

**ENVIRONMENTAL ASSESSMENT
FOR THE
CONSTRUCTION AND TRAINING USE OF
SACRAMENTO MOUNTAIN VILLAGES,
MCGREGOR RANGE, FORT BLISS, NEW MEXICO**



**US Army Corps
of Engineers®**



Prepared for:

**U.S. Army Forces Command (FORSCOM)
Fort Bliss, Texas**

Prepared by:

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September 2012

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PREPARED FOR:

Team Bliss, G3, FORSCOM, Fort Bliss

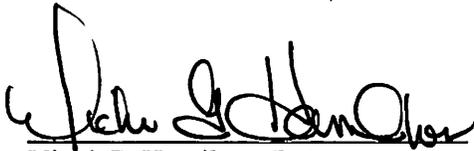


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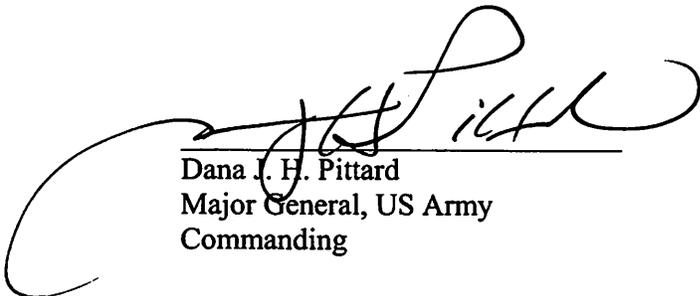
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**FINAL
FINDING OF NO SIGNIFICANT IMPACT**

1.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Proposed Action: Fort Bliss proposes to construct, operate, and maintain mountain village training facilities within Fort Bliss on northern McGregor Range. Two suitable locations have been tentatively selected based on siting criteria, which include favorable terrain that is similar to that found in the Afghanistan theater. Such terrain will provide tactical difficulty; allow for observation by the training units; provide natural obstacles, cover, and concealment; and provide avenues for both high-speed and dismounted approach. The siting criteria also require that the mountain village site(s) be located in an area that provides ease of construction; the ability to avoid or mitigate impacts on eligible cultural resources sites; and the ability to avoid or mitigate impacts on protected faunal or floral species and their habitat.

The purpose of the Proposed Action is to provide realistic mountain village training facilities (adobe mountain villages) on northern McGregor Range. This would provide troop training capabilities that would mimic the current and future operating environment found in Afghanistan. The need for the Proposed Action is to ensure that troops are trained in a realistic manner and are acclimated to village scenarios before they are deployed. The troops need to be trained for tactical situations that deal with the local populace in a realistic setting; in approaching, attacking, and occupying a realistic village; and in encountering opposing forces within a realistic setting with live-fire exercise.

Alternative 1 – No Action Alternative

Under the No Action Alternative, the land use designation within the project areas would not be modified and neither of the proposed mountain villages would be constructed at Fort Bliss. Selection of this alternative would necessarily eliminate any potential environmental effects associated with construction and training use of the proposed villages. However, this alternative would not satisfy the need for additional training infrastructure on Fort Bliss, which is critical in preparing Soldiers for service in present combat theaters.

Alternative 2 – Construction and Operation of Mountain Village in TA-12 (Preferred Alternative)

Under Alternative 2, a mountain village (tentatively named Dabra Kowt) would be constructed in Training Area (TA)-12 of McGregor Range to facilitate training at the Company level and below. The land use designation would be modified within an approximately 1-kilometer off-road zone around the mountain village site to allow for realistic training use of the proposed mountain village and provide for more intensive use than currently allowed. This is the Preferred Alternative for the Proposed Action. The total area for the village would cover approximately 0.4 acre, with an additional acre of probable construction disturbance anticipated around the village. Light, medium, and heavy, wheeled military vehicles (including Strykers) would be allowed to operate off-road within the mountain village off-road zone in order to approach the mountain village from any direction. Tracked vehicles would be prohibited within the mountain village off-road zone. Approximately 868 acres within the mountain village off-road zone could be impacted during training exercises.

Alternative 3 – Construction and Operation of Mountain Village in TA-13

Under Alternative 3, a mountain village (tentatively named Saron) would be constructed in TA-13 of McGregor Range to facilitate training at the Company level and below. The land use designation would be modified within the approximately 1-kilometer off-road zone to allow for realistic training use of the proposed mountain village and provide for more intensive use than currently allowed. The total area for the village would cover approximately 0.6 acre, with an additional acre of probable construction disturbance anticipated around the village. Approximately 780 acres within the 1-kilometer off-road zone around the proposed mountain village site could be impacted during training exercises.

Alternative 4 – Construction and Operation of Mountain Villages in TA-12 and TA-13

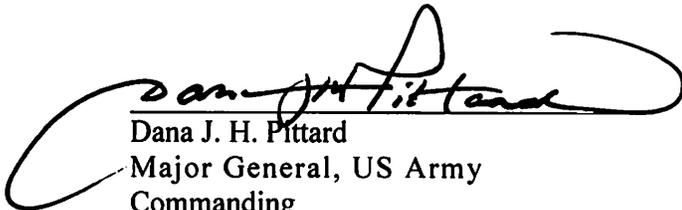
Alternative 4 includes both Alternatives 2 and 3 such that two proposed mountain villages would be built in both TAs 12 and 13. This alternative would provide more flexibility in scheduling training for units at either site, and the potential for more complex training scenarios that may involve both villages simultaneously.

2.0 SUMMARY OF ENVIRONMENTAL RESOURCES AND IMPACTS

Implementation of the Proposed Action with the design, construction, operation, and safety measures would have no significant impacts on land use, soils, biological resources, cultural resources, water resources, air quality, hazardous materials and waste, airspace, transportation and infrastructure, health and safety, and noise on Fort Bliss or the surrounding area. Mitigation measures and best management practices would reduce or eliminate the potential short-term effects on the environment caused by construction and training activities. The cumulative impacts from the construction of training facilities and support infrastructure have been addressed in the *Fort Bliss, Texas and New Mexico Mission and Master Plan Final Supplemental Programmatic Environmental Impact Statement* for which a Record of Decision (ROD) was signed 30 April 2007 and the *Fort Bliss Army Growth and Force Structure Realignment Final Environmental Impact Statement* for which a ROD was signed 8 June 2010. This Environmental Assessment (EA) is tiered to these documents. The Proposed Action would incrementally increase off-road maneuver capabilities not previously analyzed in these documents.

3.0 CONCLUSION

Based on the analysis of the Proposed Action and the design, construction, operation, and safety measures presented in the EA, I conclude that the impacts of the Proposed Action will not significantly affect the human or natural environment of Fort Bliss or the surrounding area. I further conclude that the Proposed Action will impose no direct or indirect effects that cannot be mitigated or that could contribute to cumulative effects requiring preparation of an Environmental Impact Statement, pursuant to the National Environmental Policy Act of 1969 (Public Law 91-190). Therefore, a Finding of No Significant Impact (FNSI) is warranted.


Dana J. H. Pittard
Major General, US Army
Commanding

8 FEB 13
Date

EXECUTIVE SUMMARY

Proposed Action: Fort Bliss proposes to construct, operate, and maintain mountain village training facilities within Fort Bliss on northern McGregor Range. Two suitable locations have been tentatively selected based on siting criteria. These criteria include favorable terrain that is similar to that found in the Afghanistan theater. Such terrain will provide tactical difficulty; allow for observation by the training units; provide natural obstacles, cover, and concealment; and provide avenues for both high-speed and dismounted approach. The siting criteria also require that the mountain village site(s) be located in an area that provides ease of construction; the ability to avoid or mitigate impacts on eligible cultural resources sites; and the ability to avoid or mitigate impacts on protected faunal or floral species and their habitat.

The purpose of the Proposed Action is to provide realistic mountain village training facilities (adobe mountain villages) on northern McGregor Range. This would provide troop training capabilities that would mimic the current and future operating environment found in Afghanistan. The need for the Proposed Action is to ensure that troops are trained in a realistic manner and are acclimated to village scenarios before they are deployed. The troops need to be trained for tactical situations that deal with the local populace in a realistic setting; in approaching, attacking, and occupying a realistic village; and in encountering opposing forces within a realistic setting with live-fire exercise. According to United States (U.S.) Army doctrine (*FM 3-0 Operations*), Soldiers are sometimes required to operate in an environment of persistent conflict where enemy forces attempt to blend into complex operational terrain and use mountain villages to disguise and conceal their activities. Soldiers need training in mountain villages that mimic, to the greatest extent possible, the dynamic real-world, social, and cultural conditions in which they will be placed so they may learn how best to interact with the local populace.

Alternative 1 – No Action Alternative

Under the No Action Alternative, the land use designation within the project areas would not be modified and neither of the proposed mountain villages would be constructed at Fort Bliss for Soldier training. Selection of this alternative would necessarily eliminate any potential environmental effects associated with construction and training use of the proposed villages. None of the training exercises, including on- and off-road vehicle maneuvering, live-fire military activities, and training scenarios, would occur. The immediate areas around the village sites would likewise be left undisturbed. However, this alternative would not satisfy the need for additional training infrastructure on Fort Bliss, which is critical in preparing Soldiers for service in present combat theaters.

Alternative 2 – Construction and Operation of Mountain Village in TA-12 (Preferred Alternative)

Under Alternative 2, a mountain village would be constructed in Training Area (TA)-12 of McGregor Range to facilitate training at the Company level and below. The land use designation would be modified within an approximately 1-kilometer off-road zone around the mountain village site to allow for realistic training use of the proposed mountain village and provide for more intensive use than currently allowed. This is the Preferred Alternative for the Proposed Action. The proposed mountain village (tentatively named Dabra Kowt) layout would have

features typical of an Afghanistan village, including approximately 30 one- and two-storied buildings. The buildings would be spaced into two clusters, with a main street between them that would be the “market area”, and would also have courtyards that leave small “alleys” between buildings beyond the main street. The total area for the village would cover approximately 0.4 acre, with an additional acre of probable construction disturbance around the village. A new access road totaling approximately 4 acres would be constructed. Light, medium, and heavy, wheeled military vehicles (including Strykers) would be allowed to operate off-road within the mountain village off-road zone in order to approach the mountain village from any direction. Tracked vehicles would be prohibited within the mountain village off-road zone. Approximately 868 acres within the mountain village off-road zone could be impacted during training exercises.

Alternative 3 – Construction and Operation of Mountain Village in TA-13

Under Alternative 3, a mountain village would be constructed in TA-13 of McGregor Range to facilitate training at the Company level and below. The land use designation would be modified within the approximately 1-kilometer off-road zone to allow for realistic training use of the proposed mountain village and provide for more intensive use than currently allowed. The proposed mountain village in TA-13 (tentatively named Saron) would have approximately 30 total buildings, some of which would be multi-storied. The buildings would be spaced into two major clusters. The total area for the village would cover approximately 0.6 acre, with an additional acre of probable construction disturbance around the village. Approximately 780 acres within the mountain village off-road zone around the proposed mountain village site could be impacted during training exercises.

Alternative 4 – Construction and Operation of Mountain Villages in TA-12 and TA-13

Alternative 4 includes both Alternatives 2 and 3 such that two proposed mountain villages would be built in both TA-12 and TA-13. The total impacted area due to construction would be approximately 1 acre for the two villages, with up to 2 acres of probable disturbance around the village sites and 4 acres for the access road in TA-12 for a total of 7 acres. Approximately 1,648 acres total within the off-road zones around the village sites could be impacted during training exercises. This alternative would provide more flexibility in scheduling training for units, and the potential for more complex training scenarios that may involve both villages simultaneously.

Environmental Consequences

The Proposed Action with specified design, construction, operation, and safety measures would have no long-term, negative impacts on the environment. Table ES-1 describes the potential effects of the Proposed Action. Mitigation measures and best management practices (BMP) would reduce or eliminate the potential short-term effects on the environment caused by construction and training activities. Cumulative impacts of recent U.S. Army initiatives for mandated expansion and construction activities at Fort Bliss are discussed in the *Fort Bliss, Texas and New Mexico Mission and Master Plan Final Supplemental Programmatic Environmental Impact Statement* for which a Record of Decision (ROD) was signed 30 April 2007 and the *Fort Bliss Army Growth and Force Structure Realignment Final Environmental Impact Statement* (GFS EIS) for which a ROD was signed 8 June 2010. The analysis within this Environmental Assessment (EA) will focus on impacts additional to the existing environment, which includes the military mission and its environmental impact as described in the GFS EIS. This EA is tiered to both EISs.

**Environmental Assessment for the Construction and Training Use of
Sacramento Mountain Villages, McGregor Range, Fort Bliss, New Mexico**

Table ES-1. Potential Effects of the Proposed Action

Resource	Alternative 1 (No Action)	Alternative 2 (Preferred Alternative)	Alternative 3	Alternative 4
Land Use and Aesthetics	No additional impacts on land use or aesthetics would occur.	The proposed mountain village is located in a Bureau of Land Management (BLM)-designated grazing area impacting approximately 5.4 acres out of the 270,000 acres (<0.01 percent) of available grazing area on McGregor Range. Grazing management activities and recreational uses as analyzed in the GFS EIS would continue under this EA. Access would be closed when the area is used by Fort Bliss for training. For safety and operational reasons, the total acreage closed to the public during training would be more than the 5.4 acres immediately surrounding the village and would at least be approximately 868 acres as delineated by the 1-kilometer-radius off-road zone. Total training days per year would not exceed 250, with activities occurring during the day and at night. The existing land use designation for the proposed mountain village site and off-road zone in TA-12 would need to be modified to a proposed land use designation that allows for on-road and off-road vehicle maneuvering for light, medium, and heavy, wheeled vehicles, which would allow for Stryker usage. Tracked vehicles would be prohibited from using the area within the mountain village off-road zone. The proposed mountain village is located within a Limited Use Area (LUA). The LUA designation would be removed and reclassified to allow for the construction and training use of the mountain village. Additionally, the proposed mountain village is located in a BLM visual resource management (VRM) area with a Class IV designation; the Preferred Alternative would comply with the classification. Only a very small portion of the village site would be within the viewshed of the Culp Canyon Wilderness Study Area (WSA). Since the mountain village would be within a mountainous area, it would not be very visible and, therefore, would not dominate the view corridor. There would be minimal land use and visual aesthetics impacts from the Preferred Alternative.	The proposed mountain village is located in a BLM-designated grazing area impacting approximately 1.6 acres out of the 270,000 acres (<0.01 percent) of available grazing area on McGregor Range. Grazing management activities and recreational uses as analyzed in the GFS EIS would continue under this EA. Access would be closed when the area is used by Fort Bliss for training. For safety and operational reasons, the total acreage closed to the public during training would be more than the 1.6 acres immediately surrounding the village and would at least be approximately 780 acres as delineated by the 1-kilometer-radius off-road zone. Total training days per year would not exceed 250, with activities occurring during the day and at night. The existing land use designation for the proposed mountain village site and off-road zone in TA-13 would need to be modified to a proposed land use designation that allows for on-road and off-road vehicle maneuvering for light, medium, and heavy, wheeled vehicles, which would allow for Stryker usage. Tracked vehicles would be prohibited from using the area within the mountain village off-road zone. The proposed mountain village is located within a LUA, which would be removed and reclassified to allow for the construction and training use of the mountain village. Additionally, the proposed mountain village is located in a BLM VRM area with a Class IV designation; Alternative 3 would comply with the classification. There would be minimal land use and visual aesthetics impacts from the implementation of Alternative 3.	Impacts on land use and aesthetics would be similar to those under Alternatives 2 and 3. There would be minimal land use and visual aesthetics impacts as a result of the construction and use of both proposed mountain villages.
Soils	No additional impacts on soils or geologic resources would occur.	Approximately 5.4 acres of soils would be disturbed by the mountain village and access road footprint. In addition, up to approximately 868 acres could be impacted within the mountain village off-road zone during training. The Preferred Alternative would result in moderate impacts on soils as a result of training activities.	Approximately 1.6 acres of soils would be permanently disturbed by the mountain village. In addition, up to 780 acres of soils could be impacted within the mountain village off-road zone area during training. Impacts on soils would be similar to those under Alternative 2 and would result in moderate impacts on soils as a result of training activities.	Approximately 7 acres of soils would be permanently disturbed by the mountain villages within TA-12 and TA-13, and up to 1,648 acres of soil could be impacted within the mountain villages' off-road zones during training. Impacts on soils would be similar to those listed under Alternatives 2 and 3. There would be moderate impacts on soils as a result of the construction and use of both proposed mountain villages.
Surface Water	No additional impacts on surface water would occur.	An arroyo near the proposed mountain village would be minimally impacted by the construction of the access road, but the road would be designed with culverts or low-water crossings to allow continued water flow. The construction of the proposed access road along and within the arroyo could result in increased sedimentation within the arroyo. A Stormwater Pollution Prevention Plan (SWPPP) would be required. BMPs per the SWPPP would be utilized to control temporary fugitive dust and erosion during clearing and construction. There would be minimal impacts on surface water from the Preferred Alternative.	Impacts on surface water would be similar to, but less than, those under Alternative 2 because the proposed site is located further away from existing arroyos and no arroyo under Alternative 3 would be directly impacted by project construction.	Impacts on surface water would be similar to those under Alternatives 2 and 3. There would be minimal impacts on surface water as a result of the construction and use of both proposed mountain villages.
Groundwater	No additional impacts on groundwater would occur.	Indirect impacts on groundwater quality could occur from compaction of soils and decreased percolation to groundwater related to construction activities and maneuver training. Impacts on groundwater would be negligible as a result of the Preferred Alternative.	Impacts would be similar to those under Alternative 2. Impacts would be negligible.	Impacts on groundwater would be similar to those under Alternatives 2 and 3. There would be negligible impacts on groundwater.

