of renewable energy projects would involve the use of hazardous materials similar to those required during construction and decommissioning (see Section IV.22.2.1.2). In addition to the technology-specific impacts described here, the maintenance of transmission lines and substations could result in electric shocks and falls. Operation and maintenance activities could also cause electrical fires, wildfires, and vehicular accidents from increased traffic on local roads.

**Solar.** Wastes common to all solar technologies include domestic solid wastes and sanitary wastewaters from workforce support and industrial solid and liquid wastes from routine cleaning and equipment maintenance and repair. Volumes of domestic solid wastes and sanitary wastewaters would be limited given the relatively small size of the operating workforce. Various options would be available for the management and disposal of domestic solid and sanitary waste. In all instances, solid wastes can accumulate on site for short periods until they are delivered to permitted off-site disposal facilities, typically by commercial waste disposal services. Options for sanitary wastewaters range from on-site disposal in septic systems, when circumstances allow, to off-site treatment and disposal in publicly owned treatment works. Some industrial wastes (e.g., spent cleaning solvents) may be hazardous, but well-established procedures exist for their management, disposal, and recycling. Wastes from herbicide applications could include empty containers and possibly some herbicide rinsing solutions.

Risks from public exposure to hazardous substances through air emissions from solar facilities are generally low because the few substances stored and used at the facilities in large quantities have low volatility and inhalation toxicity. Small quantities of combustion-related hazardous substances may be emitted from steam boilers using natural gas as an energy source at certain times.

Potential worker exposure to hazardous materials, wastes, and contamination could result from spills or leaks of hazardous materials, improper waste management techniques, or from the use of herbicides to manage vegetation and control weed growth. Solar parabolic troughs could use substantial quantities of HTFs in pipes throughout the solar field and in connections between the solar field and the power block facility. Although these materials would likely remain in their respective systems throughout the facility's operating life, contamination could result from spills or leaks in the HTF system.

Parabolic trough and power tower facilities would use hazardous chemicals to treat water used in the steam cycle, and the handling and transfer of these chemicals could cause spills or leaks. The maintenance of steam systems and wet-cooling systems would produce blowdown wastes, some of which would be generated in high volumes (e.g., lubricating oils, compressor oils, and hydraulic fluids); however, recycling options are likely to be available. Other wastes may need to be managed as hazardous wastes. Cooling towers could also provide an environment for the growth of the *Legionella* bacteria, which causes Legionnaires' disease.

Currently molten salt (a mixture of sodium nitrate and potassium nitrate) is used as a TES medium in solar power plant facilities, although other substances are being investigated. Nitrate salts, which are used at extremely high temperatures, are highly reactive oxidizers that can accelerate and exacerbate fires and may react with reducing agents to cause fires. These substances can cause severe irritation through inhalation, ingestion, or dermal contact (LabChem 2009 and 2013).

The presence of highly reflective surfaces at parabolic trough plants could increase exposures to reflected sunlight of damaging intensity. Although the mirrors are relatively inaccessible to the general public, there is some potential for individuals to view intense reflected light from a project's fence line, depending on the distance. The highest risk of such exposures would occur when mirrors are being rotated from stowed to tracking position (Ho et al. 2009). There is also some risk of exposure to intense reflected light from power tower heliostats, again particularly when they are moved from stowed to tracking position or vice versa. An additional consideration is exposure to light reflected from the tower receiver. Although the height of the towers may reduce the risk of retinal damage at ground level, pilots have reported impacts.

Photovoltaic solar facilities do not require potentially hazardous liquids and gases during operations; however, photovoltaic panels do contain potentially hazardous metals in solid form. These metals are contained within the panels, but could be released to the environment on a small scale if one or several panels were broken, or on a larger scale if the solar field caught fire. Solar panels for utility-scale facilities in the United States typically use nonhazardous, silicon-based semiconductor material; however,

semiconductors containing cadmium, copper, gallium, indium, and/or arsenic compounds, could be used as well. Of these, cadmium has the highest potential for use in utility-scale systems, and it has high toxicity. Substantial quantities of cadmium or other semiconductor metals may be present at utility-scale photovoltaic facilities. The release of cadmium and other heavy metals from broken modules or during fires would result in a negligible potential for human exposures (Electric Power Research Institute and Public Interest Energy Research 2003; Fthenakis and Zweible 2003).

**Wind.** Some of the occupational hazards associated with the construction of wind energy projects are similar to those of the heavy construction and electric power industries, while others are unique to wind energy projects (e.g., working at extreme heights, high winds, working near rotating or spinning equipment). In particular, the hazards of installing and repairing turbines are similar to those of building and maintaining bridges and other tall structures (Sørensen 1995). Gipe (1995) and Sørenson report multiple fatalities and serious injuries from construction of wind energy projects.

The variety and amount of hazardous materials present during operation and maintenance of a wind facility would be minimal. Types of hazardous materials that may be used include those previously discussed for construction and decommissioning. Operation of wind facilities would generate small amounts of transmission and lubricating fluids requiring disposal. Solvents and cleaning agents used to maintain facilities would require disposal. The operation of wind facilities could potentially result in "shadow flicker," due to alternating changes in light intensity that occur when rotating blades cast moving shadows. Additionally, the vibration and noise of rotating blades may cause illness in certain individuals. Dr. Nina Pierpont has called this Wind Turbine Syndrome (2009); however, more research is needed to determine whether there is a cause-and-effect relationship.

