

4.17.5 Alternative V: East Gate/UTM 90

4.17.5.1 Impacts

The environmental impacts under this alternative would be the same as Alternative I.

4.17.5.2 Mitigation

Utilizing the current hazardous materials and solid waste management practices/procedures and implementing them in the expansion area, mitigation measures will not be necessary. UXO will be surfaced cleared within the alternative on a regular basis.

4.17.6 Alternative VI: No Action

Under this alternative, the Army would not maneuver in the study area, and therefore, would not introduce hazardous and/or toxic materials into those areas. Military exercises and equipment support under this alternative would be limited to the existing levels at Fort Irwin and within its boundaries. Therefore, the amount of hazardous materials and solid waste used and generated would be expected to remain constant.

The inspection and monitoring of hazardous materials storage and handling facilities will continue to be performed under the auspices of Fort Irwin and NTC regulations promulgated according to the Department of Public Works (DPW). Under these regulations, Fort Irwin will continue to comply with the Resource Conservation and Recovery Act for the inventory, storage, handling, recycling, and disposal of hazardous materials. Therefore, no significant adverse impacts are anticipated.

Contaminated soils generated from spills of oil, grease, lubrication fluid, hydraulic fluid, and fuels from fueling and maintenance of vehicles and equipment will continue to be removed from the field. Stockpiling of these hazardous substances at the Fort Irwin Class III landfill is no longer permitted, and the material is now decomposed through a permitted bioremediation program. Therefore, no significant adverse impacts will result in the continued military field operations that generate this type of waste.

Operations involving the generation of solid waste would continue to be removed from the field and disposed of at the Fort Irwin Class III landfill.

4.17.7 Cumulative Impacts

Cumulatively there are no anticipated impacts to hazardous and solid waste.

4.18 Health and Safety

The evaluation of health and safety impacts related to the alternatives is based on the potential for accidents and any health risks from normal project operations. The significance of an adverse safety impact increases as either (or both) of these two parameters increase. By definition, adverse safety impacts result from unsafe acts and conditions undertaken during the operations phase of a project. Beneficial impacts may result from any direct or indirect safety improvements resulting from project implementation.

Impacts to Health and Safety are considered significant if any of the following would occur:

- ❖ Interferes with emergency response or evacuation plans;
- ❖ Exposes humans to hazardous materials or hazardous waste;
- ❖ Results in an increased likelihood of an uncontrolled release of hazardous materials that could contaminate soil, surface water, and groundwater;
- ❖ Creates a situation involving personal endangerment or unusual risk to employees, visitors, residents, or the general public located offsite; and/or
- ❖ Creates or exacerbates an existing fire hazard or expose people to high fire hazard conditions without adequate fire protection.

4.18.1 Alternative I: East/West

4.18.1.1 Impacts

The impacts on human health and safety that could result from military maneuvers under this alternative can be classified, in general, as geologic, hydrologic, biological, traffic hazards, and climatic hazards. The impacts resulting from seismic events within the boundary of this alternative or in the vicinity will be the same as they are currently. Because maneuvers will be conducted primarily in the open terrain, hazards from surface rupture and falling rocks are not significant.

Alternative I borders the utility corridor, which forms a strong visual landmark that minimizes risks to adjacent users from military equipment exceeding the boundaries. This alternative is parallel to 24.3 miles of utility corridor. Potential safety hazards include the operation of military vehicles in the existing utility corridors. The impact of a tank or other military vehicle colliding with a utility tower could result in injuries and in potential electrocution if the integrity of the tower is affected. In addition, some of the power poles located within this alternative may be low enough that high-profile vehicles could potentially come into contact with electrical wires. This could also result in an electrocution hazard. High-pressure natural gas pipelines in the utility corridor may also represent a safety hazard if heavy military vehicles continually cross at the same points or if maneuver activities compromise the integrity of the underground pipeline. There is also a risk of military aircraft colliding with overhead transmission lines. These potential safety impacts associated with military vehicles crossing the utility corridor are considered significant.

There is a potential safety risk to military vehicles operating in close proximity to overhead electrical transmission lines and underground natural gas pipelines during a seismic event. The risks are related to electrocution and/or injury if the overhead lines break, a utility tower topples, or underground pipeline ruptures. These impacts could be considered significant.