**Environmental Assessment for the Construction and Training Use of
Sacramento Mountain Villages, McGregor Range, Fort Bliss, New Mexico**

Table ES-1, continued

Resource	Alternative 1 (No Action)	Alternative 2 (Preferred Alternative)	Alternative 3	Alternative 4
Biological Resources	No additional impacts on vegetation or wildlife would occur.	Under Alternative 2, approximately 5.4 acres of regionally common vegetation would be removed. BMPs per Fort Bliss SWPPP guidance would be utilized during clearing activities. There would be minimal impacts on vegetation under the Preferred Alternative. The Kuenzler hedgehog cactus, which is Federally listed as endangered under the Endangered Species Act (ESA) and also considered endangered by the state of New Mexico, has potential habitat in the region, but no individuals of the species have been detected; therefore, it would not be adversely affected. No other species listed under the ESA would be impacted. The Preferred Alternative could occur in habitat that is utilized by the gray vireo and other bird species protected under the Migratory Bird Treaty Act (MBTA). The gray vireo and other migratory birds would be protected in accordance with the MBTA to include phasing construction around nesting season to the greatest extent practicable, and implementing BMPs to avoid harassing or harming these species.	Under Alternative 3, approximately 1.6 acres of regionally common vegetation would be removed as a result of construction of the proposed mountain village. Impacts on biological resources under Alternative 3 would be similar to those under Alternative 2.	Under Alternative 4, approximately 7 acres of regionally common vegetation would be removed as a result of the construction of both proposed mountain villages. Impacts on biological resources under Alternative 4 would be similar to those under Alternatives 2 and 3.
Cultural Resources	No additional impacts on cultural resources would occur.	According to surveys conducted by Fort Bliss personnel, there are no cultural resources located within the footprint of the proposed mountain village or access road. Two archaeological sites are located outside of the proposed 1.4-acre village site footprint, but within the 868-acre mountain village off-road zone. One archaeological site is recommended not eligible for inclusion in the National Register of Historic Places (NRHP), and implementation of the Preferred Alternative would not result in an adverse effect. The second archaeological site is of undetermined NRHP eligibility and would require further testing to determine whether adverse effects would occur as a result of implementation of the Preferred Alternative. During the implementation of the Preferred Alternative, the site of undetermined eligibility would be delineated with Seibert stakes and avoided by all actions associated with the off-road zone, thereby negating any yet-to-be-determined adverse effects. The Preferred Alternative site is not within the viewshed of a historic district. No adverse effects on cultural resources are expected as a result of the implementation of the Preferred Alternative.	Surveys have determined that no surface archaeological sites eligible for inclusion in the NRHP would be located within the 1.6-acre mountain village footprint and disturbance area. Survey coverage of the 780-acre off-road zone surrounding the proposed village site was limited to 96 percent of the area. Within the area surveyed, 22 archaeological sites were reported, with 18 being ineligible and requiring no further consideration. The four remaining previously reported archaeological sites consist of two recommended eligible for the NRHP and two of undermined eligibility. If Alternative 3 is implemented, these four sites would be delineated using Seibert stakes and avoided by all actions associated with the off-road zone. If avoidance is not possible, a mitigation plan for their treatment would be developed per the Programmatic Agreement. No adverse effects on cultural resources are expected as a result of the implementation of Alternative 3.	Impacts on cultural resources would be similar to those under Alternatives 2 and 3. No adverse effects on cultural resources are expected.
Air Quality	No additional air quality impacts would occur.	Temporary and minor increases in air pollution would occur from the use of construction equipment (combustion emissions) and the disturbance of soils (fugitive dust) during construction of the access road and proposed mountain village. The air emissions from the proposed construction and operational activities do not exceed Federal <i>de minimis</i> thresholds. The impacts on air quality in Otero County from the implementation of Alternative 2 would be negligible.	Impacts on air quality would be similar to those under Alternative 2. The impacts on air quality in Otero County from the implementation of Alternative 3 would be negligible.	Impacts on air quality would be similar to those under Alternatives 2 and 3. The impacts on air quality in Otero County from the implementation of Alternative 4 would be negligible.
Noise	No additional noise impacts would occur.	Neither the noise emissions from the construction activities nor the proposed training activities would impact the Culp Canyon WSA. There is potential that aircraft flying an off-post approach to the mountain village site may annoy those living near the flight tracks. The addition of the proposed mountain village and training use would have little to no noise impact beyond the Fort Bliss boundary. The noise levels from proposed training would be compatible with U.S. Army guidelines, and impacts on the noise environment in the region would be minimal.	Noise emissions associated with Alternative 3 would be similar to those described in Alternative 2. The distances to the sensitive noise receptors are far enough away that noise emissions would only have minimal impacts. Similar to Alternative 2, there is potential that aircraft flying an off-post approach to the proposed mountain village site may annoy those living near the flight tracks. Noise emissions associated with construction and military training would attenuate to levels below significant thresholds before entering areas with sensitive noise receptors; therefore, impacts on the noise environment in the region would be minimal.	Noise impacts would be similar to those under Alternatives 2 and 3. The implementation of Alternative 4 would result in minimal impacts on the noise environment.

**Environmental Assessment for the Construction and Training Use of
Sacramento Mountain Villages, McGregor Range, Fort Bliss, New Mexico**

Table ES-1, continued

Resource	Alternative 1 (No Action)	Alternative 2 (Preferred Alternative)	Alternative 3	Alternative 4
Transportation and Infrastructure	No additional impacts on transportation and infrastructure would occur.	Temporary disruptions to traffic would occur during construction. There would be increased traffic loads in the area during construction and training and possible increases in road maintenance activities. There would be minimal impacts on transportation and supporting infrastructure as a result of the implementation of the Preferred Alternative.	Impacts would be similar to those under Alternative 2 and considered minimal.	Impacts under Alternative 4 would be similar to those under Alternatives 2 and 3. While there would be a potential for more military vehicles to use the roadways during training exercises at both village sites, there would still be minimal impacts on transportation and supporting infrastructure as a result of the construction and use of both proposed mountain villages.
Health and Safety	No additional impacts on health and safety would occur.	Live-fire military activities would be scheduled and would occur under controlled conditions. Public recreation use is controlled through access permits by Fort Bliss Range Operations to ensure safety and use compatibility with military activities, and areas designated for recreational use, including the Culp Canyon WSA, would be closed when in use for military training. Minimal impacts on health and safety would be expected as a result of the Preferred Alternative.	Impacts under Alternative 3 would be similar to those under Alternative 2. Minimal impacts on health and safety would be expected as a result of the implementation of Alternative 3.	Impacts under Alternative 4 would be similar to those under Alternatives 2 and 3. Minimal impacts on health and safety would be expected as a result of the construction and use of both proposed mountain villages.
Hazardous Materials and Waste	No additional hazardous materials and waste impacts would occur.	A limited amount of hazardous materials and waste would be used or generated at the proposed mountain village site from maintenance and operational activities, including petroleum, oil, and lubricants (POL). All hazardous wastes would be disposed of according to the Installation Hazardous Waste Management Plan. Minimal hazardous materials and waste impacts would occur as a result of the Preferred Alternative.	Impacts under Alternative 3 would be similar to those under Alternative 2. Minimal hazardous materials and waste impacts would occur as a result of the implementation of Alternative 3.	Impacts under Alternative 4 would be similar to those under Alternatives 2 and 3. Minimal hazardous materials and waste impacts would occur as a result of the construction and use of both proposed mountain villages.
Airspace Operations	No additional impacts on airspace operations would occur.	There would be no change in the airspace designation. To minimize airspace conflicts during training exercises, especially during .50-caliber weapon firing, scheduling would be done through Range Operations - Flight Control. There would be no effect on public airspace since all airspace within McGregor Range is classified as military airspace. The impacts on airspace operations would be minimal.	Impacts would be similar to those under Alternative 2. The impacts on airspace operations would be minimal.	Impacts under Alternative 4 would be similar to those under Alternatives 2 and 3. Minimal impacts on airspace operations would occur as a result of the construction and use of both proposed mountain villages.
Wildland Fire	No additional wildland fire impacts would occur.	All land within the footprint of the mountain village will be cleared and grubbed. Therefore, the risk of wildland fire at the proposed mountain village site on TA-12 would be low. In addition, the type and amount of vegetation that is found near the site would have little potential to be a fuel source for a wildland fire. The wildland fire impacts would be negligible.	The amount of vegetation located at the proposed mountain village site in TA-13 is greater than in TA-12; therefore, a fuel reduction thinning project would be required for the area around the proposed mountain village. After the implementation of this procedure, the wildland fire impacts under Alternative 3 would be negligible.	Impacts under Alternative 4 would be similar to those under Alternatives 2 and 3. Negligible wildland fire impacts would occur as a result of the construction and use of both proposed mountain villages.

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SECTION 1.0
PURPOSE AND NEED FOR THE PROPOSED ACTION



1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 Introduction

Fort Bliss Army Reservation is an active training facility located in El Paso, Texas, and the south-central area of New Mexico. Fort Bliss is approximately 1.2 million acres in size and consists of a cantonment area, Biggs Army Airfield, and the Fort Bliss Training Complex (FBTC). The FBTC is separated into three geographic areas: the South Training Area in El Paso, Texas; the Doña Ana Range-North Training Area in Doña Ana and Otero counties, New Mexico; and McGregor Range in Otero County, New Mexico. The FBTC is further divided into numbered training areas (TA) in order to manage and schedule the different training missions (Figure 1-1). Fort Bliss has been the home of the United States (U.S.) Army Air Defense Artillery Center.

Fort Bliss has recently been expanding its mission due to Base Closure and Realignment (BRAC) mandates and Army Transformation and Army Growth Initiatives, and its mission is transitioning from supporting the Army's Air Defense Artillery training to a major mounted training facility that supports Brigade Combat Teams (BCTs) under Forces Command (FORSCOM). Fort Bliss is now the home of the U.S. Army 1st Armored Division. Fort Bliss has become a training platform for multiple units deploying to Afghanistan and is a focal point for the U.S. Army as a major installation for training Soldiers for combat readiness.

As part of its transition to supporting BCTs under BRAC, Fort Bliss has constructed or plans to build several realistic urban villages that mimic those found in Afghanistan to be used for training of Soldiers for deployment. These villages are located in desert, dune-land areas where such land use has been programmatically analyzed in the *Fort Bliss, Texas and New Mexico Mission and Master Plan Final Supplemental Programmatic Environmental Impact Statement* (SEIS), for which a Record of Decision (ROD) was signed 30 April 2007, and the *Fort Bliss Army Growth and Force Structure Realignment Final Environmental Impact Statement* (GFS EIS), for which a ROD was signed 8 June 2010. These documents analyzed the potential and cumulative impacts of BRAC mission expansion and associated land use changes at Fort Bliss, including the military use of northeast McGregor Range for up to 256 days per year.

Fort Bliss presently does not have any realistic mountain village training facilities; however, northern McGregor Range (north of New Mexico (NM) Highway 506) contains mountainous areas similar to those found in Afghanistan. The previously mentioned EIS documents approved land use changes on northern McGregor Range that allow for on-road vehicle maneuvering, off-road vehicle maneuvering with wheeled vehicles within 500 meters of each side of existing roads and within less than 30 percent grade topography, dismounted (foot) maneuvering, aircraft operations, and live-fire exercises with small arms fire to include .50-caliber sniper and machine gun firing. An environmental assessment (EA) is required to accommodate a change in the land use designation to allow for the construction and training use of mountain village training facilities. The analysis within this EA will focus on impacts additional to the existing environment, which includes the military mission and its environmental impact as described in the GFS EIS. Hence, this EA would be tiered to the two previous EISs.

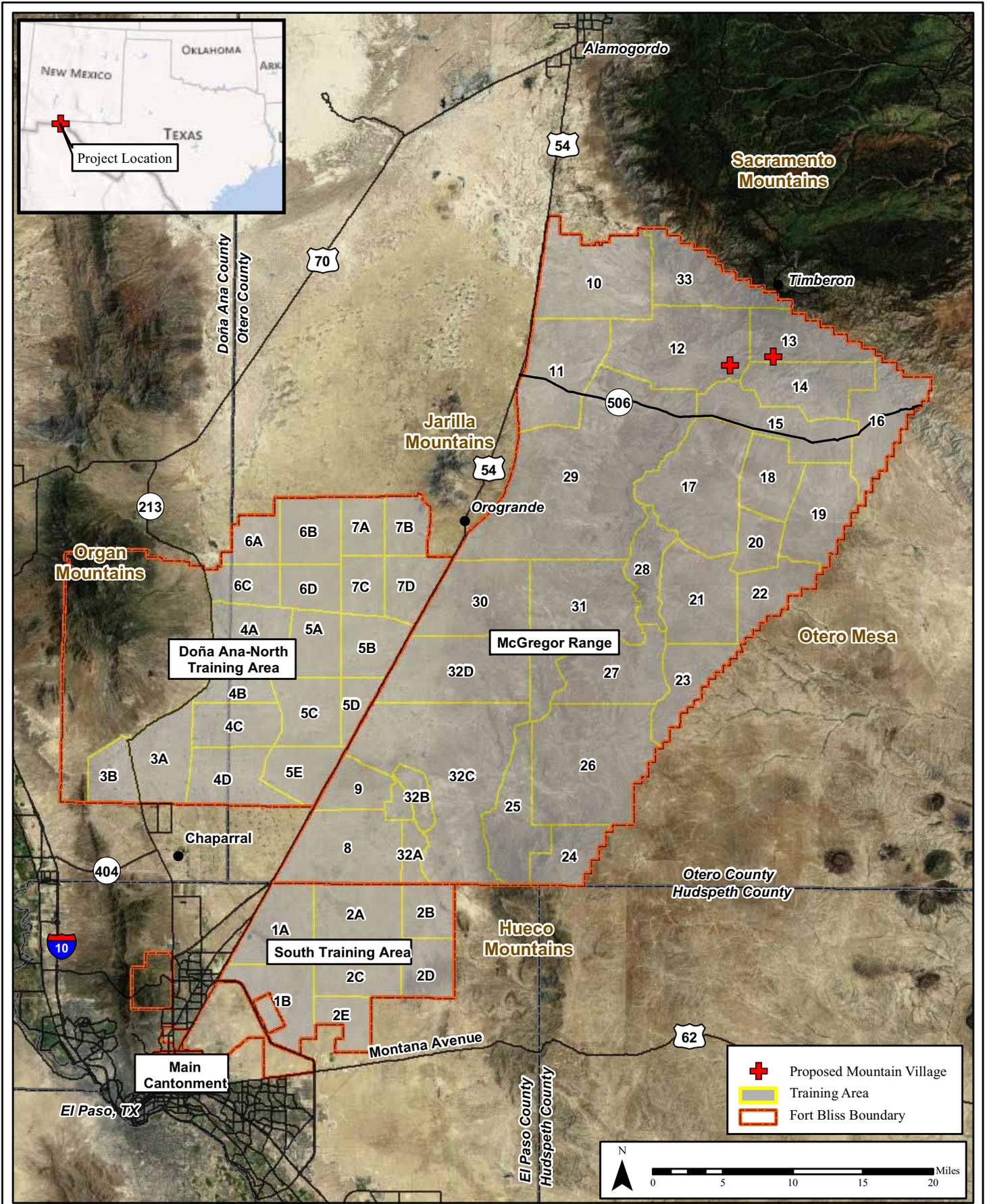


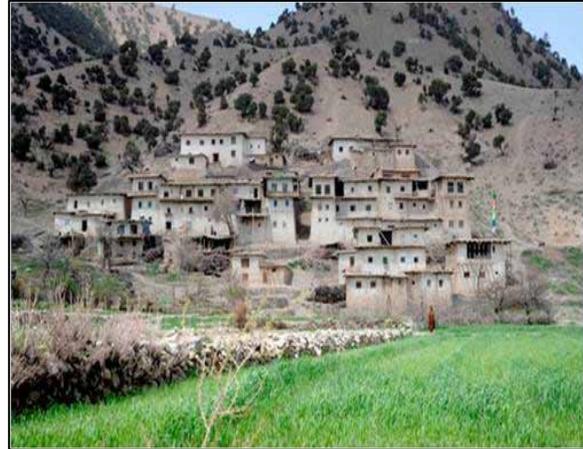
Figure 1-1: Fort Bliss Vicinity Map

1.2 Purpose and Need for the Proposed Action

The purpose of the Proposed Action is to provide realistic mountain village training facilities (adobe mountain villages) on northern McGregor Range (Photograph 1-1) in order to facilitate training in a realistic setting. This would provide troop training capabilities that would mimic the current and future operating environment found in Afghanistan (Photograph 1-2). A modification of the existing military land use designation is necessary in order to meet the purpose and need for the Proposed Action.