**Geothermal.** Potential health and safety impacts during operations could include exposure to geothermal fluid or steam during system failures, maintenance activities, or well blowouts. Additionally, exposure to hydrogen sulfide contained in steam emissions could occur. Similar to wind and solar, the use hazardous materials such as petroleum, oils, lubricants, paints, solvents, and herbicides could result in exposure. Cooling tower operations could also result in the growth of *Legionella* bacteria.

### Airport Safety Hazards

Airports within the LUPA Decision Area and within 20 miles of the Proposed LUPA boundaries are shown in Volume III, Figure III.22-2. Though extremely bright receivers on top of solar power towers could pose a distraction hazard to aircraft pilots, the risk of retinal damage to plane occupants would be low. Steam from solar thermal and geothermal operations could interfere with pilot and air traffic controller visibility if a facility is located

next to an airport. Tall stacks, towers, and turbines could interfere with airplane takeoff and landing. High-velocity plumes emitted from solar thermal facilities using air-cooled condensers could affect low-flying aircraft. Potential effects on military operations are addressed in Chapter IV.24, Department of Defense Lands and Operations. Electromagnetic transmissions can occur when a large wind turbine is placed between a radio, television, or microwave transmitter and receiver (Manwell et al. 2002). Disruptions of public safety communication systems (e.g., radio traffic related to emergency response activities) may be a public safety concern.

### Wildland Fire Hazards

Operation of renewable energy facilities and their associated vegetation clearing activities could potentially cause fires. The high density of solar panels and the lack of space in the solar fields make fires in solar fields difficult to extinguish. Fires in solar fields also pose a potential health risk from inhalation of burning CdTe, gallium arsenide, phosphorus, and battery acid.

Wind turbines can catch fire from excessive braking system friction, lightning strikes, electrical malfunctions, and flammable components. Fires at the top of the turbines are difficult to extinguish since fire truck ladders are too short to reach them. This can cause fires to spread to adjacent areas.

Transmission line operations can also cause wildfires due to conductors fallen in storms or because of arcing (or creating sparks). Proper maintenance can reduce the likelihood of these events. High-voltage transmission lines can also inhibit firefighting activities since firefighters cannot work near energized transmission lines.

### Public Services

Renewable energy facility operations would not alter major access points or existing evacuation routes.

Operation of new renewable energy facilities would result in additional law enforcement and fire service calls; impacts on BLM staff and other responding agencies or organizations would therefore occur. Renewable facilities in remote locations could require the expansion of existing police or fire facilities to serve these locations in reasonable response times.

### Public Health and Safety

Unauthorized or illegal access by the public trying to climb towers or open electrical panels could lead to injuries. Dry vegetation and high winds may also create a fire hazard around

facilities. Natural events such as tornadoes, earthquakes, severe storms, and fires could cause injuries, loss of life, and the release of hazardous materials. HTFs used at solar facilities could pose an inhalation hazard in the case of fire. The risk of injury from wind turbine blade breakage as a result of rotor overspeed or material failure is low (Hau 2000).

Although there is the potential for intentional destructive acts that could affect human health and the environment, it is not possible to estimate the probability of sabotage, terrorism, or their impacts, so this issue is not further discussed.

Federal and state regulations define project developers' responsibilities for protecting critical infrastructure. They include prescribed actions and system performance requirements designed to protect the public and the environment from the adverse consequences of disruptions or failures, and to provide for system reliability and resiliency. Some protective measures and activities are obvious (e.g., fencing around electric substations and switchyards, routine surveillance and inspections), while others must remain confidential to maintain their effectiveness.

### IV.22.2.2 Impacts of the Ecological and Cultural Conservation and Recreation Designations

The Proposed LUPA does not include measures directly relating to public health, safety, and services. Because the Proposed LUPA land designations would be managed to protect ecological, historic, cultural, scenic, scientific, and recreation resources and values, development may be restricted or limited. This could affect the pattern of development, which may indirectly affect public services, wildland fire hazards, and emergency plans. For example, development may be scattered to avoid historic resources, sited in remote areas to avoid visual impacts and recreational resources, or focused in less remote areas to protect biological resource corridors and habitats. Contiguous development in more easily accessible areas would generally be beneficial for public services, wildland fire hazards, and emergency plans. Thus, the proposed BLM land designations and management actions could have an adverse or beneficial impact on public services, wildland fire hazards, and emergency plan issues.

Details on allowable uses and management within National Conservation Lands are presented in the Proposed LUPA description in Volume II. Details on the goals, objectives, allowable uses, and management actions for each Area of Critical Environmental Concern and Special Recreation Management Area are presented in the Proposed LUPA worksheets in Appendix H.

# IV.22.3 Impact Analysis by Alternative

The following sections present impact analyses for the No Action Alternative, the Preferred Alternative, and Alternatives 1 through 4.

## IV.22.3.1 No Action Alternative

Under the No Action Alternative, the analysis of public health, safety, and services is based on foreseeable impacts associated with renewable energy development under current regulatory conditions. Renewable energy development would be authorized on a project-by-project basis. Under the No Action Alternative, solar energy development is far greater than any other technology (approximately 14,000 megawatts [MW], compared with 6,000 MW of wind and 300 MW of geothermal). An estimate of the potential development for each renewable energy technology under the No Action Alternative can be correlated to the estimate of permanent ground conversion impacts from projected renewable energy projects, as presented in Tables II.2-7 and II.2-8 (Volume II).

