

3.18 Health and Safety

3.18.1 Naturally Occurring Health and Safety Conditions

Potential health and safety concerns in the study area related to the natural environment include geologic, hydrologic, and wildfire threats. Existing natural hazards in the study area have been described in detail in Section 3.2, Geology; Section 3.4, Water Resources; and Section 3.5, Biological Resources; therefore, they are only briefly reiterated here.

The study area falls within the area bounded by the San Andreas, Garlock, and Death Valley fault zones. Numerous smaller faults, both active and historically active, traverse the study area. Recent seismic activity associated with the Landers and Big Bear earthquakes in 1992 has shown that the study area falls within a very active seismic zone. The latest significant earthquake in the area was the October 1999 Hector Mine Earthquake, which had a magnitude of 7.1. This earthquake was centered 47 miles east-southeast of Barstow and is not considered an aftershock of the 1992 Landers earthquake. The primary geologic risk to human health and safety arises from proximity to the San Andreas Fault zone and other active faults. As is the case in most of southern California, seismic shaking associated with a large earthquake along one of these faults could result in injuries or death because of building collapse, falling debris, and other related hazards. In addition, the possibility of vehicular accidents exists during an earthquake event, particularly if vehicles are operating on steep terrain.

Hydrologic hazards, in the form of flash floods, pose potential threats to human health and safety during and after rainstorms in the desert. Much of the study area is subject to flash flooding following heavy rainstorms. Heavy torrential rains can cause violent flood waves when they are concentrated in canyon areas and slower, less destructive flows when concentrated over open slopes or bajadas.

Wildfires in the study area present a relatively minor threat to human health and safety due to the sparse population within the study area; thus, wildfires would only be a threat to residences if the fires occurred in close proximity to them. Any wildfires occurring in the remote, unpopulated portions of the study area represent minor threats because of the lack of substantial amounts of vegetation that would fuel the fires.

Extended exposure to desert climatic conditions can be hazardous to human health if appropriate precautions are not taken. Typical summer daytime temperatures can reach the low 100s in degrees Fahrenheit (°F). Extended exposure to the sun and heat without the appropriate clothing, shade, and adequate water can result in heat stroke or heat exhaustion. The majority of the study area supports vegetation communities that typically do not provide adequate shade for protection from the sun. The presence of a few springs in the study area could provide water, but the water in most of the springs is not suitable for human consumption.

Other health and safety concerns are related to encounters between humans and venomous reptiles and insects. The study area falls within the range of several species of rattlesnakes, including the Mojave rattlesnake, speckled rattlesnake, and sidewinder. These species have all been observed in the study area. The Mojave rattlesnake is particularly dangerous because of its potent venom. These snakebites could potentially cause great harm to humans, particularly if left untreated for an extended period of time. In addition to poisonous reptiles, scorpions and poisonous spiders, such as tarantulas, also pose a threat to human health. A sting or bite from these invertebrates is typically not serious, although people with sensitivity to bee and wasp venom could possibly have serious reactions to scorpion and tarantula venom.

The general remoteness of the study area creates its own hazard because any human injury or vehicle breakdown has the potential to go undiscovered for a significant amount of time. Search and rescue operations in the study area are currently the responsibility of the San Bernardino County Sheriff.

3.18.2 Manmade Health and Safety Conditions

The approximately 249,650-acre study area is primarily vacant land that has been subjected to various historical and present land uses, including grazing, mining, and recreation. Much of the study area is relatively undisturbed because of the lack of roads and trails and the resulting inaccessibility of many areas.

Numerous active and abandoned mines occur within the boundaries of the study area, as summarized in Section 3.17, Hazardous Materials and Solid Waste, and detailed in the Environmental Baseline Study for the Proposed Land Expansion. Many of the abandoned mines are not boarded up or protected from trespassing by humans. Most mines in the study area are not ventilated and may present health risks to humans through inhalation of noxious gases or by oxygen deficiencies. Abandoned mine shafts present a falling hazard to humans. Mining prospect holes, which have never been active mining or processing operation sites, also pose a falling hazard to people and wildlife. The tailings or mining wastes from some of the active and abandoned mines may pose a health hazard to humans because of their potential for chemical contamination. Potential chemical hazards in the study area include exposure to elevated levels of metals in soil and surface water bodies, diesel fuel concentrations in soil, cyanide at various mining locations, and naturally occurring gas-phase elements and compounds in mineshafts. Consequently, the potential exists for human exposure to inhaling contaminated airborne dust or ingesting soil particles. Some risks may exist from the possible presence of aging explosive materials, such as dynamite or discarded blasting caps, in the study area. Aged explosive materials may be stored in old mineshafts and can explode if jolted, resulting in a fatal explosion.