During and after heavy rainstorms, there is a risk of flash flooding that could result in injuries or death. The risk of flooding and erosion could be increased from the current level as a result of crushing and removal of vegetation that impedes the flow of runoff and holds the soil in place. The increased health and safety hazards resulting from flash floods are not significant.

The possibility of soldiers being bitten by venomous reptiles or spiders, or being stung by scorpions exists within the boundaries of Alternative I, but is not expected to be common. The human health and safety impacts resulting from these incidences will be less than significant.

Performing maneuvers in the desert environment could have significant impacts on the health and safety of soldiers, particularly if they are not appropriately trained. The combination of the heat and physical activity could result in heat stroke or heat exhaustion. The impacts are not expected to be any different than they currently are in the existing maneuvers at Fort Irwin. The only difference is the longer distances that the soldiers will travel through the course of the maneuvers.

Soldiers could be stranded in the desert due to vehicle breakdowns or separation from their training units. This could be a significant health risk if soldiers are not supplied with adequate water and shade.

The potential for brush fires will increase with the increase in human and equipment activity. This risk will be the same as the current risk on Fort Irwin where brush fires historically have not posed a problem. Therefore, the risk of brush fires is not considered to be significant.

Training near NAWS China Lake live fire areas during live fire activities could result in injuries to Army personnel.

The major risk to soldiers will be from vehicle accidents while driving in the training area. This risk should not increase with this alternative as the number of soldiers, vehicles, and miles traveled will not increase.

As the installation is closed to the public, this alternative should not present any significant risk to the general public located off site.

The proposed NASA Goldstone transit route, which will be used as a convoy route by the military, will cross Goldstone Road. This crossing may result in increased traffic accidents.

4.18.1.2 Mitigation

In addition to mitigation measures found in Section 4.7, Air Quality, the following will reduce impacts to a level that is less than significant.

The following mitigation measure(s) shall be implemented, subject to availability of Fort Irwin and NTC funding:

- ❖ The initial briefing for soldiers who train at Fort Irwin will include detailed information on both the hazards of performing desert maneuvers and the principles of desert survival. This briefing will cover geologic, hydrologic, biological, and climatic hazards, as well as hazards from wildfires. Soldiers will be briefed on earthquake safety before dispersing into the field for training maneuvers. A contingency plan will be developed to provide soldiers with guidelines on what to do following a major seismic event. Soldiers will be briefed on the dangers of flash floods and erosion hazards during and after heavy rainstorms.
- ❖ To minimize health risks during desert maneuvers, soldiers will be briefed on desert survival and the signs of heat stroke and heat exhaustion. Every soldier will be provided with adequate water and will be properly trained in first aid for heat exhaustion and heat stroke. In addition, adequate communications and rescue will be available for evacuating injured soldiers or for those in distress from extreme desert conditions.

- ❖ Soldiers will be provided with adequate water and shade-producing devices in the event that they become separated from their unit or stranded in the desert. Roll call will be taken at the end of every day to ensure that no soldiers are missing from their training units. Soldiers will also be provided with flares or some other device to indicate where they are if they become stranded. Adequate communication devices will be available if soldiers go missing and to facilitate a rescue if necessary.
- ❖ Health and safety impacts associated with State Highway 127 include reduced visibility from dust clouds and civilian drivers being distracted by nearby military maneuvers. Berms, fences, and other Fort Irwin security measures will reduce these impacts to less than significant. Dust abatement programs on Fort Irwin address problems associated with wind erosion and particulate matter. Dust control includes chemical stabilization on priority sites and the testing of new technologies to improve dust control programs. Re-vegetation is also a method for reclamation of fugitive dust, although not as effective on frequently used areas.
- ❖ The possibility of collisions between military vehicles and utility towers should be eliminated. Mitigation measures include:
 - Establish a 500-meter buffer zone on the eastern portion of the study area and protect such area with a berm and fence to impede vehicles from coming close to the utility lines.
 - Providing soldiers with maps showing the exact locations of each of the towers and the associated restricted zones;
 - Reducing the potential for collisions between military or civilian aircraft and utility lines or tower by equipping all towers with standard aviation red obstruction lights; and
- ❖ Impacts associated with stranded soldiers will be reduced to less than significant through survival training and provision of adequate water and shade-producing devices (e.g. poncho).
- ❖ Dust control procedures are run by ITAM and include appropriate re-vegetation and chemical stabilization. Dust abatement procedures for Fort Irwin can be found in the INRMP.
- ❖ Fort Irwin expansion to the west and southwest will require the Army to closely coordinate NTC operations so as not to negatively impact current Navy, USAF, and NASA mission activity. The Army, Navy, USAF, and NASA will need to establish a mutually agreed upon process by way of an MOU or MOA to coordinate and schedule military flight activity, to minimize impacts and ensure no mission conflicts. This should minimize any possible conflicts that may lead to accidents.