Photograph 1-1. Example of Mountainous Terrain on Northern McGregor Range



Photograph 1-2. Example of Typical Mountain Village Found within Afghanistan

The need for the Proposed Action is to ensure that troops are trained in a realistic manner and are acclimated to village scenarios before they are deployed. The troops need to be trained for tactical situations that deal with local populace in a realistic setting; in approaching, attacking, and occupying a realistic village; and in encountering opposing forces within a realistic setting with live-fire exercise. According to U.S. Army doctrine (*FM 3-0 Operations*), Soldiers are sometimes required to operate in an environment of persistent conflict where enemy forces attempt to blend into complex operational terrain and use mountain villages to disguise and conceal their activities. Soldiers need training in mountain villages that mimic, to the greatest extent possible, the dynamic real-world, social, and cultural conditions in which they will be placed so they may learn how best to interact with the local populace.

1.3 Scope and Content of the Analysis

The EA will identify, document, and evaluate the potential environmental effects of the construction, training use, and maintenance of mountain village training facilities on McGregor Range. This analysis will focus on impacts additional to the existing environment. The existing environment includes the military mission and its environmental impact as noted in the GFS EIS. It will be prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969 (Public Law [PL] 91-190) and the President's Council on Environmental Quality (CEQ) Regulations outlined in 40 Code of Federal Regulations (CFR) parts 1500 – 1508 and 32 CFR Part 651 – Environmental Analysis of Army Actions. NEPA is a Federal environmental law establishing procedural requirements for all Federal agency actions. It directs

the U.S. Army to disclose the environmental effects of its proposed activities at Fort Bliss to the public and officials who must make decisions regarding the proposal.

1.4 Decision(s) To Be Made

The proponent for the action is Team Bliss, G3, FORSCOM, Fort Bliss. The U.S. Army Corps of Engineers, Tulsa District, and the U.S. Army, G3, FORSCOM, Fort Bliss, are the lead agencies responsible for the completion of the EA. One or more of the alternatives analyzed in the EA will be selected for the Proposed Action. If no significant environmental impacts are determined based on the evaluation of impacts in the EA, a Finding of No Significant Impact (FNSI) will be signed by the Commanding General. If it is determined that the Proposed Action will have significant environmental impacts, the action will either not be undertaken, or a Notice of Intent to prepare an EIS will be published in the *Federal Register*.

1.5 Public Participation

The Army invites public participation in the NEPA process to promote open communication and enable better decision making. The EA and draft FNSI were made available to the public for a 30-day comment period, in accordance with NEPA. The Notice of Availability for public review of the EA and draft FNSI was published in the *El Paso Times*, *Alamogordo Daily News*, and *Las Cruces Sun-News* newspapers on 29 July 2012 (Appendix A). The distribution of the EA and draft FNSI included local libraries and any agencies, organizations, and individuals who expressed interest in the project (Appendix A). Comments on the EA and draft FNSI were received from the Bureau of Land Management (BLM) - Las Cruces District Office, State of New Mexico Department of Game and Fish, and New Mexico State Historic Preservation Office. Their comments and the Army's responses, if applicable, are included in Appendix A.

SECTION 2.0
DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Fort Bliss proposes to modify the land use designation within certain areas on northern McGregor Range, Fort Bliss, in order to construct, operate, and maintain mountain village training facilities. Two suitable locations for the construction and training use of mountain village training facilities on northern McGregor Range have been tentatively selected based on the following siting criteria:

- Favorable terrain that is similar to that found in the Afghanistan theater, which would:
 - Provide tactical difficulty
 - Allow for observation by the training units
 - Provide natural obstacles, cover, and concealment
 - Provide avenues for both high-speed and dismounted approach
- Located in an area that provides ease of construction
- Ability to avoid or mitigate impacts on eligible cultural resources sites
- Ability to avoid or mitigate impacts on protected faunal or floral species and their habitat

In accordance with CEQ regulations (40 CFR 1502.14) and 32 CFR Part 651, the EA must identify and describe all reasonable alternatives to the Proposed Action, including the No Action Alternative. Besides the No Action Alternative, this EA will discuss three alternative actions involving two locations for the proposed mountain villages.

2.1 Alternative 1 – No Action Alternative

Under the No Action Alternative, the land use designation within the project areas would not be modified and neither of the proposed mountain villages would be constructed at Fort Bliss for Soldier training. Selection of this alternative would necessarily eliminate any potential environmental effects associated with construction and training use of the proposed villages. The training exercises including on- and off-road vehicle maneuvering, live-fire military activities, and all training scenarios would not occur. The immediate areas around the village sites would likewise be left undisturbed. However, this alternative would not satisfy the need for additional training infrastructure on Fort Bliss, which is critical in preparing Soldiers for service in present combat theaters.

2.2 Alternative 2 – Construction and Training Use of Mountain Village in Training Area 12 (Preferred Alternative)

Under Alternative 2, the proposed mountain village would be constructed in TA-12 of McGregor Range to facilitate training at the Company level and below (Photograph 2-1). The land use designation would be modified within an approximately 1-kilometer off-road zone around the mountain village site to allow for realistic training use of the proposed mountain village and provide for more intensive use



Photograph 2-1. Location of Proposed Mountain Village Site in TA-12

than currently allowed. This is the Preferred Alternative for the Proposed Action. Figure 2-1 shows the location of the site within TA-12.

The area for the village would cover approximately 0.4 acre, with an additional acre of probable construction disturbance anticipated around the village for a total of 1.4 acres. The proposed mountain village (tentatively named Dabra Kowt) layout would have features typical of Afghanistan villages, including approximately 30 one- and two-storied buildings. The buildings would be spaced into two clusters with a main street between them that would be the “market area”. The buildings would also have courtyards that leave small “alleys” between buildings beyond the main street. Approximately 868 acres within the mountain village off-road zone could be impacted during training exercises. Figure 2-2 shows a sketch of the proposed mountain village site in TA-12.

A road leading to the village site would be built using a grader or similar equipment, with possible application of gravel or base course. The road course would follow the existing arroyo near the proposed TA-12 site and include installation of arroyo crossings or culverts at certain points where the road would cross the main stream channel. Figure 2-1 shows the proposed route starting from a point along Culp Canyon Road. This new road would be approximately 0.65 mile long and would permanently disturb approximately 4 acres. The road would facilitate access for vehicles and heavy equipment during village construction and would be used as a ground access route for military vehicles during tactical training events.

An opposing force, platoon-sized contingent (approximately 30 personnel) would inhabit the village acting as combatants and/or villagers. The opposing force personnel may bivouac at the village up to several nights consecutively. The village would receive electrical power in the future from portable diesel generators and/or solar panel arrays. Portable latrines would be installed in support of and only during continuous operations. Live animals, such as cattle, sheep, goats, pigs, chickens, and dogs may be used as part of the village scene for added realism. These live animals would be used temporarily during training exercises, but would be confined and then removed following training. Delineation of mock cultivated fields or berms near the village would not be part of this alternative.

As part of this EA, a modification of the land use designation would occur to allow light, medium, and heavy, wheeled military vehicles (including Strykers) to operate off-road to approach the mountain village from any direction within an approximately 1-kilometer off-road zone around the village. Vehicle weight classifications are based upon soil contact pressure as follows: light, 2 kg/cm² or less; medium, more than 2 and less than 5 kg/cm²; heavy, 5 kg/cm² or more (U.S. Army 2010). Driving wheeled or tracked military vehicles on existing roads would be allowed. Tracked vehicles of any classification, however, would be prohibited from maneuvering off-road inside the mountain village off-road zone. Also, the Limited Use Area (LUA) designation would be removed within the mountain village off-road zone to allow for realistic training use of the proposed mountain village and accommodate more intensive use than allowed for in the GFS EIS (see Figure 2-1).

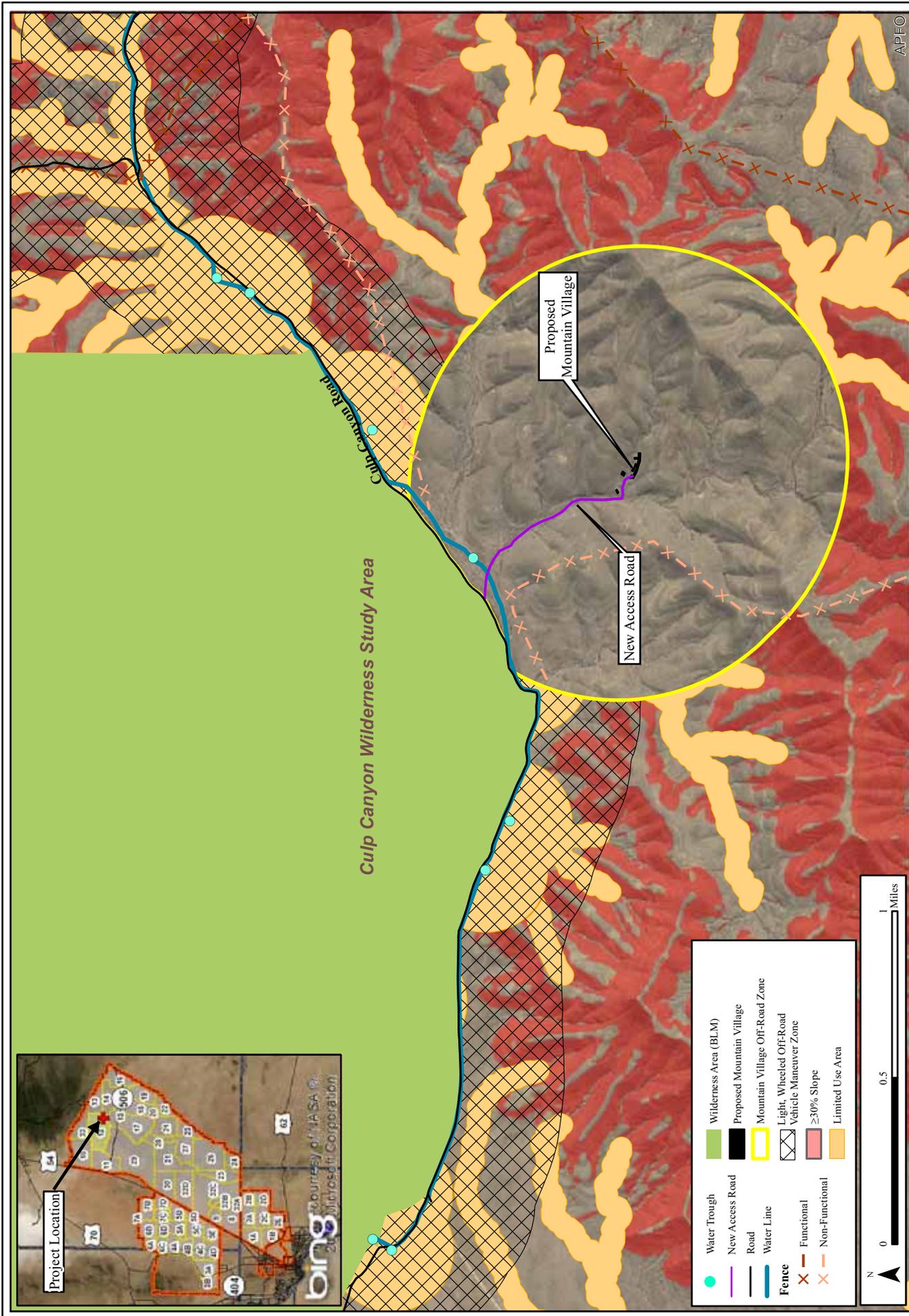


Figure 2-1: Proposed Mountain Village Site in Training Area 12 on McGregor Range

A typical training scenario would involve a company-sized unit (approximately 120 Soldiers) advancing upon the village along the road using light, medium, and heavy, wheeled vehicles. Vehicles likely to be used include all-terrain vehicles (ATV), high-mobility, multipurpose wheeled vehicles (HMMWV), mine-resistant ambush-protected (MRAP) vehicles, MRAP ATVs (MATV), and Strykers (a heavy, wheeled vehicle). There would typically be a total of 7 to 12 Strykers utilized by a unit, of which approximately 2 to 3 would be used for off-road advance to the village. Off-road driving of light, wheeled vehicles (for example, HMMWVs) within 500 meters on either side of existing roads on slopes less than 30 percent was approved for McGregor Range north of Highway 506 in the GFS EIS and would continue under this EA (see Figure 2-1).

The training exercises would not exceed 250 total training days per year, with activities occurring during the day and at night. The company-sized unit would advance along the existing road, where military vehicles would park and establish a position. Mock improvised explosive device (IED) kits may be placed along the entry route roadsides, requiring minor excavations. Live-fire at targets in and around the village would include small-arms weapons no larger than .50-caliber. All rounds would be non-dud-producing. Snipers with rifles up to .50-caliber would fire upon targets from high ground in the area. Door-side gunnery would also be employed from the helicopters using up to .50-caliber rounds. Blanks, ultimate training munitions (paintball rounds), and pyrotechnics would also be used in the vicinity of the mountain village. Certain weapons would be equipped with laser sights, and various obscurants and pyrotechnics, such as smoke grenades and flares, would be deployed as required during the engagement of the opposing force. White phosphorus would not be used.

Air support would include unmanned aircraft systems (UAS), helicopters for transport and overwatch, and fixed-wing aircraft that would provide air support (dry-fire only) in the case of joint operations. There would be two types of helicopter landing zones – one for fast landing and one for fast-roping, where the helicopter does not actually land. Fast-rope zone locations are variable based upon a large flat area being available and the number of rotary-winged assets employed during a particular mission. A 100- by 100-foot (0.23 acre) reinforced concrete helipad would be constructed adjacent to the Culp Canyon Road, within the mountain village off-road zone to allow for helicopter landings. There would be no more than four UH-60s and two CH-47s on the ground at any one time with company-sized air assaults.

2.3 Alternative 3 – Construction and Training Use of Mountain Village in Training Area 13

Under Alternative 3, the proposed mountain village would be constructed in TA-13 of McGregor Range to facilitate training at the Company level and below (Photograph 2-2). The land use designation would be modified within the approximately 1-kilometer off-road zone to allow for realistic training use of the proposed mountain village and



Photograph 2-2. Location of Proposed Mountain Village Site in TA-13

provide for more intensive use than currently allowed. Figure 2-3 shows the location of the site within TA-13.

The proposed mountain village in TA-13 (tentatively named Saron) would have approximately 30 total buildings, some of which would be multi-storied. The buildings would be spaced into two major clusters. The area for the village would cover approximately 0.6 acre, with an additional acre of probable construction disturbance anticipated around the village for a total of 1.6 acres. Approximately 780 acres within the mountain village off-road zone around the village site could be impacted during training exercises. Figure 2-4 shows a sketch of the proposed mountain village site in TA-13.

A 100- by 100-foot (0.23 acre) reinforced concrete helipad would be constructed adjacent to Culp Canyon Road, similar to Alternative 2. As part of a larger battalion-level exercise, a typical scenario would involve a company-sized unit (approximately 120 Soldiers) advancing upon the village along the existing road to a tactical “choke point” where maneuver operations are limited. All other features would be similar to Alternative 2.

2.4 Alternative 4 – Construction and Training Use of Mountain Villages in Training Areas 12 and 13

Alternative 4 includes both Alternatives 2 and 3 such that both proposed mountain villages would be built. The total impacted area due to construction would be approximately 1 acre for the two villages, with up to 2 acres of probable disturbance around the village sites and 4 acres for the access road in TA-12, for a total of 7 acres. Approximately 1,648 acres total within the off-road zones around the village sites could be impacted during training exercises. This alternative would provide more flexibility in scheduling training for units and the potential for more complex training scenarios that may involve both villages simultaneously.

Table 2-1 is a summary of acres that will be impacted by each alternative. It includes a breakdown of each project component (mountain village footprint, off-road area, etc.) and the size in acres that would be impacted by each alternative.