Under the No Action Alternative, the state's renewable energy goals would still be achieved absent the Proposed LUPA. Renewable energy and transmission development, and mitigation for projects in the LUPA Decision Area, would occur on a project-by-project basis in a pattern consistent with past and ongoing renewable energy and transmission projects, and would continue to be dispersed throughout the LUPA Decision Area.

Under the No Action Alternative, renewable energy projects would occur within the available development areas shown in Figure II.2-1.

### *IV.22.3.1.1 Impacts of Renewable Energy and Transmission Development – No Action Alternative*

This section presents the impacts that would occur from renewable energy and transmission development under the No Action Alternative.

***Impact PS-1: Plan components would involve hazardous materials or conditions that could result in a hazard to the public or environment.***

As discussed in Section IV.22.2, all phases of renewable energy development would involve the transport, use, storage, and disposal of hazardous materials, as well as, to a limited extent, the operation of transmission lines. Hazardous materials include fuels, lubricating oils, hydraulic fluids, glycol-based coolants, lead-acid batteries, solvents, paints, cleaning agents, coatings, and herbicides. In addition to the typical wastes mentioned here, the development of solar facilities could involve the use of HTF, dielectric fluids, TES salts (sodium and potassium nitrates), and steam amendment chemicals.

In addition to the hazardous materials introduced into the site by renewable energy facilities and transmission components, sites may have existing contamination that could pose a risk to workers and the environment during site characterization, construction, operations, and decommissioning. Refer to Section IV.22.2.1, and Volume III, Chapter IV.22, Table III.22-1.

Solar facility development would pose a greater risk for hazardous materials impacts due to the larger quantity and number of hazardous materials compared with wind or geothermal facilities. The risk would be greatest within the Cadiz Valley and Chocolate Mountains ecoregion subarea, which would have the largest amount of solar development in the No Action Alternative.

Construction, operation, and decommission activities would involve movement of soil materials. If soil containing the valley fever fungus is disturbed by construction, natural disasters, or wind, the fungal spores can be released into the air and spread. Cooling water associated with solar thermal and geothermal facilities may become contaminated with bacterial growth and potentially contain *Legionella* bacteria. In addition, operation of diesel-fueled equipment during construction, operation, and decommissioning activities would result in diesel particulate matter emissions.

Construction and operation of renewable energy facilities could lead to hazardous materials impacts from improper handling of existing hazardous waste conditions or improper transport, use, storage, and disposal of hazardous materials. Potential hazardous material impacts that could occur under the No Action Alternative include increased fire risk, human health impacts, and environmental contamination, which could lead to environmental impacts on biological resources, surface water, groundwater, air quality, agriculture, grazing, and recreation.

***Impact PS-2: Plan components could result in an airport or air traffic safety hazard.***

Airport safety hazards for the No Action Alternative would be similar to the typical impacts described in Section IV.22.2. Airport safety issues include the operation of tall structures such as solar power towers and cooling towers for geothermal and solar thermal, and turbines for wind facilities. Solar panels and mirrors could produce glare, and solar thermal and geothermal facilities could produce steam and high-velocity plumes that might interfere with aircraft safety. Airport safety hazard impacts are greatest where facilities would be within 2 miles of an airport or within an airport influence area as designated in a county's Airport Land Use Compatibility Plan.

### *Impact PS-3: Plan components would create an increased risk of wildland fire.*

The No Action Alternative would allow renewable energy development to occur anywhere on BLM-managed desert land not protected by either legislation or other legal measures. Construction activities and expanded areas of development would increase the interface of wildlands and development. In addition, certain conditions increase the potential for spreading wildland fires, including clearing vegetation; the difficulty of extinguishing fires in solar panel fields and at the tops of wind turbines; wind turbine fire risks; hazardous materials fire risks; transmission line operations; and the introduction of people, equipment, and vehicles into remote areas.

### *Impact PS-4: Plan components would create a demand for new or expanded police, fire, and emergency service facilities.*

The large area of development under the No Action Alternative would mean a greater likelihood of renewable energy project development farther from BLM law enforcement personnel, County Sheriffs, and fire stations. Additional police and fire service facilities or support may be needed.

### *Design Features of the Solar PEIS*

Under the No Action Alternative, the Solar Programmatic EIS (PEIS) Design Features and other existing land use plan requirements would apply. The following summarized Solar PEIS Design Features apply to all BLM-managed Solar Energy Zone lands:

- **HMW1-1:** Conduct site characterization, construction, operation, and decommissioning in compliance with applicable federal and state regulations; develop a Hazardous Materials and Waste Management Plan that addresses the selection, transport, storage, and use of all hazardous materials.
- **HMW2-1:** Minimize hazardous materials and waste management design elements; provide reports of reportable releases or spills; implement "just in time" ordering procedures; survey project sites for unexploded ordnance; designate hazardous waste storage areas and facilities.
- **HMW3-1:** Comply with terms and conditions for hazardous materials and waste management; install sensors to monitor system integrity; implement robust site inspection and repair procedures.
- **HMW4-1:** Maintain emergency response capabilities throughout the reclamation and decommissioning periods.
- **HMW4-2:** Apply design features used in construction during reclamation and decommissioning.