Idle or abandoned water wells within the study area could pose a potential human health risk because they provide a conduit for downward migration of surficial contaminants into the underlying groundwater system. Some types of wells, particularly those that are uncovered, large diameter, hand-dug, wooden, or cement-cased, may present an additional physical hazard to humans and wildlife from falls and/or drowning. The potential exists for exposure to, and consumption of, contaminated surface water, when present, in the study area.

The few scattered residences within the study area may pose a potential health risk because of contamination resulting from septic tanks, leach fields, discarded trash, toxic household chemicals, pesticides, and possibly some asbestos. Because housing areas are relatively scarce, no major environmental or human health risks would be expected to result from these residences.

Three utility corridors are present near or within the boundaries of the study area, including the Boulder Utility Corridor (Corridor D), the I-15 Utility Corridor (Corridor BB), and Corridor Q. These corridors contain power lines, transcontinental fiber-optic cables, and trans-state oil and gas pipelines. The high-voltage transmission lines could pose an electrocution hazard to humans on the ground if seismic events topple the towers; they could also pose a threat to low-flying aircraft. The Kern River Gas Transmission Pipeline, which transports natural gas, is located within Corridor D. Rupture of this natural gas pipeline and potential fire could pose a

health risk to personnel maintaining the pipeline or to individuals in the vicinity of a rupture. No known human health risk is associated with underground fiber-optic cables.

No known active or former landfills, dumps, or underground storage tanks are within the boundaries of the study area. Based on the past land use of the area and its relatively undisturbed condition, it is unlikely that any significant quantities of potentially hazardous materials or waste are present that could pose a threat to human health.

OHV recreation activities currently occur within various portions of the study area. A risk of vehicle accidents exists, along with a potential for resulting injuries to humans. No designated OHV areas are located within the boundaries of the study area, but evidence exists throughout much of the area that OHVs do go off-road. Traffic accidents, particularly along Fort Irwin Road and State Highway 127, also pose a health and safety risk to humans. The presence of windblown dust during heavy windstorms could serve to increase the risk of traffic accidents along these two roads.

3.18.3 Environmental Health and Safety of Children

Executive Order (EO) 13045 signed on April 21, 1997 mandates the investigation of environmental effects on children. This Executive Order acknowledges that children may suffer disproportionately from environmental health risks and safety risks. Therefore, each federal agency is required to make it a priority to identify and assess environmental health and safety risks that may disproportionately affect children and ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health or safety risks. Accordingly, this SDEIS will abide by the EO and determine the baseline environmental conditions and effects of the proposed action on children.

Baseline conditions for various different mediums have been discussed in specific sections of this SDEIS, namely Air Quality (Section 3.7), Water Resources (Section 3.4), Soils (Section 3.3), Noise (Section 3.8), Mining (Section 3.11), and Hazardous Materials and Hazardous Waste (Section 3.17). For detailed descriptions, please see the above-mentioned sections, as this section only summarizes baseline conditions for the health and safety of children.

Children are exposed to the same dangers already discussed earlier in this chapter, those of extreme climate conditions, venomous reptiles and insects, and aggressive vegetation. Due to the vastness and remoteness of the area, children are susceptible to being caught in wildfires or flash floods. Man-made features are also a danger to children left unattended. They could fall into any of the numerous active or abandoned mines or water wells.

3.19 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice In Minority Populations and Low-Income Populations* requires that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations” (EO 12898).

Executive Order 12898 also establishes that each federal agency must ensure that public documents, notices, and hearings are readily available to the public. The Army published a NOI in the Federal Register on October 16, 2001 announcing its intention to prepare an SDEIS, to take over lead agency responsibilities for the proposed action, and to set the time and place for scoping meetings. Two meetings were held on November 29, 2001 in Barstow, California. An