Table 2-1. Summary of Acres Impacted by each Alternative

	Alternative 2 – Mountain Village in TA-12 (Preferred Alternative)	Alternative 3 – Mountain Village in TA- 13	Alternative 4 – Mountain Villages in TA-12 and TA-13 Combined
Mountain Village Footprint (Acres)	0.4	0.6	1.0
Construction Disturbance around the Mountain Village Footprint (Acres)	1.0	1.0	2.0
Total Area for Mountain Village Site Construction including Footprint and Construction Disturbance (Acres)	1.4	1.6	3.0
Access Road (Acres)	4.0	-	4.0
Helipad (Acres)	0.23	0.23	0.23*
Mountain Village Off-road Zone (Acres)	868	780	1,648

*The same helipad would be used for both mountain villages

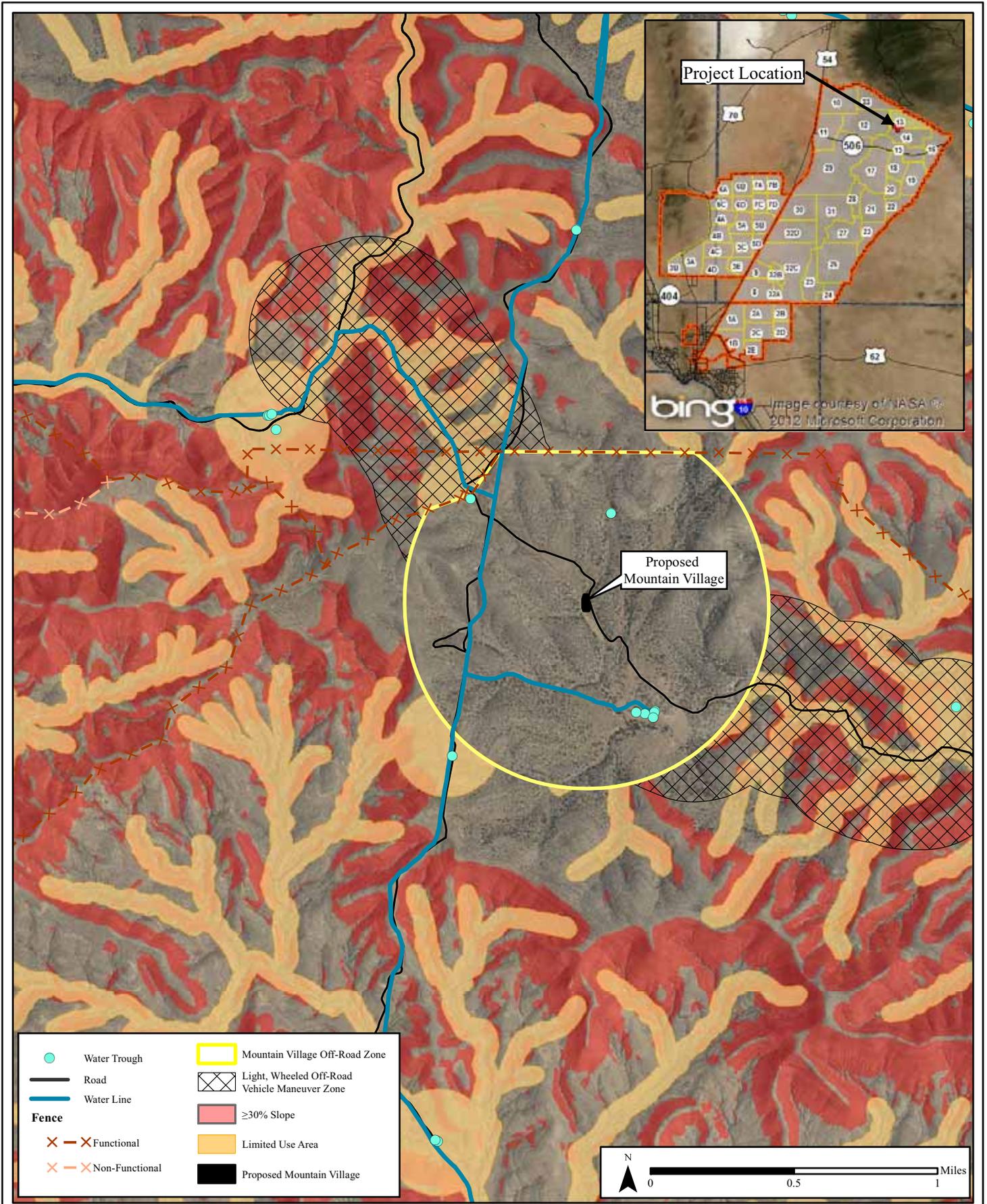
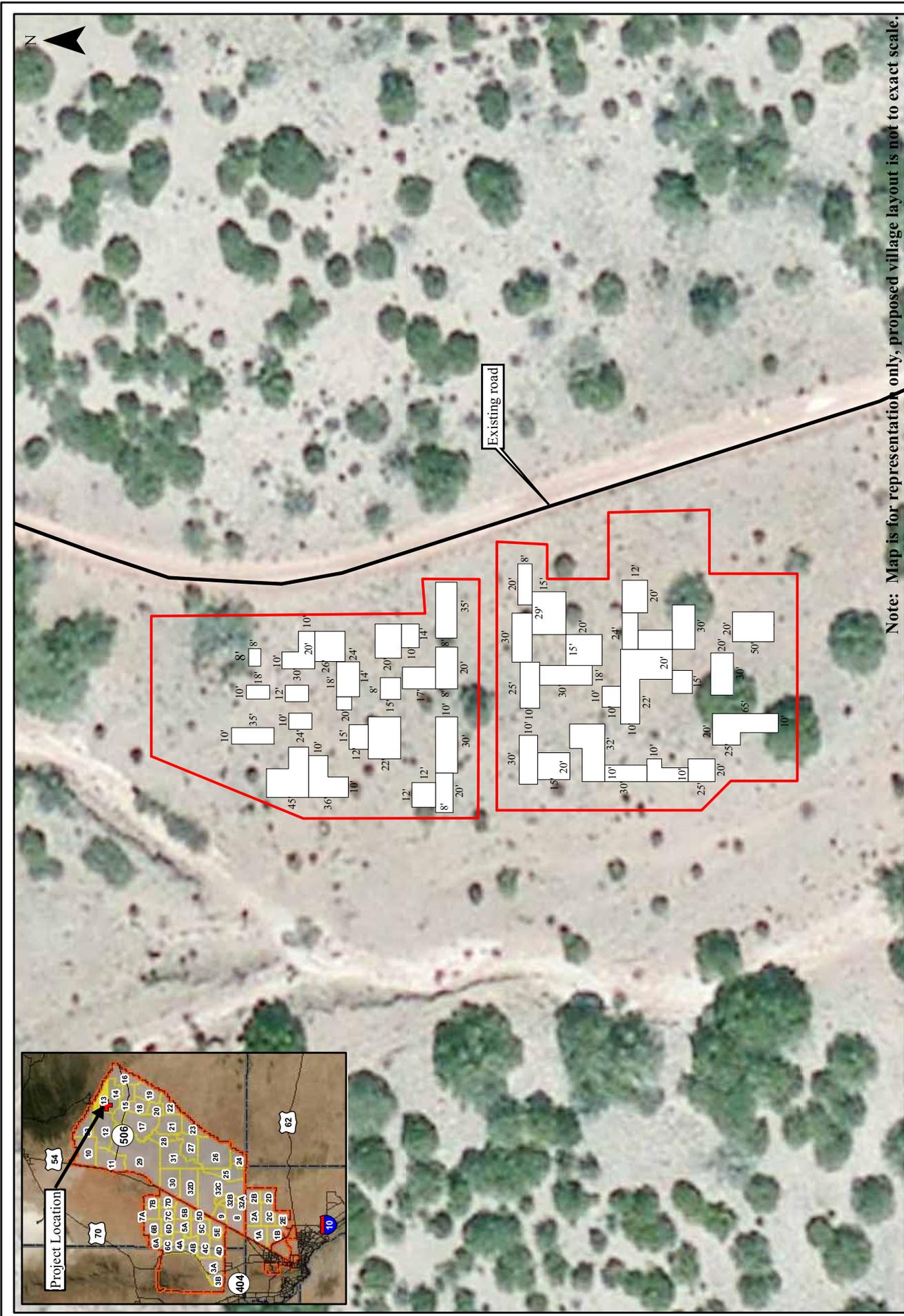


Figure 2-3: Proposed Mountain Village Site in Training Area 13 on McGregor Range



Note: Map is for representation only, proposed village layout is not to exact scale.

Figure 2-4: Aerial View of Sketch of Proposed Mountain Village Site in Training Area 13 on McGregor Range

2.5 Alternatives Eliminated from Further Consideration

Two additional areas were considered for the location of the mountain village(s), but were rejected due to environmental constraints (biological and/or cultural), accessibility (lacking sufficient rugged or remote conditions), or undesirable terrain (lacking correct micro-terrain). Figure 2-5 shows the two proposed mountain village sites in TA-12 and TA-13 along with the two alternative location sites that were deemed unsuitable after early reconnaissance and thus were eliminated from further consideration.

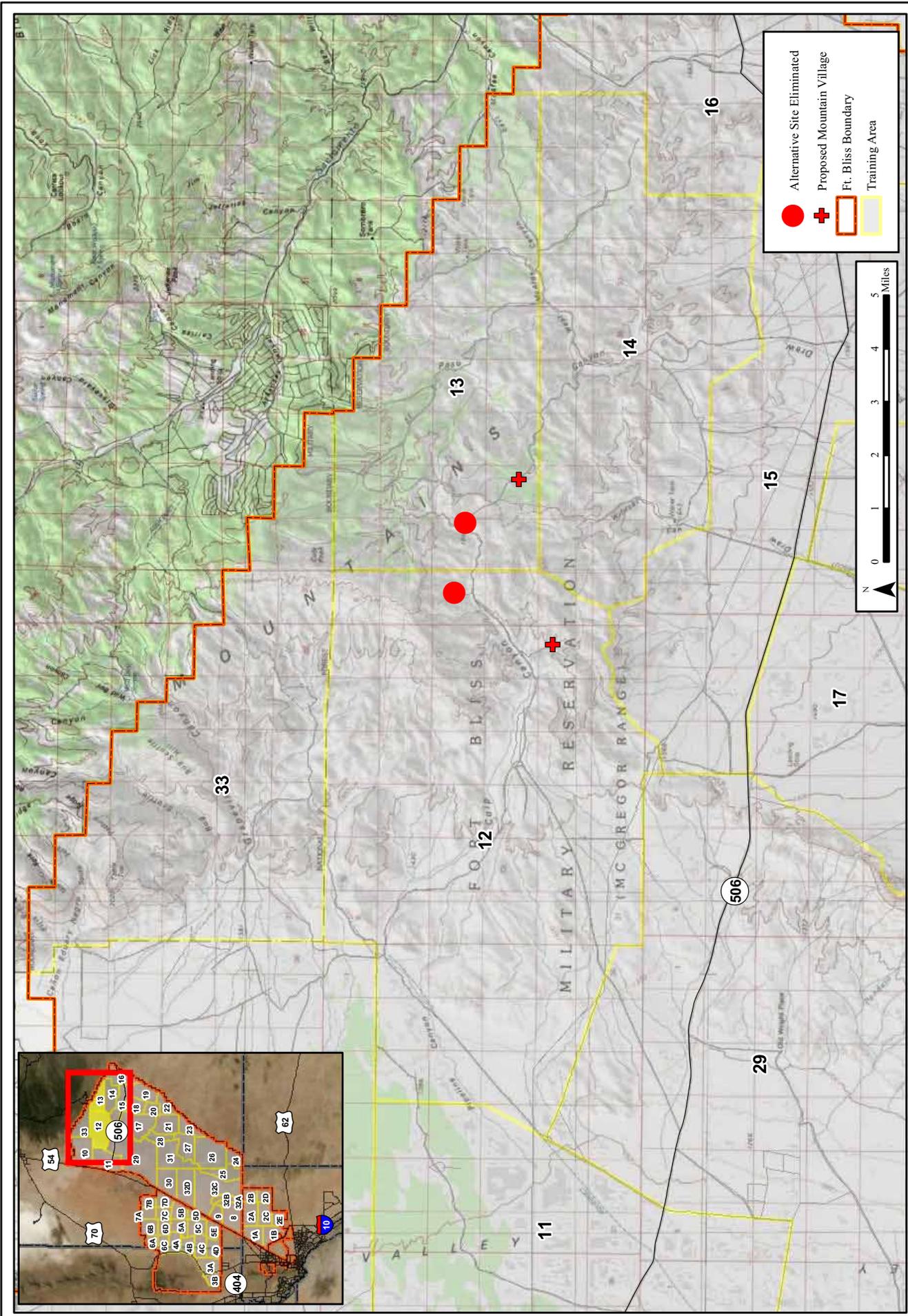
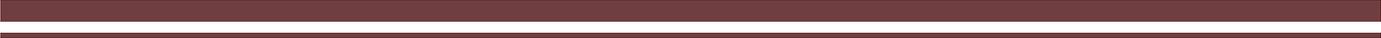


Figure 2-5: Location of the Two Proposed Mountain Village Sites and Two Alternative Mountain Village Sites Eliminated from Further Consideration

SECTION 3.0
AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES



3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section of the EA describes the natural and human environment that exists within the project area and the potential impacts of the Proposed Action and alternatives as outlined in Section 2.0 of this document. Only those resources that have the potential to be affected by any of the alternatives considered are described, as per CEQ guidance (40 CFR 1501.7[3]). Locations and resources with no potential to be affected need not be analyzed. The effects from the Proposed Action include impacts from construction, training use, and maintenance of the mountain village facilities. This includes all areas and lands that might be affected and may change depending on how the natural, cultural, and socioeconomic resources they contain or support are affected.

Valued Environmental Components (VEC) were analyzed for each action alternative to determine which resources would potentially be affected (Table 3-1). VECs are those components that are considered to be important by society and potentially at risk from human activity or natural hazards. These include land use and aesthetics, soils and geologic resources, biological resources, cultural resources, surface water, groundwater, air quality, hazardous materials, airspace, noise, transportation and infrastructure, and construction and safety.

Additionally, some topics are limited in scope due to the lack of direct effect from the proposed project on the resource or because that particular resource is not located within the project area. There would be no potential impacts on socioeconomics and environmental justice due to the remote location of the project. The nearest inhabited area is the rural town of Timberon with approximately 350 residences, located approximately 5 miles north of the project area, adjacent to the northern border of McGregor Range. Therefore, these resources will not be evaluated further in this analysis.

Radiation and electromagnetic spectrum, as well as energy demand from the construction of training ranges and facilities on McGregor Range, were programmatically evaluated in the SEIS and the GFS EIS and are herein incorporated by reference. These documents can be found at <https://www.bliss.army.mil>. The impact of the Proposed Action on these resources will not significantly vary from that analysis, so these resources were excluded from further analysis.

In accordance with NEPA and the CEQ regulations implementing NEPA, the analysis of environmental conditions only addresses those areas and environmental resources with the potential to be affected by any of the alternatives considered, including Alternative 1 (No Action), Alternative 2 (Preferred Alternative), Alternative 3, and Alternative 4. More specifically, this EA will examine the potential for direct, indirect, adverse, or beneficial impacts. This EA will also assess whether such impacts are likely to be long-term, short-term, permanent, or cumulative.