- **MCA1-1:** Coordinate with BLM, military personnel, and civilian airspace managers early in the project planning process to identify and minimize impacts on airport and airspace use; comply with FAA regulations and Airport Land Use Compatibility Plans; consult with the Department of Defense to minimize or eliminate impacts on military operations.
- **WF-1-1:** Coordinate with BLM and other appropriate fire organizations to determine fire risk and methods to minimize risk; incorporate fire management measures in worker training; incorporate inspection and monitoring measures.
- **WF-2-1:** Site and design facilities to minimize fire risk; provide sufficient room for fire management; integrate vegetation management to minimize wildland fire risk
- **ER-1:** Develop measures to minimize the potential for a human or facility-caused fire to affect ecological resources.
- **WR2-1:** Develop measures to avoid, minimize, and mitigate impacts on surface and groundwater resources from hazardous spills, runoff, sediment buildup, and pesticides or fertilizers.
- **HS1-1:** Implement training and awareness measures for workers and the general public to minimize and address standard practices for the safe use of explosives and blasting agents and for fire safety and evacuation procedures.

#### *IV.22.3.1.2 Impacts of Ecological and Cultural Conservation and Recreation Designations – No Action Alternative*

Under the No Action Alternative, existing BLM land management plans within the LUPA Decision Area (California Desert Conservation Area Plan as amended, and the Bishop and Bakersfield Resource Management Plans) would continue to be implemented on BLM lands. BLM's management of public health, safety, and services under the laws, regulations, and policies listed in Volume II, Section II.2, would continue.

Protection of existing Legislatively and Legally Protected Areas, such as wilderness, would continue. In addition, renewable energy projects would continue to be evaluated and approved with project-specific mitigation requirements. The continued protection of Legislatively and Legally Protected Areas would have no effect on public health, safety, and services since there would be no changes to protected areas or development patterns.

#### *IV.22.3.1.3 Impacts of Transmission Outside the DRECP Area*

Delivery of renewable energy from the DRECP area to load centers would require construction of new transmission lines in existing transmission corridors outside the

DRECP area. These would be in the San Diego, Los Angeles, North Palm Springs–Riverside, and Central Valley areas. The impacts on public health, safety, and services are as follows.

### *Impact PS-1: Plan components would involve hazardous materials or conditions that could result in a hazard to the public or environment.*

Construction of transmission lines would involve the use of hazardous materials such as fuels, lubricating oils, hydraulic fluids, glycol-based coolants, lead-acid batteries, solvents, paints, cleaning agents, coatings, and herbicides. In addition to the hazardous materials introduced to the site by renewable energy facilities and transmission components, sites may have existing contamination that could pose a risk to workers and the environment during site construction. Construction would involve excavation and grading. Certain public health conditions could arise as well. Valley fever fungus is endemic in some desert soils; if soil containing the fungus is disturbed, fungal spores could be released and inhaled.

### *Impact PS-2: Plan components could result in an airport or air traffic safety hazard.*

The presence of transmission towers and conductors where aircraft are likely to fly would be an air traffic safety concern. Airport safety hazard impacts are greatest where towers and lines would be located within 2 miles of an airport or within an Airport Land Use Compatibility Plan. Flight safety hazards occur in situations where towers are 200 feet above ground surface and where conductors are strung in areas where aircraft are liable to fly, such as in valleys or canyons. The FAA determines if the location of a transmission line would pose a hazard and determines which towers and conductor spans require safety beacons and marker balls.

### *Impact PS-3: Plan components would create an increased risk of wildland fire.*

Certain activities would increase the potential for wildland fire, including clearing of vegetation, transmission line operation, and introduction of people, equipment, and vehicles into remote areas. Portions of the transmission corridors outside the DRECP area are in highly urbanized areas where the risk of wildland fires is minimal because of the built-up nature of the surroundings. Where the corridors are in open vegetated landscapes, there is a higher risk. High-voltage transmission line rights-of-way are under the jurisdiction of the California Public Utilities Commission, which has rules for line clearances relative to vegetation, structures, and the ground. In addition, jurisdictions such as the U.S. Forest Service have specific fire safety requirements regarding clearances and right-of-way maintenance during construction, including prohibitions on work under certain high-risk conditions and during operation.

***Impact PS-4: Plan components would create a demand for new or expanded police, fire, and emergency service facilities.***

During construction of transmission lines in high hazard areas, crews are required by the California Public Utilities Commission to have adequate fire suppression and to follow specific fire safety protocols, such as not parking in grass, keeping within approved work areas, and wetting areas before welding. Depending on the location and season, a fire monitor may be required to accompany crews. Because new lines are expected to be in existing corridors with existing lines, the same police, fire, and emergency services would serve the new line and there would be no need for additional service facilities.

## IV.22.3.2 Preferred Alternative

### *IV.22.3.2.1 Impacts of Renewable Energy and Transmission Development – Preferred Alternative*

This section addresses two components of effects of the Proposed LUPA—the streamlined development of renewable energy and transmission on BLM land under the LUPA and the impacts of the amended land use plans themselves.

Proposed LUPA decisions would determine the specific locations where renewable energy and transmission development would be allowed, which may encourage or restrict development in some areas. Also, BLM would be responsible for public services and safety on BLM-managed lands. Public health, safety, and service impacts would be largely limited to DFAs.

***Impact PS-1: Plan components would involve hazardous materials or conditions that could result in a hazard to the public or environment.***

As discussed under Section IV.22.2, all phases of renewable energy projects under the Preferred Alternative would involve the transport, use, storage, and disposal of hazardous materials. Hazardous materials include fuels, lubricating oils, hydraulic fluids, glycol-based coolants, lead-acid batteries, solvents, paints, cleaning agents, coatings, and herbicides. Additionally, solar facilities may involve the use of HTF, dielectric fluids, TES salts (sodium and potassium nitrates), and steam amendment chemicals.