4.18.2 Alternative II: East Gate/South

4.18.2.1 Impacts

This alternative has similar associated safety hazards as Alternative I. In addition, Alternative II is parallel to 50.7 miles of utility corridor, which forms a strong visual landmark that minimizes risks to adjacent users from military equipment exceeding the boundaries.

There is also an increased potential safety risk to military personnel operating close to the ephemeral Coyote Lake and associated streams and drainages channels due to flash flooding and desert thunderstorms. These impacts could be considered significant.

Potential impacts on traffic safety are avoided due to the adequate buffer area provided by this alternative.

4.18.2.2 Mitigation

Mitigations measures described under Alternative I will also be implemented under Alternative II.

In addition, the initial briefing for soldiers who travel to Fort Irwin will include detailed information on both the hazards of performing desert maneuvers near potential flashflood areas and ephemeral dry lakes. Also, it will be recommended that procedures be adopted in the event of desert thunderstorms when operating near Coyote Lake.

4.18.3 Alternative III: East Gate

4.18.3.1 Impacts

This alternative has similar associated safety hazards as Alternative I. Alternative III is parallel to 21.4 miles of utility corridor. Alternative III, is however, not near the NAWS China Lake live fire area.

4.18.3.2 Mitigation

Mitigations measures described under Alternative I will also be implemented under Alternative III, except for mitigation for NAWS China Lake.

4.18.4 Alternative IV: Southwest/East Gate/UTM 90

4.18.4.1 Impacts

This alternative has potential safety hazards similar to Alternative I. The exception is the potential impact to traffic on Fort Irwin Road when military vehicles cross it during training. The health and safety hazards described under Alternative II will also be expected to occur under this alternative due to the inclusion of Superior Dry Lake and a portion of Superior Valley. Alternative IV is parallel to 31.2 miles of utility corridor.

4.18.4.2 Mitigation

Mitigations measures described under Alternatives I and II will also be implemented under Alternative IV. In addition, to mitigate traffic impacts to Fort Irwin Road, the Army will construct

up to three under-crossings on Fort Irwin Road for military vehicles to cross without impeding traffic. This measure will mitigate the impact to less than significant.

4.18.5 Alternative V: East Gate/UTM 90

4.18.5.1 Impacts

This alternative has similar associated safety hazards as Alternative III. This alternative is parallel to 24.3 miles of utility corridor.

4.18.5.2 Mitigation

Mitigation measures described under Alternatives I and II, for the Eastgate portion of the alternative, will also be implemented under Alternative V.

4.18.6 Alternative VI: No Action

Under Alternative VI, there will be no planned maneuvers of military vehicles in any portion of the study area. Health and safety hazards will continue to result from the existing geologic, hydrologic, biological, and climatic conditions in the study area. Wildfires and the remoteness of the area will also continue to be a potential hazard for those humans who use the study area for recreational or other purposes. Based on the increased level of use by humans in the study area for mining and recreation, for example, the potential hazards may increase. If recreational or mining activities decrease, then the hazards may also decrease.

Seismic hazards are expected to remain the same in the study area under Alternative VI. The risk to humans from earthquakes will always be present in such close proximity to the San Andreas Fault zone. If the study area becomes populated with significantly more residences, then impacts from seismic events will be expected to increase in the study area.

The health and safety risks from electrical transmission lines and underground natural gas pipelines will remain the same under Alternative VI. A U.S. Air Force visual route and the civil air corridor currently parallel the Boulder Utility Corridor, and there are some existing potential risks posed to aircraft operating in the vicinity of overhead transmission lines. If additional utilities are installed within the utility corridors, the risk to humans and aircraft would probably increase proportionally.