3.1 Land Use and Aesthetics

3.1.1 Affected Environment

The proposed mountain village sites are located on northern McGregor Range, Fort Bliss. McGregor Range has been withdrawn from the public domain for military use through PL 106-

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**Environmental Assessment for the Construction and Training Use of
Sacramento Mountain Villages, McGregor Range, Fort Bliss, New Mexico**

Table 3-1. Summary of Valued Environmental Components Analysis

Resource	Alternative 1 (No Action)	Alternative 2 (Preferred Alternative)	Alternative 3	Alternative 4
Land Use and Aesthetics	No additional impacts on land use or aesthetics would occur.	The proposed mountain village is located in a BLM-designated grazing area impacting approximately 5.4 acres of the 270,000 acres (<0.01 percent) of available grazing area on McGregor Range. Grazing management activities and recreational uses as analyzed in the GFS EIS would continue under this EA. Access would be closed when the area is used by Fort Bliss for training. For safety and operational reasons, the total acreage closed to the public during training would be more than the 5.4 acres immediately surrounding the village and would at least be approximately 868 acres as delineated by the 1-kilometer-radius off-road zone. Total training days per year would not exceed 250, with activities occurring during the day and night. The existing land use designation for the proposed mountain village site and off-road zone in TA-12 would need to be modified to a proposed land use designation that allows for on-road and off-road vehicle maneuvering for light, medium, and heavy, wheeled vehicles, which would allow for Stryker usage. Tracked vehicles would be prohibited from using the area within the mountain village off-road zone. The proposed mountain village is located within a LUA. The LUA designation would be removed and reclassified to allow for the construction and training use of the mountain village. Additionally, the proposed mountain village is located in a BLM visual resource management (VRM) area with a Class IV designation; the Preferred Alternative would comply with the classification. Only a very small portion of the village site would be within the viewshed of the Culp Canyon Wilderness Study Area (WSA). Since the mountain village would be within a mountainous area, it would not be very visible and, therefore, would not dominate the view corridor. There would be minimal land use and visual aesthetics impacts from the Preferred Alternative.	The proposed mountain village is located in a BLM- designated grazing area impacting approximately 1.6 acres of the 270,000 acres (<0.01 percent) of available grazing area on McGregor Range. Grazing management activities and recreational uses as analyzed in the GFS EIS would continue under this EA. Access would be closed when the area is used by Fort Bliss for training. For safety and operational reasons, the total acreage closed to the public during training would be more than the 1.6 acres immediately surrounding the village and would at least be approximately 780 acres as delineated by the 1-kilometer-radius off-road zone. Total training days per year would not exceed 250, with activities occurring during the day and night. The existing land use designation for the proposed mountain village site and off-road zone in TA-13 would need to be modified to a proposed land use designation that allows for on-road and off-road vehicle maneuvering for light, medium, and heavy, wheeled vehicles, which would allow for Stryker usage. Tracked vehicles would be prohibited from using the area within the mountain village off-road zone. The proposed mountain village is located within a LUA, which would be removed and reclassified to allow for the construction and training use of the mountain village. Additionally, the proposed mountain village is located in a BLM VRM area with a Class IV designation; Alternative 3 would comply with the classification. There would be minimal land use and visual aesthetics impacts from the implementation of Alternative 3.	Impacts on land use and aesthetics would be similar to those under Alternatives 2 and 3. There would be minimal land use and visual aesthetics impacts as a result of the construction and use of both proposed mountain villages.
Soils	No additional impacts on soils or geologic resources would occur.	Approximately 5.4 acres of soils would be disturbed by the mountain village and access road footprint. Up to approximately 868 acres could be impacted within the mountain village off-road zone during training activities. This could cause the disruption of soil processes and result in accelerated erosion, increased soil compaction, loss of protective vegetation, and loss of soil productivity. Impacts would depend on the frequency, intensity, total area of disturbance, and amount of bare ground created. No impacts on prime or unique farmland would occur. Best management practices (BMP) per Fort Bliss Stormwater Pollution Prevention Plan (SWPPP) guidance would be utilized to control fugitive dust and erosion during construction. The Preferred Alternative would result in moderate impacts on soils as a result of training activities.	Approximately 1.6 acres of soils would be disturbed by the mountain village footprint. In addition, up to approximately 780 acres could be impacted within the mountain village off-road zone during training activities. Impacts would be similar to those under Alternative 2 and would result in moderate impacts on soils as a result of training activities.	Approximately 7 acres of soils would be permanently disturbed by the mountain village within TA-12 and TA-13 of the McGregor Range, and up to 1,648 acres of soil could be impacted within the mountain village off-road zones during training. Impacts on soils would be similar to those listed under Alternatives 2 and 3. There would be moderate impacts on soils as a result of the construction and use of both proposed mountain villages.
Surface Water	No additional impacts on surface water would occur.	An arroyo near the proposed mountain village would be minimally impacted by the access road, by increasing erosion and sedimentation due to construction within and near the arroyo; however, the road would be designed with culverts or low-water crossings to allow continued water flow. A SWPPP would be required and BMPs per the SWPPP would be utilized to control temporary fugitive dust and erosion during clearing and construction. There would be minimal impacts on surface water from the Preferred Alternative.	Impacts on surface water would be similar to, but less than, those under Alternative 2 because the proposed site is located further away from existing arroyos and no arroyo under Alternative 3 would be directly impacted by project construction.	Impacts on surface water would be similar to those under Alternatives 2 and 3. There would be minimal impacts on surface water as a result of the construction and use of both proposed mountain villages.
Groundwater	No additional impacts on groundwater would occur.	Indirect impacts on groundwater quality could occur from compaction of soils and decreased percolation to groundwater related to construction activities and maneuver training. Impacts on groundwater would be negligible as a result of Alternative 2.	Impacts would be similar to those under Alternative 2 and negligible.	Impacts on groundwater would be similar to those under Alternatives 2 and 3. There would be negligible impacts on groundwater as a result of the construction and use of both proposed mountain villages.

**Environmental Assessment for the Construction and Training Use of
Sacramento Mountain Villages, McGregor Range, Fort Bliss, New Mexico**

Table 3-1, continued

Resource	Alternative 1 (No Action)	Alternative 2 (Preferred Alternative)	Alternative 3	Alternative 4
Biological Resources	No additional impacts on vegetation or wildlife would occur.	Under Alternative 2, approximately 5.4 acres of regionally common vegetation would be removed. BMPs per Fort Bliss SWPPP guidance would be utilized during clearing activities. There would be minimal impacts on vegetation under the Preferred Alternative. The Kuenzler hedgehog cactus, which is Federally listed as endangered under the Endangered Species Act (ESA) and also considered endangered by the state of New Mexico, has potential habitat in the region, but no individuals of the species have been detected; therefore, it would not be adversely affected. No other species listed under the ESA would be impacted. The Preferred Alternative could occur in habitat that is utilized by the gray vireo and other bird species protected under the Migratory Bird Treaty Act (MBTA). The gray vireo and other migratory birds would be protected in accordance with the MBTA to include phasing construction around nesting season to the greatest extent practicable, and implementing BMPs to avoid harassing or harming these species.	Under Alternative 3, approximately 1.6 acres of regionally common vegetation would be removed as a result of construction of the proposed mountain village. Impacts on biological resources under Alternative 3 would be similar to those under Alternative 2.	Under Alternative 4, approximately 7 acres of regionally common vegetation would be removed as a result of the construction of both proposed mountain villages. Impacts on biological resources under Alternative 4 would be similar to those under Alternatives 2 and 3.
Cultural Resources	No additional impacts on cultural resources would occur.	According to surveys conducted by Fort Bliss personnel, no cultural resources are located within the footprint of the proposed mountain village or access road. Two archaeological sites are located outside of the proposed 1.4-acre village site footprint, but within the 868-acre mountain village off-road zone. One archaeological site is recommended not eligible for inclusion in the National Register of Historic Places (NRHP), and implementation of the Preferred Alternative would not result in an adverse effect. The second archaeological site is of undetermined NRHP eligibility and would require further testing to determine whether adverse effects would occur as a result of implementation of the Preferred Alternative. During the implementation of the Preferred Alternative, the site of undetermined eligibility would be delineated with Seibert stakes and avoided by all actions associated with the off-road zone, thereby negating any yet-to-be-determined adverse effects. The Preferred Alternative site is not within the viewshed of a historic district. No adverse effects on cultural resources are expected as a result of the implementation of the Preferred Alternative.	Surveys have determined that no surface archeological sites eligible for inclusion in the NRHP are located within the 1.6-acre mountain village footprint and disturbance area. Survey coverage of the 780-acre off-road zone surrounding the proposed village site was limited to 96 percent of the area. Within the area surveyed, 22 archaeological sites were reported, with 18 being ineligible and requiring no further consideration. The four remaining previously reported archaeological sites consist of two recommended eligible for the NRHP and two of undermined eligibility. If Alternative 3 is implemented, these four sites would be delineated with Seibert stakes and avoided by all actions associated with the off-road zone. If avoidance is not possible, a mitigation plan for their treatment would be developed per the Programmatic Agreement. No adverse effects on cultural resources are expected as a result of the implementation of Alternative 3.	Impacts on cultural resources would be similar to those under Alternatives 2 and 3. No adverse effects on cultural resources are expected.
Air Quality	No additional air quality impacts would occur.	Temporary and minor increases in air pollution would occur from the use of construction equipment (combustion emissions) and the disturbance of soils (fugitive dust) during construction of the access road and the proposed mountain village. The air emissions from the proposed construction and operational activities do not exceed Federal <i>de minimis</i> thresholds. The impacts on air quality in Otero County from the implementation of Alternative 2 would be negligible.	Impacts would be similar to those under Alternative 2. The impacts on air quality in Otero County from the implementation of Alternative 3 would be negligible.	Impacts on air quality would be similar to those under Alternatives 2 and 3. The impacts on air quality in Otero County from the implementation of Alternative 4 would be negligible.
Noise	No additional noise impacts would occur.	Neither the noise emissions from the construction activities nor the proposed training activities would impact the Culp Canyon WSA. There is potential that aircraft flying an off-post approach to the mountain village site may annoy those living near the flight tracks. The addition of the proposed mountain village and training use would have little to no noise impact beyond the Fort Bliss boundary. The noise levels from proposed training would be compatible with U.S. Army guidelines and impacts on the noise environment in the region would be minimal.	Noise emissions associated with Alternative 3 would be similar to those described in Alternative 2. The distances to the sensitive noise receptors are far enough away that noise emissions would only have minimal impacts. Similar to Alternative 2, there is potential that aircraft flying an off-post approach to the proposed mountain village site may annoy those living near the flight tracks. Noise emissions associated with construction and military training would attenuate to levels below significant thresholds before entering areas with sensitive noise receptors; therefore, impacts on the noise environment in the region would be minimal.	Noise impacts would be similar to those under Alternatives 2 and 3. The implementation of Alternative 4 would result in minimal impacts on the noise environment.

**Environmental Assessment for the Construction and Training Use of
Sacramento Mountain Villages, McGregor Range, Fort Bliss, New Mexico**

Table 3-1, continued

Resource	Alternative 1 (No Action)	Alternative 2 (Preferred Alternative)	Alternative 3	Alternative 4
Transportation and Infrastructure	No additional impacts on transportation and infrastructure would occur.	Temporary disruptions to traffic would occur during construction. There would be increased traffic loads in the area during construction and training and possible increases in road maintenance activities as a result of increased traffic during construction and training. The water lines and water troughs located in the area would need to be protected or buried sufficiently deep to avoid damage from off-road maneuvers. There would be minimal impacts on transportation and supporting infrastructure as a result of the Preferred Alternative.	Impacts would be similar to those under Alternative 2 and considered minimal.	Impacts under Alternative 4 would be similar to those under Alternatives 2 and 3. While there would be a potential for more military vehicles to use the roadways during training exercises at both village sites, there would still be minimal impacts on transportation and supporting infrastructure as a result of the construction and use of both proposed mountain villages.
Health and Safety	No additional impacts on health and safety would occur.	Live-fire military activities would be scheduled and occur under controlled conditions. Public recreation use is controlled through access permits by Fort Bliss Range Operations to ensure safety and use compatibility with military activities, and areas designated for recreational use, including the Culp Canyon WSA, would be closed when in use for military training. Minimal impacts on health and safety would be expected as a result of the Preferred Alternative.	Impacts would be similar to those under Alternative 2. Minimal impacts on health and safety would be expected as a result of Alternative 3.	Impacts under Alternative 4 would be similar to those under Alternatives 2 and 3. Minimal impacts on health and safety would be expected as a result of the construction and use of both proposed mountain villages.
Hazardous Materials and Waste	No additional hazardous materials and waste impacts would occur.	<p>A limited amount of hazardous materials and waste would be used or generated at the proposed mountain village site from maintenance and operational activities, including petroleum, oil, and lubricants (POL). Secondary containment for parking and using the fuel trucks for construction and training equipment would be utilized. Drip pans would be provided for stationary equipment to capture any POL accidentally spilled during construction and operation activities or leaks from the equipment.</p> <p>During live-fire training exercises, additional ammunition and explosives of concern would be generated. Current Army protocols for the protection of Army personnel and the public would reduce the safety risks associated with unexploded ordnance (UXO) and would minimize the potential for human or environmental exposure to UXO or lead.</p> <p>Fort Bliss has a Spill Prevention, Control, and Countermeasures Plan (SPCCP) and Installation Spill Contingency Plan (ISCP) in place. These plans establish responsibilities, duties, procedures, and resources to be employed to contain, mitigate, and clean up POL spills. All hazardous wastes would be disposed of according to the Installation Hazardous Waste Management Plan. Minimal hazardous materials and waste impacts would occur as a result of the Preferred Alternative.</p>	Impacts would be similar to those under Alternative 2 and considered minimal.	Impacts under Alternative 4 would be similar to those under Alternatives 2 and 3. Minimal hazardous materials and waste impacts would occur as a result of the construction and use of both proposed mountain villages.
Airspace Operations	No additional impacts on airspace operations would occur.	There would be no change in the airspace designation. To minimize airspace conflicts during training exercises, especially during .50-caliber weapon firing, scheduling would be done through Range Operations - Flight Control. There would be no effect on public airspace since all airspace within McGregor Range is classified as military airspace. The impacts on airspace operations would be minimal.	Impacts would be similar to those under Alternative 2 and considered minimal.	Impacts under Alternative 4 would be similar to those under Alternatives 2 and 3. Minimal impacts on airspace operations would occur as a result of the construction and use of both proposed mountain villages.
Wildland Fire	No additional wildland fire impacts would occur.	All land within the footprint of the mountain village will be cleared and grubbed. Therefore, the risk of wildland fire at the proposed mountain village site on TA-12 would be low. In addition, the type and amount of vegetation that is found near the site would have little potential to be a fuel source for a wildland fire. The wildland fire impacts would be negligible.	The amount of vegetation located at the proposed mountain village site in TA-13 is greater than in TA-12; therefore, a fuel reduction thinning project would be required for the area around the proposed mountain village. After the implementation of this procedure, the wildland fire impacts under Alternative 3 would be negligible.	Impacts under Alternative 4 would be similar to those under Alternatives 2 and 3. Negligible wildland fire impacts would occur as a result of the construction and use of both proposed mountain villages.

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65. As such, McGregor Range is co-managed by the BLM and Fort Bliss for military, recreation, and other uses.

Both mountain village sites are located in areas of relatively undisturbed land north of NM 506. The proposed mountain village footprint within TA-12 is classified by Fort Bliss as Land Use Category C, while the proposed mountain village footprint within TA-13 is classified as Land Use Category B (Figure 3-1) (U.S. Army 2010). The 1-kilometer off-road zone around the village sites includes both Land Use Category B and C. Land Use Category C allows on-road vehicle maneuvering for wheeled or tracked vehicles on existing roads; dismounted (foot traffic) maneuvering and training; aircraft operations; controlled field training exercises; mission support facilities; live fire; safety danger zone/safety footprint; and environmental management. Land Use Category B allows for all the same uses as Category C but also allows for off-road travel with light, wheeled vehicles. Both proposed mountain village sites and the mountain village off-road zones are located within LUAs. LUAs are open to military training activities but are off limits to static vehicle positions, concentrations of vehicles, or digging, to include the following types of operations: all logistical, training unit assembly areas; fuel depots; any digging or excavation; field fortifications; bivouac areas; tactical operations centers; and any other proposed concentrations or vehicles or personnel or ground disturbance (U.S. Army 2010).

Non-military, public use is also allowed in designated areas, provided such use does not conflict with military uses or pose safety risks to the public. Non-military use includes public recreation such as hunting, hiking, picnicking, and bird watching. Public recreation use is controlled through access permits by Fort Bliss Range Operations to ensure safety and use compatibility with military activities. Both village sites are located in a designated recreational use area.

Through PL 106-65, the BLM also manages livestock grazing on approximately 270,000 acres on McGregor Range in 14 grazing units. The proposed mountain village in TA-12 is located within Grazing Unit 3, while the mountain village within TA-13 is located within Grazing Unit 5 (U.S. Army 2010) (Figure 3-1). There are water pipelines, water troughs, and fencing, including functional, non-functional, and semi-functional fencing, located in the areas of both proposed mountain village sites (Figure 3-1). The water lines and fencing are used and maintained by BLM as part of the livestock grazing unit (BLM 2006).

McGregor Range is a composite of three visually different landscapes: the Tularosa Basin, which is visually typical of the Chihuahuan Desert landscape; the Otero Mesa, which is predominantly grassland; and the foothills of the Sacramento Mountains. BLM has established visual resource management (VRM) classifications using criteria such as scenic quality and sensitivity levels (BLM 1986). Activities in a VRM Class IV area (both mountain village sites in TA-12 and TA-13) may dominate the view and be the major focus of viewer attention. In this class, the level of change to characteristic landscape can be high. The BLM objective in a VRM Class IV area is to provide management for activities that require major modifications of the existing character of the landscape; however, efforts should be made to lessen the impacts of these activities (BLM 2006).