In addition to the hazardous materials associated with renewable energy facilities and transmission components, sites may have existing contamination that could pose a risk to workers and the environment during site characterization, construction, operations, and decommissioning. Refer to Section III.22.2.1 and Table III.22-1.

Solar facilities would create greater risks from hazardous materials due to the larger quantity and nature of these materials, as compared with wind or geothermal facilities. Solar thermal and geothermal facilities use cooling towers that provide breeding grounds for *Legionella* bacteria.

Renewable energy facility site characterization, construction, operations, maintenance, and decommissioning could lead to hazardous materials impacts from improper handling of existing hazardous wastes or improper transport, use, storage, or disposal of hazardous materials. Extensive movement of soil could lead to airborne transmission of valley fever spores. Additional hazardous material impacts that could occur under the Preferred Alternative would be increased risk of fires, human health impacts, and environmental contamination. This could lead to environmental impacts related to biological resources, surface water, groundwater, air quality, agriculture, grazing, and recreation.

***Impact PS-2: Plan components could result in an airport or air traffic safety hazard.***

Airport safety hazards for the Preferred Alternative would be similar to the typical impacts discussed in Section IV.22.2. Airport safety issues include the construction and operation of tall structures such as focusing towers for solar facilities, steam stacks for geothermal facilities, and turbines for wind facilities. In addition, solar facilities can produce glare and both solar thermal and geothermal facilities produce steam that could interfere with airport safety. Solar thermal projects using air-cooled condensers emit high-velocity plumes that affect low-flying aircraft.

The potential for projects to create airport safety hazards is greatest where facilities would be located within 2 miles of an airport or within an Airport Land Use Compatibility Plan; however, potential project impacts can extend beyond these areas. Under the Preferred Alternative, there are no airports within DFAs on BLM-managed lands in the LUPA Decision Area; however, there may be airports within 2 miles of these DFAs (e.g., Blythe Airport, among others; see Figure III.22-2.) or within Airport Land Use Compatibility Plans.

***Impact PS-3: Plan components would create an increased risk of wildland fire.***

Renewable energy facilities could increase the potential for wildland fire hazards through clearing of vegetation, the use of hazardous materials, and the introduction of people, equipment, and vehicles into remote areas. The difficulty of extinguishing fires in solar panel fields and at the tops of the wind turbines could spread fires more quickly. The Preferred Alternative would include 388,000 acres of DFAs on BLM-managed lands, which is considerably less acreage than in the No Action Alternative, with comparably less interface of wildlands and renewable energy development.

***Impact PS-4: Plan components would create a demand for new or expanded police, fire, and emergency service facilities.***

As described in Section IV.22.2, renewable energy projects would generate additional calls to local police and fire services. The Preferred Alternative would concentrate the majority of development within the 388,000 acre DFA areas, potential disturbance area would be approximately 81,000 acres. Renewable energy facility development may be near existing fire stations and existing police stations, and could affect the ability of responders to handle additional calls. Responders may need additional personnel or equipment.

**Impacts on Variance Process Lands**

Variance Process Lands represent the BLM Solar PEIS Variance Lands as screened for the Proposed LUPA based on BLM screening criteria. Development of renewable energy on Variance Process Lands would not require a BLM LUPA; the environmental review process would be somewhat simpler than if the location were left undesignated. However, all solar, wind, and geothermal energy development applications would have to follow a variance process before the BLM would determine whether to continue with processing them (see Volume II, Section II.3.3.3.2 for details of the variance process).

Under the Preferred Alternative, there are 40,000 acres of Variance Process Lands in the LUPA Decision Area. Development of Variance Process Lands would potentially result in public safety and service impacts as described in PS-1 to PS-4, regulatory requirements and BLM land use plans would limit impacts. Conservation or development of the Variance Process Lands would not alter effects related to public health, safety, and services.

***Conservation and Management Actions***

The conservation strategy for the Preferred Alternative (Volume II, Section II.3.4) defines specific actions that would reduce the impacts of this alternative. The conservation strategy includes definition of specific Conservation Management Actions (CMAs) for the Preferred Alternative. No CMA elements are relevant to public health, safety, and services.

### *IV.22.3.2.2 Impacts of Ecological and Cultural Conservation and Recreation Designations – Preferred Alternative*

The Preferred Alternative would include over 5.2 million acres of conservation in the LUPA Decision Area (see Table IV.1-1). As described in Section IV.22.3.1.2 for the No Action Alternative, existing conservation and conservation designations would not create new impacts with respect to public health, safety, and services. On conserved lands, there would also be no impacts related to energy development.

The Preferred Alternative does not include changes to existing BLM guidance on public health, safety, and services, but the pattern of development would change. Under this alternative, the focus of preservation on habitat connectivity and cultural-botanical resource locations concentrates development near existing public service facilities. These changes would not affect hazardous materials, or airport hazards.

#### *IV.22.3.2.3 Impacts of Transmission Outside the DRECP Area*

The impacts of transmission outside the DRECP area on public health, safety, and services would be the same under all alternatives. These impacts are as described for the No Action Alternative in Section IV.22.3.1.3.

#### *IV.22.3.2.4 Comparison of the Preferred Alternative With the No Action Alternative*

The Preferred Alternative concentrates renewable energy development in areas closer to fire and emergency service facilities relative to the No Action Alternative. The reduction in acreage available for development compared with the No Action Alternative reduces the wildland fire hazard interface and potential fire risk. Hazardous waste and airport safety impacts would be similar to the No Action Alternative.