Obvious topographic and manmade features mark some parts of the existing boundary of Fort Irwin. The utility corridor to the east is a visible boundary marker, and the top of Alvord Mountain is an obvious topographic feature. However, it is not uncommon for military vehicles to trespass on public and private lands adjacent to Fort Irwin. While these occurrences are generally not intentional, they do create hazards for the public and private landowners near the installation boundary. Signs mark the present Fort Irwin boundary; no fencing exists. Therefore, the risk to adjacent users of public and private lands will continue, particularly for persons using adjacent areas at night, when maneuvers often occur. In addition, the existing boundaries of Fort Irwin are generally well known to the public and private land users adjacent to Fort Irwin so that accidental trespassing by civilians onto Fort Irwin is rare.

4.18.7 Environmental Health and Safety of Children

The environmental health and safety impacts associated with the proposed action are not significant and will not differ from the impacts currently associated with living in the desert or with current operations occurring at Fort Irwin. The sparse development of the study area also minimizes the occurrence of impacts.

4.18.8 Radio Frequency and Spectrum

Fort Irwin and the NTC and NASA have an MOU that addresses most of the impacts mentioned in 4.20.2 NASA Spectrum. Frequencies at Fort Irwin are assigned based on coordination done within the Mojave Coordination Group (MCG), and through the use of tools such as IFDS. Equipment is tested at the NTC test facility prior to it being brought, to identify potential problems. This equipment is tested against mask data developed jointly between NASA/JPL and the NTC. Intense RF activities, increased use of airborne emitters close to GDSCC are also concerns to NASA. As per the MOU, any changes in RF activities will be addressed via the MCG (Mojave Coordinating Group). The location of the Alternative I is in the direction where Goldstone antennas most often track spacecraft, which may affect the antennas efficiency. To mitigate the impact, Fort Irwin will use data provided by NASA to set emission standards for army equipment deployed in the area.

Specific NASA concerns include:

- ❖ Drastic increase in the number and variety of emitters increases the likelihood for interference and makes it difficult for NASA and DoD to avoid interference through coordination;
- ❖ Intense RF activities during troop exercises and movements also increases the likelihood for interference;
- ❖ Use of airborne emitters close to GDSCC increases the chance for direct line-of-sight interference that can be catastrophic to the Goldstone DSN receiving system; and
- ❖ The expansion area is located in the direction where Goldstone antennas most often track spacecraft, making all Goldstone antennas very susceptible.

Mitigation in response to NASA concerns, in specific order, includes:

- ❖ Transmit according to the NTIA allocation table. Specifically, do not transmit in the protected Deep Space receive bands;
- ❖ Use the 2200-2290 MHz “shared” band, according to Mojave Coordination Group De-confliction procedure;
- ❖ Do not violate the Goldstone interference limits given in Table 4.20.2.8-3 of section 4.20.2.8 Do not transmit in bands adjacent to the DSN receive bands if the out-of-band emissions of such transmission would in aggregate exceed the interference limits given in Table 4.20.2.8-3. If such transmission cannot be avoided, apply one or more of the following actions to insure compliance with the interference limits: restrict the number and power level of active emitters, avoid transmitting in the line-of-sight of a DSN antenna, and avoid use of frequencies too close to the DSN frequency bands;

- ❖ Within the Goldstone boundaries, use only Goldstone approved ground communication equipment to prevent interfering with Goldstone equipment; and
- ❖ Take real-time action to prevent harmful interference to the DSN. Terminate transmission when such interference is imminent.

4.18.9 Cumulative Impacts

Significant cumulative impacts are not expected to result from the proposed project to health and safety.

4.19 Environmental Justice

The potential impacts on environmental justice from the proposed action are discussed in this section.

Impacts to Environmental Justice are considered significant if:

- ❖ negative environmental effects would disproportionately impact minority and/or low-income populations.

4.19.1 Alternative I: East/West

4.19.1.1 Impacts

This alternative would require that the residents in the area relocate. Relocation may have financial impacts on these residents. Environmental justice impacts are not expected from this alternative, as there are no disproportionate impacts on minorities or low-income populations.

4.19.1.2 Mitigation

No mitigation is proposed.

4.19.2 Alternative II: East Gate/South

4.19.2.1 Impacts

The environmental impacts under this alternative would be the same as Alternative I, but will affect approximately 150 full and part time residents.

4.19.2.2 Mitigation

No mitigation is proposed.

4.19.3 Alternative III: East Gate

4.19.3.1 Impacts

No one currently lives within the boundaries of this alternative. Impacts to environmental justice are not expected.

4.19.3.2 Mitigation

No mitigation is proposed.