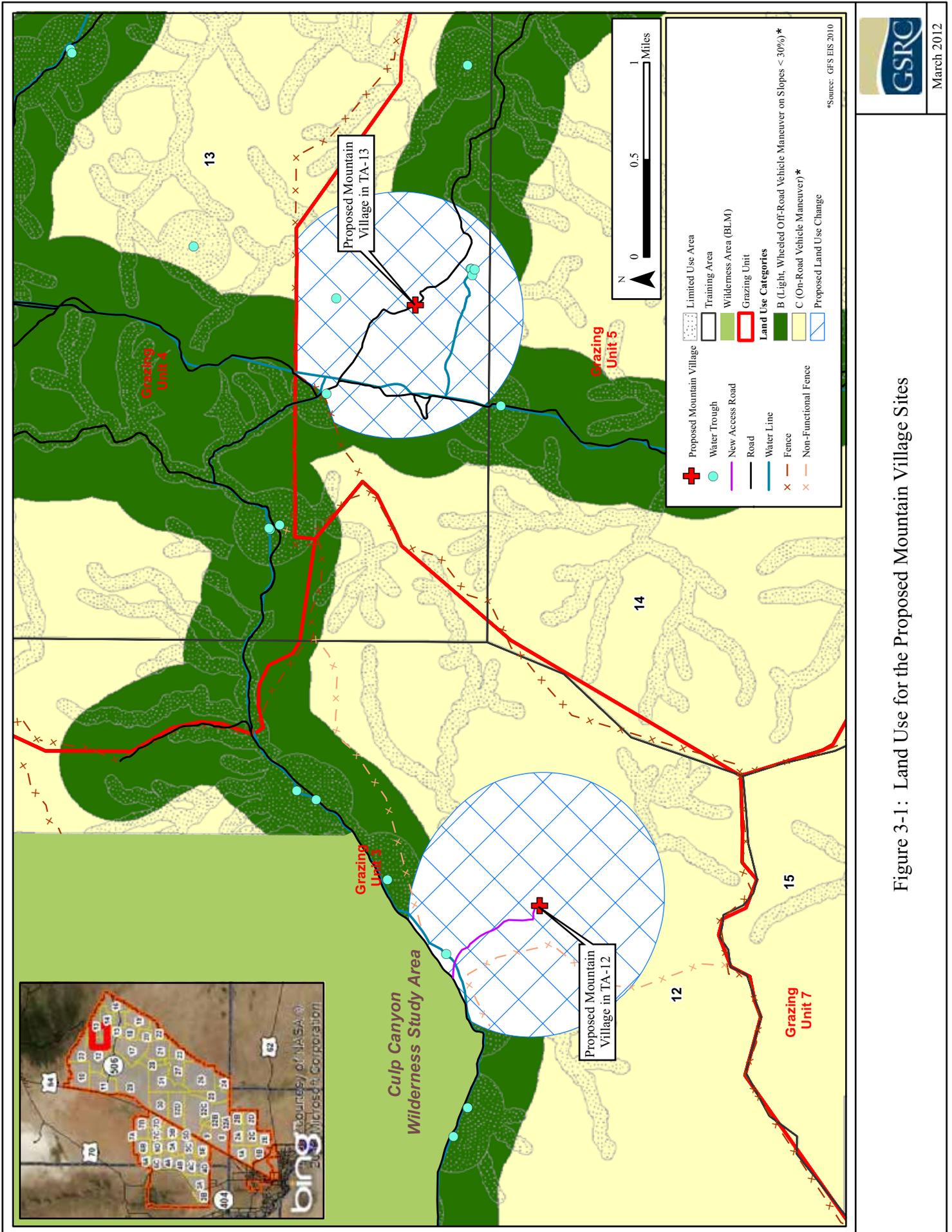


Figure 3-1: Land Use for the Proposed Mountain Village Sites

3.1.2 Environmental Consequences

3.1.2.1 *Alternative 1 (No Action)*

Under Alternative 1, the mountain villages and access road would not be constructed and no training activities or land use designation change associated with the proposed mountain villages would take place; therefore, no impacts on land use or aesthetics additional to the existing environment would occur.

3.1.2.2 *Alternative 2 (Preferred Alternative)*

The existing land use designation for the proposed mountain village site in TA-12 would need to be modified to allow for realistic training use of the proposed mountain village and to provide for more intensive use than allowed for in the GFS EIS. The existing land use designation would be modified to a proposed land use designation that allows for on-road and off-road vehicle maneuvering for light, medium, and heavy, wheeled military vehicles, which would allow for Stryker usage, along with the same military uses described previously for Land Use Categories B and C (see Figure 3-1). This proposed land use change would be within the approximately 1-kilometer off-road zone around the village site. Tracked vehicles of any classification would be prohibited from using the area within the mountain village off-road zone. The site for the proposed mountain village in TA-12 would be located within an existing LUA. The LUA designation would be removed from the mountain village off-road zone and reclassified to allow for the construction and training use of the mountain village (see Figure 3-1). Up to approximately 868 acres could be impacted within the mountain village off-road zone around the village during training exercises with off-road vehicles, including ATVs, HMMWVs, and Strykers, training exercises on foot, and deployment of various weaponry. Much more area may be made temporarily off-limits to the public during exercises, depending upon type and scale of training.

The proposed mountain village site in TA-12 is located in a designated recreational use area and would continue as this land use during periods when military training is not occurring. Public recreation use is strictly controlled by Fort Bliss Range Operations, and areas designated for recreational use are closed when in use for military training. The Culp Canyon Wilderness Study Area (WSA) would also be closed to the public when the mountain village is in use for training.

The proposed mountain village in TA-12 is located within Grazing Unit 3. The footprint of the mountain village and access road would impact approximately 5.4 acres of grazing land from Grazing Unit 3. This loss of area would be considered minimal (less than 0.01 percent) when compared to the overall available grazing area of 270,000 acres designated on McGregor Range. Only non-functional fencing is found near the proposed mountain village in TA-12.

A water line is located along Culp Canyon Road and a water trough is located along the existing access road leading to the proposed village site. The water line would need to be protected or buried sufficiently deep to avoid damage from off-road maneuvers. The water trough would need to be protected and avoided during construction and training exercises. Also, Fort Bliss would ensure that BLM has access to the water troughs, water pipelines, and fencing for repairs and maintenance at least 4 hours, twice per week.

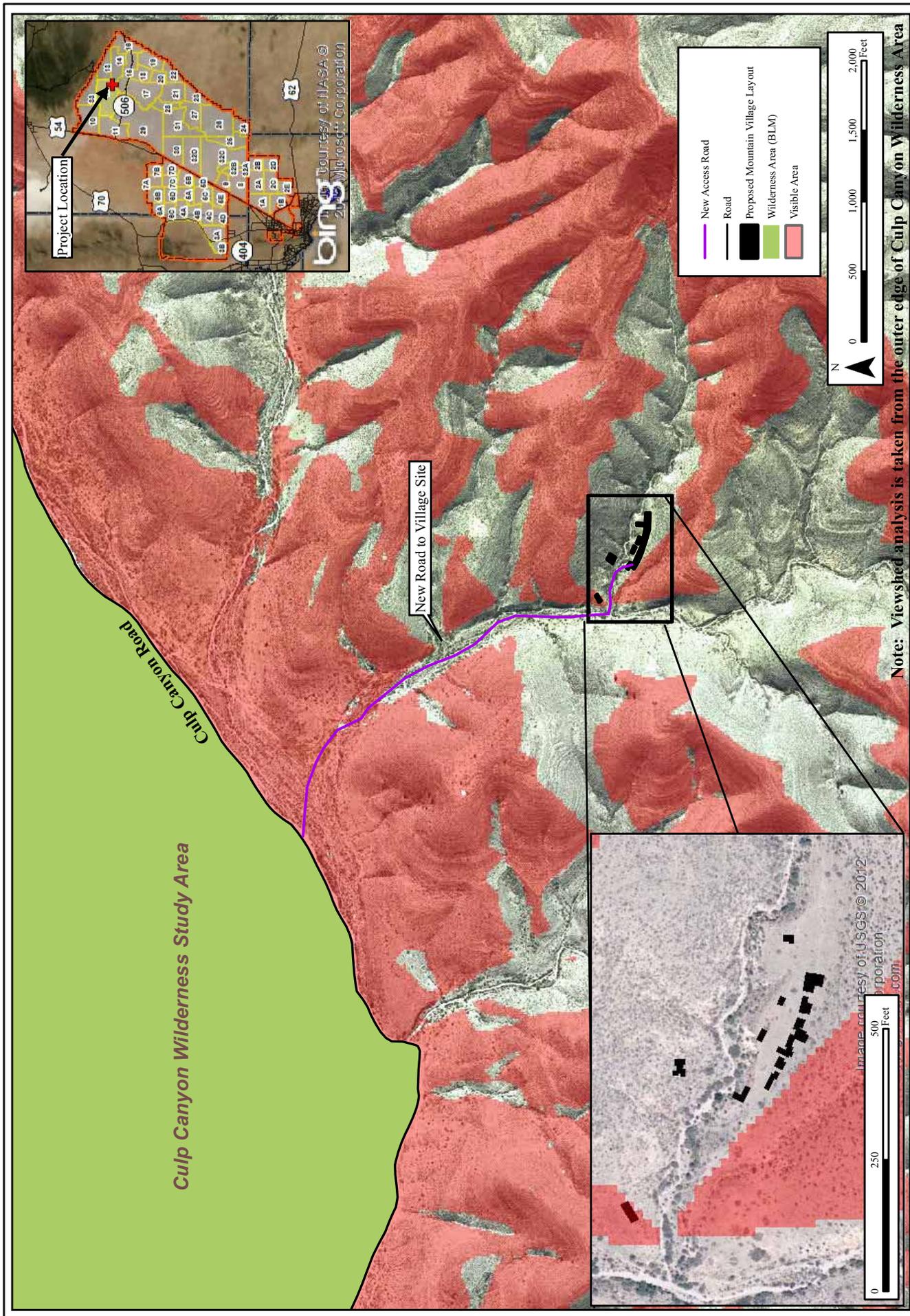
The village site would not be visible to travelers on US 54 or NM 506, residents of Orogrande, or residents of Timberon; however, some activity is likely to be noted during training activities. The area where the proposed mountain village would be located is primarily utilized by Fort Bliss and other personnel, ranchers, and local residents accustomed to seeing military activities and equipment in the area. The Culp Canyon WSA, which has a VRM Class II designation, is located about 0.75 mile north of the proposed site. Only a very small portion of the mountain village would be within the Culp Canyon WSA viewshed (Figure 3-2). The main portion of the village site would not be within the Culp Canyon WSA viewshed. Since the mountain village would be within a mountainous area, it would not be very visible and, therefore, would not dominate the view corridor. The mountain village site would comply with the VRM class designations. The proposed mountain village would not have a greater visual impact beyond what is normal for the area. As such, there would be minimal land use and visual aesthetics impacts from the Preferred Alternative.

3.1.2.3 *Alternative 3*

Similar to Alternative 2, the existing land use designation for the proposed mountain village site in TA-13 would need to be modified to allow for realistic training use of the proposed mountain village and provide for more intensive use than allowed for in the GFS EIS. The land use designation would be modified to a proposed land use designation that allows for on-road and off-road vehicle maneuvering for light, medium, and heavy, wheeled vehicles. This would allow for Stryker usage along with the same military uses described previously for Land Use Categories B and C (see Figure 3-1). However, tracked vehicles of any classification would be prohibited from using the area within the mountain village off-road zone. The site for the proposed mountain village TA-13 would be located within an existing LUA. The LUA designation would be removed from the mountain village off-road zone and reclassified to allow for the construction and training use of the mountain village (see Figure 3-1). Up to approximately 780 acres could be impacted within the mountain village off-road zone around the village during training due to off-road driving with vehicles, including ATVs, HMMWVs, and Strykers, training exercises on foot, and deployment of various weaponry.

The proposed mountain village site in TA-13 is located in a designated recreational use area and would continue as this land use during periods when military training is not occurring. The public recreation areas and the Culp Canyon WSA would be closed to the public when the mountain village is in use for training.

The proposed mountain village in TA-13 is located within Grazing Unit 5. The footprint of the mountain village would impact approximately 1.6 acres of grazing land from Grazing Unit 5. This loss of area would be considered minimal (less than 0.01 percent) when compared to the overall available grazing area of 270,000 acres designated on McGregor Range. Only non-functional fencing is found near the proposed mountain village in TA-13. Functional fencing is located within the off-road zone for the proposed mountain village on TA-13. Therefore, the mountain village off-road zone was modified to avoid impacting the functional fencing (see Figure 2-3). Water lines and water troughs are also located within the mountain village off-road zone. The water lines would need to be protected or buried sufficiently deep to avoid damage from off-road maneuvers. The water troughs would need to be protected and avoided during construction and training exercises.



Note: Viewshed analysis is taken from the outer edge of Culp Canyon Wilderness Area

Figure 3-2: Viewshed Analysis from Culp Canyon Wilderness Area to Proposed Mountain Village Site in Training Area 12 on McGregor Range

The proposed mountain village site would not be visible to travelers on US 54 or NM 506, residents of Orogrande, or residents of Timberon, but some activity is likely to be noted during training activities. However, the area where the proposed mountain village would be located is primarily utilized by Fort Bliss and other personnel, ranchers, and local residents accustomed to seeing military activities and equipment in the area. The mountain village would be visible from the Combat Trail Road and could dominate the view corridor; however, it is located within a VRM Class IV area. The proposed mountain village would not have a greater visual impact beyond what is normal for the area. As such, there would be minimal land use and visual aesthetics impacts from the proposed mountain village in TA-13.

3.1.2.4 *Alternative 4*

Impacts on land use and aesthetics would be similar to those under Alternatives 2 and 3. There would be minimal land use and visual aesthetics impacts as a result of the construction and training use of both proposed mountain villages.

3.2 Soils

3.2.1 Affected Environment

The soils found within the TA-12 area of the McGregor Range village site are mapped as Deama-Rock outcrop complex, 35 to 65 percent slopes, and, therefore, could contain characteristics of either Deama or Rock outcrop series. Deama-Rock outcrop complex, 35 to 65 percent slopes, occur at elevations of 5,500 to 6,800 feet, and the map unit composition is 60 percent Deama and similar soils and 35 percent rock outcrop (Natural Resources Conservation Service [NRCS] 2011). Deama series consist of shallow, well-drained, very stony loam and/or rangeland soils with moderately slow permeability above very slowly permeable limestone rockbed (NRCS 2011). Deama soils occur on hills, ridges, plateaus, and mesas and can have slopes ranging from 0 to 75 percent. Deama-rock outcrop complex soils are susceptible to severe erosion on steeper slopes, and surface runoff is high (U.S. Department of Agriculture [USDA] 1976).

Other soils occurring within the mountain village off-road zone within TA-12 include Altuda-Rock outcrop complex, 15 to 35 percent slopes; Deama-Rock outcrop complex, 15 to 35 percent slopes; Bissett-Rock outcrop complex, 35 to 65 percent slopes; and Sonic, very gravelly fine sandy loam, 1 to 8 percent slopes. Altuda-Rock outcrop rock complex soils occur at elevations of 4,900 to 6,000 feet and consist of 60 percent Altuda (well-drained, cobbly loam soils) and similar soils and 30 percent rock outcrop. Sonic soils are very gravelly fine sandy loam, well-drained soils.

The soil found within the TA-13 area of McGregor Range village site is mapped as Cale silt loam, 2 to 5 percent slopes. Cale silt loam, 2 to 5 percent slopes, is well-drained, silt clay loam soil that occurs on valley floors at elevations of 5,500 to 6,800 feet.

Other soils occurring within the mountain village off-road zone surrounding the proposed mountain village site in TA-13 include Deama-Penalto-Rock outcrop complex, 15 to 35 percent slopes; Deama-Penalto-Rock outcrop complex, 5 to 15 percent slopes; Deama-Penalto-Rock outcrop complex, 35 to 65 percent slopes; Deama-Rock outcrop complex, 15 to 35 percent

slopes; Deama-Rock outcrop complex, 35 to 65 percent slopes; and Deama-Rock outcrop complex, 5 to 15 percent slopes.

The wind erosion hazard on Fort Bliss is high due to the dominance of highly erodible soils. The soil surface is dry, sandy, and sparsely vegetated, especially in areas that have already been impacted by military vehicle traffic. The soils are susceptible to dust generation and dune formation. The Fort Bliss Soil Survey (USDA 2003) provides details on the usability and trafficability ratings of each soil based on the series' characteristics.

3.2.2 Environmental Consequences

3.2.2.1 *Alternative 1 (No Action)*

Under Alternative 1, the mountain villages and access road would not be constructed and no training activities or land use designation change associated with the proposed mountain villages would take place; therefore, no impacts on soils additional to the existing environment would occur.

3.2.2.2 *Alternative 2 (Preferred Alternative)*

Approximately 1.4 acres of Deama-rock outcrop complex soils would be permanently disturbed for the construction of the mountain village site within TA-12 of the McGregor Range. The construction of the new access road will permanently disturb 4 acres of Deama-Rock outcrop complex, 15 to 35 percent slopes, Deama-Rock outcrop complex, 35 to 65 percent slopes, and Sonic very gravelly fine sandy loam, 1 to 8 percent slopes soils. In addition, up to 868 acres of soil could be impacted within the mountain village off-road zone during training due to off-road driving with military vehicles, training exercises on foot, and deployment of various weaponry.

No impacts on prime or unique farmland soils would occur because none occur within the project area. Direct post-construction impacts on soils include the physical disturbance of upper soil layers, including biological crusts, and the disruption of soil processes caused by activities that alter the natural soil layers or result in accelerated erosion, increased soil compaction, loss of protective vegetation, and loss of soil productivity. Impacts would depend on the frequency, intensity, total area of disturbance, and amount of bare ground created. Training activities could increase the potential for soil erosion (water and wind). Indirect effects (e.g., soil compaction) include reduced surface water infiltration, increased surface water runoff, increased wind erosion due to loss of vegetation, and poor plant growth and seed germination. Alternative 2 would result in moderate impacts on soils as a result of construction and training activities.