The Preferred Alternative includes 388,000 acres of DFAs. Compared with the No Action Alternative, which allows development on 2,804,000 acres, the Preferred Alternative would result in a more concentrated development on BLM-managed lands, which would reduce fire risk and may improve the provision of BLM public health, safety, and services.

### IV.22.3.3 Alternative 1

#### *IV.22.3.3.1 Impacts of Renewable Energy and Transmission Development – Alternative 1*

This section addresses two components of effects of the Proposed LUPA—the streamlined development of renewable energy and transmission on BLM-managed land under the Proposed LUPA and the impacts of the amended land use plans themselves.

Proposed LUPA decisions would determine the specific locations where renewable energy and transmission development would be allowed, which may encourage or restrict development in some areas. BLM would be responsible for public services and safety on BLM-managed lands. Public health, safety, and service impacts would be largely limited to DFAs.

### *Impact PS-1: Plan components would involve hazardous materials or conditions that could result in a hazard to the public or environment.*

Impacts of Alternative 1 would be generally similar to the impacts described for the Preferred Alternative. Alternative 1 would allow the most solar development of any alternative; as discussed previously, hazardous material risk is higher for solar technologies.

### *Impact PS-2: Plan components could result in an airport or air traffic safety hazard.*

Impacts of Alternative 1 would be similar to the impacts described for the Preferred Alternative. However, there may be fewer airports near DFAs in Alternative 1, thus reducing impacts in comparison with the Preferred Alternative. Alternative 1 has the least amount of wind development, reducing airport safety conflicts and communication interference from wind turbines.

### *Impact PS-3: Plan components would create an increased risk of wildland fire.*

Impacts of Alternative 1 related to wildfire risk would be similar to the impacts described for the Preferred Alternative. However, Alternative 1 would include 81,000 acres of DFA areas clustered in fewer locations, which would reduce the interface of wildlands and development to about half the area of Preferred Alternative DFAs and thus reduce fire risk.

### *Impact PS-4: Plan components would create a demand for new or expanded police, fire, and emergency service facilities.*

Impacts of Alternative 1 related to law enforcement and emergency response would be similar to impacts described for the Preferred Alternative.

### Impacts on Variance Process Lands

Variance Process Lands represent the BLM Solar PEIS Variance Lands as screened for the Proposed LUPA based on BLM screening criteria. Development of renewable energy on Variance Process Lands would not require a BLM LUPA; the environmental review process would be somewhat simpler than if the location were left undesignated. However, all solar, wind, and geothermal energy development applications would have to follow a variance process before the BLM would determine whether to continue with processing them (see Volume II, Section II.3.3.3.2 for details of the variance process).

Under Alternative 1, there are 35,000 acres of Variance Process Lands in the LUPA Decision Area. These lands are found in the following areas:

- East of Highway 395, north of Independence in Inyo County
- South of Sandy Valley along the California/Nevada border
- West of Needles
- Near State Route 62, west of Parker, Arizona, near the California/Arizona border
- North of Blythe, immediately south of the Big Maria Mountains Wilderness
- South of State Route 98, east of Imperial Valley, along the California/Mexico border
- Near Hidden Hills
- South of Historic Route 66, east of Marine Corps Air-Ground Combat Center (MCAGCC) Twentynine Palms, and both east and west of the City of Twentynine Palms
- Near the Big Maria Mountain Wilderness

Development of Variance Process Lands would potentially result in public safety and service impacts as described in PS-1 to PS-4. Although there are 6 airports within 5 miles of these Variance Process Lands, regulatory requirements and BLM land use plans would limit their impacts.

***Conservation and Management Actions***

The conservation strategy for Alternative 1 (presented in Volume II, Section II.4.4) defines specific actions that would reduce the impacts of this alternative. The conservation strategy includes specific CMAs for the Preferred Alternative. There are no CMAs that apply specifically to Alternative 1 for public health, safety, and services.

### *IV.22.3.3.2 Impacts of Ecological and Cultural Conservation and Recreation Designations – Alternative 1*

Alternative 1 includes over 5 million acres of existing and proposed conservation designations on BLM-managed lands. Alternative 1 would not alter BLM public health, safety, and services regulations, but the pattern of development would change. This would focus development closer to existing public service facilities. BLM land designation changes would have no effect on hazardous materials, airport hazards, or landfill issues.

#### *IV.22.3.3.3 Impacts of Transmission Outside the DRECP Area*

The impacts of transmission outside the DRECP area on public health, safety, and services would be the same under all alternatives. These impacts are as described for the No Action Alternative in Section IV.22.3.1.3.

#### *IV.22.3.3.4 Comparison of Alternative 1 With the Preferred Alternative*

Alternative 1 impacts would be generally similar to the Preferred Alternative. While hazardous material impacts of Alternative 1 would be similar, impacts on airport safety and communication interference would be slightly less due the reduced amount of wind development and the presence of fewer airports near DFAs. Fire risk and emergency response needs would be less than for the Preferred Alternative given the geographically confined nature of the DFAs.

Neither the Preferred Alternative nor Alternative 1 would affect existing BLM guidance related to public health, safety, and services.

### IV.22.3.4 Alternative 2

#### *IV.22.3.4.1 Impacts of Renewable Energy and Transmission Development – Alternative 2*

This section addresses two components of effects of the Proposed LUPA—the streamlined development of renewable energy and transmission on BLM-managed land under the Proposed LUPA and the impacts of the amended land use plans themselves.