Soil management at Fort Bliss is coordinated through the Fort Bliss Directorate of Public Works-Environmental Division (DPW-E) and Integrated Training Area Management - Directorate of Plans, Training, Mobilization, and Security (ITAM-DPTMS) to control or mitigate for water or wind erosion, and includes cost-effective technologies such as revegetation, erosion control structures, site hardening, blockades, and dust palliatives to prevent training site degradation, soil erosion, and excessive road damage. Fort Bliss resource management objectives include preventing the deterioration of highly erodible soil resources (U.S. Army 2008b). Construction stormwater permitting is required for this project because the area of disturbance exceeds 1 acre. The Fort Bliss Stormwater Pollution Prevention Plan (SWPPP) requirements would be incorporated into contractor specifications prior to construction. Best Management Practices

(BMP) following Fort Bliss SWPPP guidance (U.S. Army 2011a) would be utilized to control temporary fugitive dust and erosion during construction.

3.2.2.3 *Alternative 3*

Approximately 1.6 acres of Cale silt loam, 2 to 5 percent slopes soils would be permanently disturbed for the construction of the mountain village site within TA-13 of the McGregor Range. In addition, up to 780 acres of soil could be impacted within the mountain village off-road zone area during training. No impacts on prime or unique farmland soils would occur because none occur within the project area. Impacts on soils would be similar to those listed under Alternative 2. There would be moderate impacts on soils as a result of the construction and training use of the proposed mountain village.

3.2.2.4 *Alternative 4*

Approximately 7 acres of soils would be permanently disturbed for the construction of the mountain village sites within TA-12 and TA-13 of the McGregor Range, and up to 1,648 acres of soil could be impacted within the mountain village off-road zone during training. Impacts on soils would be similar to those listed under Alternatives 2 and 3. There would be moderate impacts on soils as a result of the construction and use of both proposed mountain villages.

3.3 Surface Water

3.3.1 Affected Environment

The Region of Influence (ROI) for water resources includes the surface water and groundwater resources that supply Fort Bliss, El Paso, and other communities whose water supply may be affected by activities at Fort Bliss, and includes four watersheds. The surface watersheds in the ROI are Tularosa Valley, Rio Grande-Fort Quitman, Salt Basin, and El Paso-Las Cruces watersheds (U.S. Geological Survey [USGS] 2011). These watersheds fall within the Rio Grande Hydrologic Unit (Region 13). The Rio Grande River is the main surface water feature within the ROI. Other surface water in the area is scarce or seasonal in nature.

TA-12 falls entirely within the Tularosa Valley watershed; TA-13 falls primarily within the Salt Basin watershed. Both watersheds are characterized by ephemeral streams that discharge towards the central area of the Salt Basin. Higher runoff occurs in the Salt Basin due to the higher elevation, particularly in the Sacramento Mountains. The arroyos in the area discharge into the bolson floor during extreme rainfall events or the water is lost to evapotranspiration. No well-defined natural drainage channels are present in the area.

No Federally regulated wetlands or waters of the U.S. as defined by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act of 1972 (CWA) would be impacted by the Proposed Action. The vast majority of arroyo-riparian drainages on Fort Bliss do not qualify as jurisdictional wetlands as defined by USACE (U.S. Army 2009). An arroyo located near the Alternative 2 site would be impacted by the proposed access road leading to the site (Figure 3-3). Within the mountain village off-road zone of Alternative 2, there are approximately 6.19 miles of surface water (e.g., arroyos). The Alternative 3 site has 4.05 miles of surface water within the mountain village off-road zone.

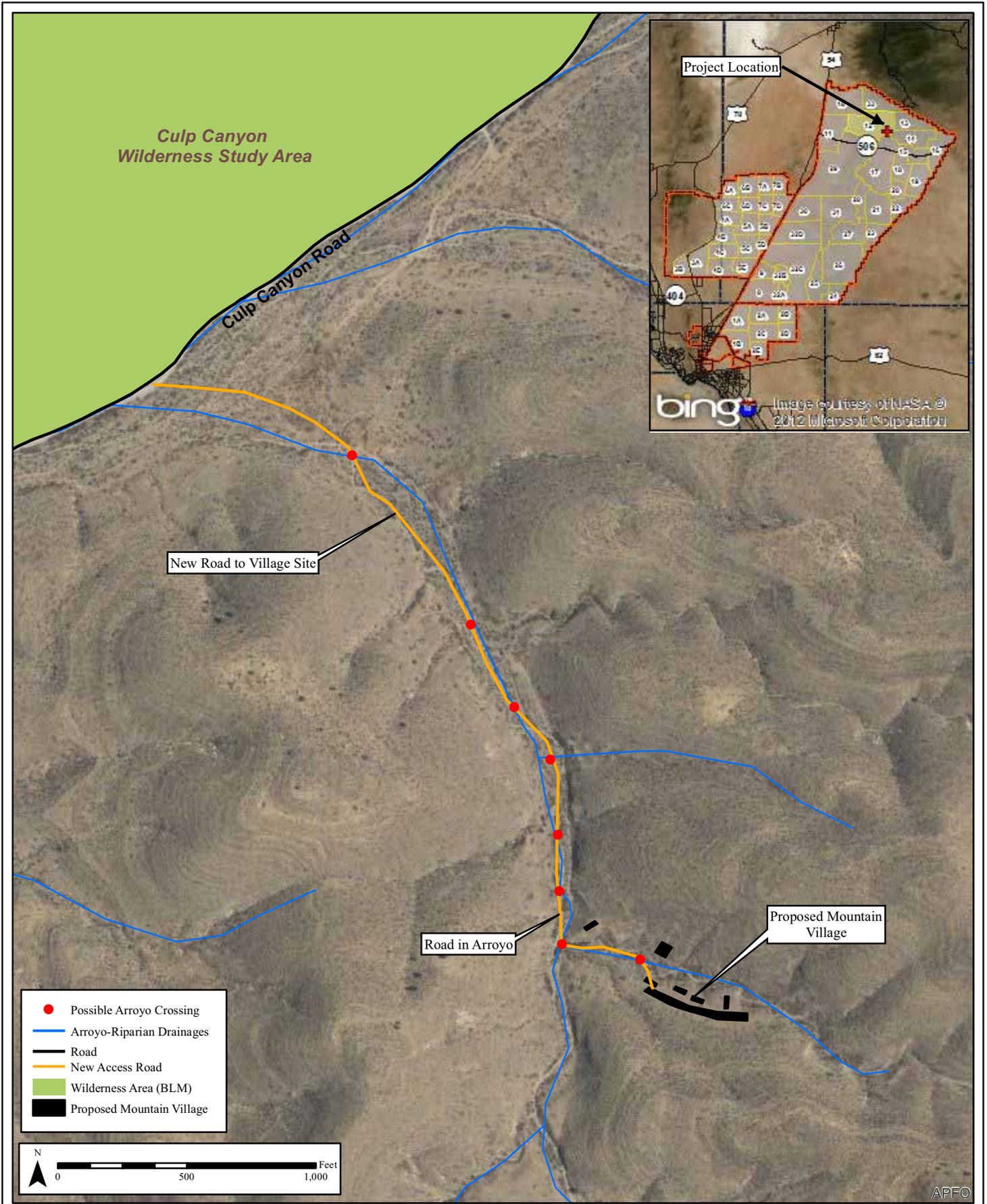


Figure 3-3: Location of Arroyo Near Proposed Mountain Village in TA-12

3.3.2 Environmental Consequences

3.3.2.1 *Alternative 1 (No Action)*

Under Alternative 1, the mountain villages and access road would not be constructed and no training activities or land use designation change associated with the proposed mountain villages would take place; therefore, no impacts on surface water additional to the existing environment would occur.

3.3.2.2 *Alternative 2 (Preferred Alternative)*

Under Alternative 2, the arroyo nearest to the proposed access road would be minimally impacted. The majority of the proposed access road may be constructed within or near the existing arroyo. In addition, the proposed access road would cross the arroyo several times, and the installation of arroyo crossings or culverts at certain points would be required where the road crosses the main stream channel. The road would be designed with low-water crossings to allow water to flow across it and so that losses of arroyo-riparian attributes downstream of the crossing would not occur. All design standards for the design and construction of the access road including draining and sustainability would be adhered to.

A SWPPP following Fort Bliss Construction SWPPP guidance (U.S. Army 2011a) would be developed outlining the BMPs and other measures to be implemented to prevent stormwater runoff during and following construction. New construction for any facilities with a footprint exceeding 5,000 square feet or greater on Fort Bliss property require the design of the operational stormwater drainage aspects of these facilities to comply with the Energy Independence and Security Act Section 438. All designs and specifications must include a written statement of compliance and brief summary description of the technical approach applied to maintain or restore stormwater hydrology to the maximum extent technically feasible. The use of Low Impact Development/Green Infrastructure design options would also be considered along with the conventional on-site or off-site stormwater detention/retention.

The construction of the proposed access road adjacent to and within the arroyo could temporarily result in increased sedimentation within the arroyo. In addition, all ephemeral arroyos within the project area could experience increased sedimentation and erosion temporarily during construction and training activities (e.g., off-road maneuvering). Maneuver training could also result in impacts on surface water quality from nonpoint source sediment loading, increased runoff, and accidental spills. BMPs following Fort Bliss SWPPP guidance could be utilized to control temporary fugitive dust, erosion, and sedimentation during construction. These BMPs include silt fencing, structural wind breaks, erosion control mats, and applying water during construction.

An increase in the amount of bare ground can reduce the quantity of water held within the upland areas and increase overland flow, thus increasing discharge from peak flows and decreasing the duration of flood flows. Training activities could result in accidental releases of fuels, solvents, and other hazardous materials that could impact surface water. Fort Bliss has a Spill Prevention, Control, and Countermeasures Plan (SPCCP) and Installation Spill Contingency Plan (ISCP) in place that would be followed during construction and training activities. These plans establish responsibilities, duties, procedures, and resources to be employed to contain, mitigate, and clean up petroleum, oil, and lubricants (POL) spills. No significant volume of surface water is

discharged from the basin. There are water pipelines in the area that feed the cattle troughs located within the mountain village off-road zone and the surrounding areas. These pipelines receive water from surface water diversions in the area. Historically, the surface water has been modified to provide water for livestock in the perennial reaches of the streams, but even under normal conditions, the mountain drainages are not tributary to larger streams. Therefore, there would be minimal impacts on surface water as a result of Alternative 2.

3.3.2.3 *Alternative 3*

Impacts on surface water would be similar to, but less than, those under Alternative 2 because the proposed site is located further away from existing arroyos and no arroyo under Alternative 3 would be directly impacted by project construction.

3.3.2.4 *Alternative 4*

Impacts on surface water would be similar to those under Alternatives 2 and 3. There would be minimal impacts on surface water as a result of the construction and training use of both proposed mountain villages.

3.4 Groundwater

3.4.1 Affected Environment

Fort Bliss is located primarily in the Tularosa-Hueco Basin of the Basin and Range Physiographic Province with small portions in the Mesilla Basin and the Salt Basin. The majority of McGregor Range is located in the Tularosa Basin, which is a large, closed basin with surface drainages to playas and salt flats. The northeast quarter of McGregor Range, including the southern slopes and Sacramento Foothills North of NM 506 and the western part of the Otero Mesa South of NM 506, is within the Salt Basin, which is listed as an undeclared groundwater basin by the New Mexico State Engineer. Groundwater resources are not extensively developed in the Salt Basin, and no significant use of groundwater occurs within McGregor Range. All potable water for use at McGregor Range Camp is currently supplied by El Paso Water Utilities (U.S. Army 2010).

3.4.2 Environmental Consequences

3.4.2.1 *Alternative 1 (No Action)*

Under Alternative 1, the mountain villages and access road would not be constructed and no training activities or land use designation change associated with the proposed mountain villages would take place; therefore, no impacts on groundwater additional to the existing environment would occur.

3.4.2.2 *Alternative 2 (Preferred Alternative)*

Indirect impacts on groundwater quality could occur from compaction of soils and decreased percolation to groundwater related to construction activities and maneuver training and from contamination resulting from POL at the mountain village sites. However, Fort Bliss' SPCCP and ISCP would be followed to contain, mitigate, and clean up any spills. BMPs and erosion and sediment controls would be implemented during construction activities. Periodic field inspections would be conducted by Fort Bliss personnel to monitor for compliance with environmental requirements and to identify any adverse effects from training.

The project would not require drilling of water wells and no groundwater would be used during construction or training exercises. Potable water would be carried in during training activities. Impacts on groundwater as a result of Alternative 2 would be negligible.

3.4.2.3 Alternative 3

Impacts on groundwater would be similar to those under Alternative 2. There would be negligible impacts on groundwater as a result of the construction and training use of the proposed mountain village in TA-13.

3.4.2.4 Alternative 4

Impacts on groundwater would be similar to those under Alternatives 2 and 3. There would be negligible impacts on groundwater as a result of the construction and training use of both proposed mountain villages.

3.5 Biological Resources

3.5.1 Affected Environment

The U.S. Fish and Wildlife Service (USFWS), under the Endangered Species Act (ESA) of 1973, and the State of New Mexico, under the New Mexico Wildlife Conservation Act (NMWCA) of 1978, list various species of flora and fauna that are known to occur, or have the potential to occur, on Fort Bliss as Threatened, Endangered, or Species of Concern. Additionally, Locally Important Natural Resources (LINR) have been identified for protection by Fort Bliss. These include black grama grasslands (*Bouteloua eriopoda*), sand sagebrush (*Artemisia filifolia*) communities, shinnery oak islands, arroyo-riparian drainages, and playa lakes (U.S. Army 2010). A listing of these resources and information on habitat and occurrences can be found in the SEIS, the GFS EIS, and the *Fort Bliss Integrated Natural Resources Management Plan, November 2001* (INRMP). The INRMP is herein incorporated by reference. These documents can be found at <https://www.bliss.army.mil>.

The Sacramento Mountains, bordering Fort Bliss to the northeast, are composed of steep terrain ascending from the lower slopes to an altitude of more than 7,600 feet above mean sea level (MSL) within the Fort Bliss boundary. The elevation range is 4,450 to 7,700 feet. This area is made up of a complex of limestone foothills of diverse aspects alternating with steep-sided canyons and narrow to moderately wide valleys (U.S. Army 2009).

The terrain for the proposed mountain village in TA-12 is a fairly steep, very rocky, stream terrace. The vegetation is mapped as foothills desert shrubland and is dominated by mesquite (*Prosopis* spp.), creosote bush (*Larrea tridentata*), American tarbush (*Flourensia cernua*), prickly pear (*Opuntia engelmannii*), broom snakeweed (*Gutierrezia sarothrae*), Apache plume (*Fallugia paradoxa*), Mormon tea (*Ephedra viridis*), whitethorn acacia (*Acacia constricta*), and banana yucca (*Yucca baccata*). The proposed access road to the mountain village in TA-12 bisects an arroyo, which is considered a LINR. It is primarily a gravelly sheet flow area that is sparsely vegetated.

The terrain for the proposed mountain village in TA-13 is relatively flat with a deep cut near the rear of the site. The vegetation is mapped as montane shrubland and the site is very sparsely

dominated by juniper (*Juniperus* spp.), creosote bush, whitethorn acacia, American tarbush, and banana yucca.

3.5.2 Threatened and Endangered Species, Species of Special Concern, and LINRs

On Fort Bliss, 61 sensitive species of flora and fauna are known to occur or have the potential to occur, of which 31 have Federal special status. Seven are listed as threatened or endangered under the ESA, and one is a candidate for listing. The remaining 23 are listed as species of concern. In addition to those Federally listed and special status species, 11 are listed as New Mexico threatened animals, 5 as endangered animals in the state, 18 are considered sensitive in the state, and 27 are New Mexico animal species of concern (some of the latter are in addition to a species having sensitive or state-listed status). Only one species on the ESA list, Kuenzler hedgehog cactus (*Echinocereus fendleri* var. *kuenzleri*), has potential habitat on the extreme northern McGregor Range in the Sacramento Mountains. The cactus prefers gravelly gentle slopes or benches of Permian limestone at elevations from 5,195 to 6,990 feet within the lower slopes of pine-juniper woodland. Habitat that appears to be the most suitable is in the northern McGregor Range; however, surveys conducted from 2004 to 2006 in potential habitat on northern McGregor Range did not detect populations (U.S. Army 2010). In summer 2012, Fort Bliss DPW-E conducted evaluations of potential sites for the Federally listed endangered Kuenzler hedgehog cactus in the two proposed mountain village locations, including the 1-kilometer off-road zone. Biologists surveyed these areas extensively, and no individuals of the Kuenzler hedgehog cactus species were detected. The Proposed Action also occurs in arroyo-riparian habitat that could be utilized by bird species protected under the Migratory Bird Treaty Act (MBTA) of 1918, such as the gray vireo (*Vireo vicinior*).

3.5.3 Environmental Consequences

3.5.3.1 Alternative 1 (No Action)

Under Alternative 1, the mountain villages and access road would not be constructed and no training activities or land use designation change associated with the proposed mountain villages would take place; therefore, no impacts on biological resources additional to the existing environment would occur.