***Impact PS-1: Plan components would involve hazardous materials or conditions that could result in a hazard to the public or environment.***

Impacts of Alternative 2 would be similar to the impacts described for the Preferred Alternative.

***Impact PS-2: Plan components could result in an airport or air traffic safety hazard.***

Impacts of Alternative 2 would be similar to the impacts described for the Preferred Alternative. This alternative has approximately 6 airports near DFAs, as compared with approximately 7 airports near DFAs for the Preferred Alternative.

***Impact PS-3: Plan components would create an increased risk of wildland fire.***

Alternative 2 has the most DFA acres (718,000) and the largest amount of wind development as compared with the other action alternatives. These features, combined

with the geographically dispersed locations of the DFAs, increase the potential for wildland fire risk.

***Impact PS-4: Plan components would create a demand for new or expanded police, fire, and emergency service facilities.***

Impacts of Alternative 2 would be similar to the impacts described for the Preferred Alternative.

### Impacts on Variance Process Lands

Variance Process Lands represent the BLM Solar PEIS Variance Lands as screened for the Proposed LUPA based on BLM screening criteria. Development of renewable energy on Variance Process Lands would not require a BLM LUPA; the environmental review process would be somewhat simpler than if the location were left undesignated. However, all solar, wind, and geothermal energy development applications would have to follow a variance process before the BLM would determine whether to continue with processing them (see Volume II, Section II.3.3.3.2 for details of the variance process).

Under Alternative 2, there are 29,000 acres of Variance Process Lands in the LUPA Decision Area. These lands are found in the following areas:

- Immediately south of MCAGCC Twentynine Palms both east and west of the City of Twentynine Palms
- North of Victorville

Development of Variance Process Lands would potentially result in public safety and service impacts as described in Impacts PS-1 to PS-4. Although there are 3 airports within 5 miles of Variance Process Lands, regulatory requirements and BLM land use plans would limit their impacts. Conservation or development of the Variance Process Lands would not alter public health, safety, and services.

#### *Conservation and Management Actions*

The conservation strategy for Alternative 2 (presented in Volume II, Section II.5.4) defines specific actions that would reduce the impacts of this alternative. The conservation strategy includes specific CMAs for the Preferred Alternative. There are no CMAs that apply specifically to Alternative 2 for public health, safety, and services.

#### *IV.22.3.4.2 Impacts of Ecological and Cultural Conservation and Recreation Designations – Alternative 2*

Alternative 2 includes over 5.6 million acres of existing and proposed conservation designations. Conservation designations would result in minimal impacts with respect to public health, safety, and services since they would not generate a new need for public services or create new health or safety issues.

#### *IV.22.3.4.3 Impacts of Transmission Outside the DRECP Area*

The impacts of transmission outside the DRECP area on public health, safety, and services would be the same under all alternatives. These impacts are as described for the No Action Alternative in Section IV.22.3.1.3.

#### *IV.22.3.4.4 Comparison of Alternative 2 with the Preferred Alternative*

Alternative 2 impacts would be similar to the Preferred Alternative. However, wildland fire impacts would be increased due to the greater amount of DFA acres, geographic dispersal of DFAs within the LUPA Decision Area, and greater wind development.

Neither the Preferred Alternative nor Alternative 2 would affect existing BLM guidance related to public health, safety, and services.

### IV.22.3.5 Alternative 3

#### *IV.22.3.5.1 Impacts of Renewable Energy and Transmission Development – Alternative 3*

This section addresses two components of effects of the Proposed LUPA—the streamlined development of renewable energy and transmission on BLM-managed land under the Proposed LUPA and the impacts of the amended land use plans themselves.

***Impact PS-1: Plan components would involve hazardous materials or conditions that could result in a hazard to the public or environment.***

Impacts of Alternative 3 would be similar to the impacts described for the Preferred Alternative.

***Impact PS-2: Plan components could result in an airport or air traffic safety hazard.***

Impacts of Alternative 3 would be similar to the impacts described for the Preferred Alternative.

***Impact PS-3: Plan components would create an increased risk of wildland fire.***

Alternative 3 would include 211,000 acres of DFA areas, less than the Preferred Alternative. This, coupled with the location of DFAs closer to existing development, would reduce the interface of wildlands and development and slightly reduce fire hazard risk.

***Impact PS-4: Plan components would create a demand for new or expanded police, fire, and emergency service facilities.***

Impacts of Alternative 3 would be similar to the impacts described for the Preferred Alternative.

**Impacts on Variance Process Lands**

Variance Process Lands represent the BLM Solar PEIS Variance Lands as screened for the Proposed LUPA based on BLM screening criteria. Development of renewable energy on Variance Process Lands would not require a BLM LUPA; the environmental review process would be somewhat simpler than if the location were left undesignated. However, all solar, wind, and geothermal energy development applications would have to follow a variance process before the BLM would determine whether to continue with processing them (see Volume II, Section II.3.3.3.2 for details of the variance process).

Under Alternative 3, there are 2,000 acres of Variance Process Lands in the LUPA Decision Area. These lands are found in the Lucerne Valley, both east and west of State Route 247. Impacts from development of Variance Process Lands would be similar in nature, but at a reduced level, to impacts identified for the Preferred Alternative.

Development of Variance Process Lands would potentially result in public safety and service impacts as described in PS-1 to PS-4, regulatory requirements and BLM land use plans would limit impacts. Conservation or development of the Variance Process Lands would not alter public health, safety, and services.

***Conservation and Management Actions***

The conservation strategy for Alternative 3 (presented in Volume II, Section II.6.4) defines specific actions that would reduce the impacts of this alternative. The conservation strategy includes specific CMAs for the Preferred Alternative. There are no specific CMAs relevant to public health, safety, and services for Alternative 3.

### *IV.22.3.5.2 Impacts of Ecological and Cultural Conservation and Recreation Designations – Alternative 3*

Alternative 3 includes almost 5.3 million acres of existing and proposed conservation designations. The conservation designations would result in minimal impacts on public

health, safety, and services and would not generate a new need for public services or result in new safety issues.

#### *IV.22.3.5.3 Impacts of Transmission Outside the DRECP Area*

The impacts of transmission outside the DRECP area on public health, safety, and services would be the same under all alternatives. These impacts are as described for the No Action Alternative in Section IV.22.3.1.3.

#### *IV.22.3.5.4 Comparison of Alternative 3 With the Preferred Alternative*

Alternative 3 impacts would be similar to the Preferred Alternative. However, wildland fire risk would be slightly lower under Alternative 3 due to reduced DFA acres and wildland interface. Neither the Preferred Alternative nor Alternative 3 would affect existing BLM guidance on public health, safety, and services.

### IV.22.3.6 Alternative 4

#### *IV.22.3.6.1 Impacts of Renewable Energy and Transmission Development – Alternative 4*

This section addresses two components of effects of the Proposed LUPA—the streamlined development of renewable energy and transmission on BLM-managed land under the Proposed LUPA and the impacts of the amended land use plans themselves.

***Impact PS-1: Plan components would involve hazardous materials or conditions that could result in a hazard to the public or environment.***

Impacts of Alternative 4 would be similar to the impacts described for the Preferred Alternative.

***Impact PS-2: Plan components could result in an airport or air traffic safety hazard.***

Impacts of Alternative 4 would be similar to the impacts described for the Preferred Alternative.

***Impact PS-3: Plan components would create an increased risk of wildland fire.***

Impacts of Alternative 4 would be similar to the impacts described for the Preferred Alternative. Alternative 4 has fewer DFA acres, but they are more dispersed within the LUPA Decision Area; the greater dispersal would increase wildland fire risk.

***Impact PS-4: Plan components would create a demand for new or expanded police, fire, and emergency service facilities.***

Impacts of Alternative 4 would be similar to the impacts described for the Preferred Alternative.

**Impacts on Variance Process Lands**

Variance Process Lands represent the BLM Solar PEIS Variance Lands as screened for the Proposed LUPA based on BLM screening criteria. Development of renewable energy on Variance Process Lands would not require a BLM LUPA; the environmental review process would be somewhat simpler than if the location were left undesignated. However, all solar, wind, and geothermal energy development applications would have to follow a variance process before the BLM would determine whether to continue with processing them (see Volume II, Section II.3.3.3.2 for details of the variance process).

Under Alternative 4, there are 529,000 acres of Variance Process Lands in the LUPA Decision Area. These lands are found in the following areas:

- East of Highway 395, north of Independence in Inyo County
- South of Sandy Valley along the California/Nevada border
- West of Needles
- Near State Route 62, west of Parker, Arizona, near the California/Arizona border
- North of Blythe, immediately south of the Big Maria Mountains Wilderness
- South of State Route 98, east of Imperial Valley, along the California/Mexico border
- North of Hidden Hills along the California/Nevada border
- North of Interstate 15 east of Fort Irwin
- Surrounding the Owens Dry Lake
- East of California City north of Edward Air Force Base
- Surrounding Barstow
- Scattered around Adelanto, Victorville, and in Lucerne Valley
- East and West of the City of Twentynine Palms
- South of Interstate 40 near Ludlow
- South of Historic Route 66 east of MCAGCC Twentynine Palms
- North of the Rice Valley Wilderness and Big Maria Mountains Wilderness along State Route 62

- South of Interstate 10 east of the Chuckwalla Mountains Wilderness
- South of Interstate10, immediately north of the Palo Verde Mountains Wilderness
- Scattered west and south of the Chocolate Mountains east of the Imperial Sand Dunes including east of Holtville and south of State Route 98

Development or conservation of Variance Process Lands would affect public health, safety, and services, as described for the Preferred Alternative. There are an additional 11 airports within 5 miles of these Variance Process Lands; however, regulatory requirements and BLM land use plans would limit impacts.

***Conservation and Management Actions***

The conservation strategy for Alternative 4 (presented in Volume II, Section II.7.4) defines specific actions that would reduce the impacts of this alternative. The conservation strategy includes specific CMAs for the Preferred Alternative. No CMAs specific to Alternative 4 are relevant to public health, safety, and services.

### *IV.22.3.6.2 Impacts of Changes to Bureau of Land Management Land Designations – Alternative 4*

Alternative 4 includes almost 4.7 million acres of existing and proposed conservation designations. The conservation designations would result in minimal impacts on public health, safety, and services because they would not generate new need for public services or result in new safety issues.

### *IV.22.3.6.3 Impacts of Transmission Outside the DRECP Area*

The impacts of transmission outside the DRECP area on public health, safety, and services would be the same under all alternatives. These impacts are as described for the No Action Alternative in Section IV.22.3.1.3.

### *IV.22.3.6.4 Comparison of Alternative 4 With the Preferred Alternative*

Alternative 4 impacts would be similar to the Preferred Alternative. Fire risk would be slightly increased due to a potential increase in wildland interface. Neither the Preferred Alternative nor Alternative 4 would affect existing BLM guidance related to public health, safety, and services.

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