3.5.3.2 Alternative 2 (Preferred Alternative)

The Kuenzler hedgehog cactus, which is Federally listed as endangered and is also considered endangered by the state of New Mexico, has potential habitat in the region, but recent surveys have indicated that no individuals of the species are located within the project area. Thus, the implementation of Alternative 2 would not adversely affect the Kuenzler hedgehog cactus species listed under the ESA. The remaining Federally listed species do not occur nor is suitable habitat available within the project area.

Alternative 2 could occur in habitat that is utilized by the gray vireo and other bird species protected under the MBTA. These species may be minimally impacted by Alternative 2 construction and training activities. The canyons and draws in this part of the Sacramento Mountains have known arroyo-riparian habitat for the gray vireo, and the canyon leading to the proposed mountain village in TA-12 has had gray vireo sightings in recent surveys. However, only 0.16 percent of total arroyo-riparian habitat on Fort Bliss is located within the vicinity of the project area (31 acres out of 19,542). The birds have persisted in a region where training has

been ongoing for years, with apparent negligible impact on the species. The proposed village site would be upslope from arroyos where nests typically occur on McGregor Range, further lessening the potential for impact. In addition, there are no known nesting sites for gray vireo that would likely be disturbed. The gray vireo and other migratory birds would be protected in accordance with the MBTA to include phasing construction around nesting season to the greatest extent practicable, and implementing BMPs to avoid harassing or harming these species.

Game animals (such as mule deer [*Odocoileus hemionus*]) and other non-special status species would likely move out of the area when construction and training activities commence. Abundant habitat for many different species exists in northeast McGregor Range.

The livestock animals that would be brought in during training exercises would possibly include cattle, goats, sheep, pigs, chickens, and dogs. Planning would include measures to ensure that no animals escape to potentially create a feral population. Federal and state regulations pertaining to the use and movement of these animals would be followed.

Approximately 5.4 acres would be cleared of regionally common vegetation. The arroyo, which is considered an LINR, would lose a very small amount of riparian habitat (estimated at no more than a few acres) where the proposed access road crosses the drainage in places (see Figure 3-3). Low-water crossings, however, would be built to allow water to continue flowing downstream and support the area's riparian system. All design standards for the design and construction of the access road, including draining and sustainability, would be adhered to. No other LINRs as described in the SEIS, the GFS EIS, or INRMP would be affected.

To prevent the spread of noxious weeds from construction activities, a noxious weed monitoring and treatment program would be established by ITAM with guidance from DPW-E biologists. Additionally, construction equipment would be cleaned of all dirt, mud, and plant debris prior to moving onto or off of the project area. Following construction, disturbed areas would be graded to match the surrounding topography and the surface would be left rough to facilitate regrowth of native vegetation.

3.5.3.3 *Alternative 3*

Impacts under Alternative 3 would be similar to those under Alternative 2. Approximately 1.6 acres of regionally common vegetation would be cleared as a result of construction of the proposed mountain village. The implementation of Alternative 3 would not adversely affect the Kuenzler hedgehog cactus species listed under the ESA. Alternative 3 could occur in habitat that is utilized by the gray vireo and other bird species protected under the MBTA. These species may be minimally impacted by Alternative 2 construction and training activities; however, only 0.16 percent of total arroyo-riparian habitat on Fort Bliss is located within the vicinity of the project area (31 acres out of 19,542).

3.5.3.4 *Alternative 4*

Impacts under Alternative 4 would be similar to those under Alternatives 2 and 3. Approximately 7 acres of regionally common vegetation would be cleared as a result of the construction of both proposed mountain villages. The implementation of Alternative 4 would not adversely affect the Kuenzler hedgehog cactus species listed under the ESA. Impact to gray

vireo habitat would be minimal as only 0.32 percent of total potential habitat on Fort Bliss could be affected (62 acres out of 19,542 acres).

3.6 Cultural Resources

3.6.1 Affected Environment

Cultural resources are regulated at Fort Bliss per the National Historic Preservation Act (NHPA) of 1966, the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, the Archaeological Resources Protection Act of 1979, and other statutes. Cultural resources are important because of their association or linkage to past events, historically important persons, design and construction values, and for their ability to yield important information about history. Fort Bliss manages cultural resources associated with all prehistoric and historic periods recognized in south-central New Mexico. The *Fort Bliss Texas and New Mexico, Mission and Master Plan, Programmatic Environmental Impact Statement* (MMP EIS) (U.S. Army 2000) describes in detail the cultural history of Native Americans and post-contact inhabitants in the region. The *Integrated Cultural Resources Management Plan* (ICRMP) for Fort Bliss (U.S. Army 2008a) also contains detailed information about the history of Fort Bliss. Both documents are incorporated herein by reference and can be found at <https://www.bliss.army.mil>. Pursuant to Army Regulation AR 200-1, the Garrison Commander at Fort Bliss is responsible for managing the cultural resources on the installation in compliance with all Federal laws, regulations, and standards.

Both the Alternative 2 and Alternative 3 project areas have been evaluated for impacts on historic and archaeological properties in a previous survey that included TA-12 and TA-13 by Lone Mountain Archaeological Services (Renn et al. 2010) and Fort Bliss archaeologists (Hawthorne-Tagg et al. 1999; Lowry 2011; and O’Leary et al. 1997). The recent cultural resources investigations by Renn et al. and Fort Bliss archaeologists incorporating the project area comply with both the NHPA (16 USC fl470, et. seq.) and the Programmatic Agreement (PA) entered into by the Fort Bliss Garrison Command, the Texas State Historic Preservation Officer (SHPO), the New Mexico SHPO, and the Advisory Council on Historic Preservation (ACHP) for the Management of Historic Properties on Fort Bliss.

For the proposed mountain village site in TA-12, the Renn et al. 2010 investigation included 189 acres of the off-road zone. Fort Bliss archaeologists surveyed the proposed 1.4-acre village footprint and disturbance area and access road under one investigation (Lowry 2011) and 167.4 acres of the mountain village off-road zone under a separate investigation (O’Leary 1997). At the time of preparing this document, an additional investigation of previously unsurveyed portions of the off-road zone is in progress by Fort Bliss archaeologists and the results are forthcoming. No archaeological sites were encountered within the proposed 1.4-acre village footprint. Two archaeological sites located within the proposed 868-acre off-road zone were reported. One site is recommended ineligible for inclusion in the National Register of Historic Places (NRHP) and will require no further consideration (Renn et al. 2010); the second site is of undetermined eligibility.

For the proposed mountain village site in TA-13, the Renn et al. 2010 investigation covered 646 acres of the proposed Alternative 3 project area, including the 1.6-acre village footprint disturbance area and the majority of the surrounding mountain village off-road zone. An additional 78.6 acres were surveyed by Fort Bliss archaeologists (Hawthorne-Tagg et al. 1999). At the time of preparing this document, Fort Bliss archaeologists are conducting cultural resources surveys of previously unsurveyed portions of the Alternative 3 project area and the results are forthcoming. No cultural resources were reported within the proposed 1.6-acre village site and 22 archaeological sites were recorded within the mountain village off-road zone of Alternative 3. Seventeen of the archaeological sites located within the off-road zone are recommended ineligible for the NRHP and require no further consideration. One site within the off-road zone was recommended ineligible but has not received SHPO concurrence. Two sites within the mountain village off-road zone are recommended eligible for the NRHP and two are of undetermined eligibility (Renn et al. 2010).

3.6.2 Environmental Consequences

3.6.2.1 *Alternative 1 (No Action)*

Under Alternative 1, the mountain villages and access road would not be constructed and no training activities or land use designation change associated with the proposed mountain villages would take place; therefore, no impacts on cultural resources additional to the existing environment would occur.

3.6.2.2 *Alternative 2 (Preferred Alternative)*

According to cultural resources surveys conducted by Fort Bliss personnel, there are no cultural resources located within the footprint of the proposed mountain village or access road (Lowry 2011). Two archaeological sites are located outside of the proposed 1.4-acre village site footprint, but within the 868-acre mountain village off-road zone (Renn et al. 2010). One archaeological site is recommended not eligible for inclusion in the NRHP, and implementation of the Preferred Alternative would not result in an adverse effect. The second archaeological site is of undetermined NRHP eligibility and would require further testing to determine whether adverse effects would occur as a result of implementation of the Preferred Alternative. During the implementation of the Preferred Alternative, the site of undetermined eligibility would be delineated with Seibert stakes and avoided by all actions associated with the off-road zone, thereby negating any yet-to-be-determined adverse effects. The Preferred Alternative site is not within the viewshed of a historic district. No adverse effects on cultural resources are expected as a result of the implementation of the Preferred Alternative.

Final siting of the proposed access road would be reviewed by DPW-E archaeologists prior to construction. All previously unsurveyed portions of the off-road zone are currently being surveyed by Fort Bliss archaeologists, and the results will be evaluated for adverse effects prior to implementation of the Preferred Alternative. It should be stipulated that if any sub-surface cultural resources are encountered during the construction of the proposed mountain village in TA-12, they would be properly mitigated per the PA. Any discovery of possible human remains would be treated in accordance with the NAGPRA and the Standard Operating Procedures (SOPs) set out in the ICRMP.

3.6.2.3 *Alternative 3*

Surveys determined that no surface archaeological sites eligible for inclusion in the NRHP are located within the 1.6-acre mountain village footprint and disturbance area. Survey coverage of the 780-acre off-road zone surrounding the proposed village site was limited to 96 percent of the area. Within the area surveyed, 22 archaeological sites were reported by Renn et al. 2010. Of these 22 archaeological sites, 18 are ineligible and require no further consideration. The four remaining previously reported archaeological sites consist of two recommended eligible for the NRHP and two of undetermined eligibility. If Alternative 3 is implemented, these four sites would be delineated with Seibert stakes and avoided by all actions associated with the off-road zone. If avoidance is not possible, a mitigation plan for their treatment would be developed per the PA. No adverse effects on cultural resources are expected as a result of the implementation of Alternative 3.

All previously unsurveyed areas within the off-road zone are currently being surveyed by Fort Bliss archaeologists, and the results will be evaluated for adverse effects prior to implementation of Alternative 3. It should be stipulated that if any sub-surface cultural resources are encountered during the construction of the proposed mountain village in TA-13, they would be properly mitigated per the PA. Any discovery of possible human remains would be treated in accordance with the NAGPRA and the SOPs set out in the ICRMP.

3.6.2.4 *Alternative 4*

Impacts on cultural resources would be similar to those under Alternatives 2 and 3. No adverse effects on cultural resources are expected.

3.7 Air Quality

3.7.1 Affected Environment

The U.S. Environmental Protection Agency (USEPA) established National Ambient Air Quality Standards (NAAQS) for specific pollutants determined to be of concern with respect to the health and welfare of the general public (USEPA 2010a). Ambient air quality standards are classified as either "primary" or "secondary." The major pollutants of concern, or criteria pollutants, are carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃), particulate matter less than 10 microns (PM-10), particulate matter less than 2.5 microns (PM-2.5), and lead. NAAQS represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect the public health and welfare.

Areas that do not meet these NAAQS standards are called non-attainment areas; areas that meet both primary and secondary standards are known as attainment areas (USEPA 2010b). The project sites for the Alternatives are located in Otero County, which is in attainment for all NAAQS.

3.7.2 Environmental Consequences

3.7.2.1 *Alternative 1 (No Action)*

Under Alternative 1, the mountain villages and access road would not be constructed and no training activities or land use designation change associated with the proposed mountain villages

would take place; therefore, no impacts on regional air quality additional to the existing environment would occur.

3.7.2.2 *Alternative 2 (Preferred Alternative)*

Temporary and minor increases in air pollution would occur from the use of construction equipment (combustion emissions) and the disturbance of soils (fugitive dust) during construction of the new access road and mountain village. Construction workers would temporarily increase the combustion emissions in the airshed during their commute to and from the project area. Emissions from delivery trucks would also contribute to the overall air emission budget. Operational air emissions refer to air emissions that may occur after the mountain village has been constructed and during training exercises. It would include commuter and military vehicles traveling to the project site during the training exercises and portable diesel generators used to power the remote location. Fort Bliss will not require an air emission permit for the diesel generators. The New Mexico Environment Department Air Quality Bureau does not regulate new sources if the annual emission rates are below *de minimis* thresholds. No permit is required from new sources if annual emissions are less than 10 tons per year (tpy) of any regulated air contaminants and less than 1 tpy of lead. Annual emissions for the diesel generators are estimated to be well below 1 tpy for any of the regulated air contaminants. Air emissions were also calculated for fugitive dust emissions when Soldiers are driving around the project site during tactical training. The calculations for air emissions from these operational sources are presented in Appendix B.

Based upon the calculations, air emissions from the proposed construction and operational activities do not exceed Federal *de minimis* thresholds. As there are no violations of air quality standards and no conflicts with the state implementation plans, the impacts on air quality in Otero County from the implementation of the Preferred Alternative would be negligible. During the construction of the proposed mountain village, proper and routine maintenance of all vehicles and other construction equipment would be implemented to ensure that emissions are within the design standards of all construction equipment. Dust suppression methods should be implemented to minimize fugitive dust, including wetting solutions applied to construction areas.

3.7.2.3 *Alternative 3*

Impacts on air quality would be similar to those under Alternative 2. The impacts on air quality in Otero County from the implementation of Alternative 3 would be negligible.

3.7.2.4 *Alternative 4*

Impacts on air quality would be similar to those under Alternatives 2 and 3. The impacts on air quality in Otero County from the implementation of Alternative 4 would be negligible.

3.8 Noise

3.8.1 Affected Environment

Noise is generally described as unwanted sound, which can be based either on objective effects (i.e., hearing loss, damage to structures, etc.) or subjective judgments (e.g., community annoyance). Sound is usually represented on a logarithmic scale with a unit called the decibel (dB). Sound on the decibel scale is referred to as sound level. The threshold of human hearing

is approximately 3 dB, and the threshold of discomfort or pain is around 120 dB. The A-weighted decibel scale (dBA) takes this into account, emphasizes the frequencies, and is a measure of noise at a given, maximum level or constant state level. A Day-Night Average Sound Level (DNL) represents the 24-hour average frequency-weighted sound level, in decibels, from midnight to midnight, obtained after the addition of 10 decibels to sound levels in the night from midnight up to 7 a.m. and from 10 p.m. to midnight. Gunshots are impulsive in nature and occur over a very short period in time, only a few thousandths of a second. Therefore, noise emissions from small and large ammunitions are measured in unweighted peak sound levels (dBP), which is a measurement of gunfire pulse sound in decibels. Similarly, the PK15(met) is a peak sound measurement. It is the maximum value of the instantaneous sound pressure for each unique sound source after applying the 15 percentile rule accounting for meteorological variation.

Experience has shown that complaints from infrequent or sporadic training use of small and large caliber firearms are usually attributed to a single loud event, at a particular point in time. The U.S. Army is committed to the avoidance and mitigation of noise impacts on areas adjacent to military installations, has developed a noise abatement policy, and has implemented this policy through Army Regulation (AR) 200-1. The AR 200-1 policy partitions noise into zones with each zone representing an area of increasing decibel level. The AR lists housing, schools, and medical facilities as examples of noise-sensitive land uses (U.S. Army 2007a). The program defines four Noise Zones:

- **Zone I.** Zone I is the entire area outside of the Zone II contour. Noise-sensitive land uses are generally acceptable within Zone I. While an area may only receive Zone I levels, military operations may be loud enough to be heard or even considered loud on occasion.
- **Zone II.** Development in Zone II should be limited to non-sensitive activities such as industry, manufacturing, transportation, and agriculture. Although local conditions such as availability of developable land or cost may require noise-sensitive land uses in Zone II, this type of land use is strongly discouraged on the installation and in surrounding communities, and all viable alternatives should be considered to limit development.
- **Zone III.** Noise-sensitive land uses are not recommended in Zone III.
- **Land Use Planning Zone (LUPZ).** The LUPZ, a subdivision of Zone I, is 5 dB lower than Zone II. Within this area, noise-sensitive land uses are generally acceptable. However, communities and individuals often have different views regarding what level of noise is acceptable or desirable. To address this, some local governments have implemented land use planning measures out beyond the Zone II limits. Additionally, implementing planning controls within the LUPZ can develop a buffer to avert the possibility of future noise conflicts.

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Sacramento Mountain Villages, McGregor Range, Fort Bliss, New Mexico**

Table 3-2 summarizes each zone and its appropriate weighting by type of operation:

Table 3-2. Noise Zone Decibel Levels

Noise Zone	Aviation (DNL)	Small Arms (PK15[met])
Land Use Planning Zone	60-65	N/A
Zone I	Less than 65	Less than 87
Zone II	65 to 75	87 to 104
Zone III	Greater than 75	Greater than 104

Source: Army Regulations 200-1.

Complaint Risk Analysis

The U.S. Army has adopted a complaint risk analysis metric to assess the response of the public to large caliber weapons (grenade launcher) artillery. Complaints from infrequent or sporadic training are usually attributed to a single loud event, at a particular point in time, versus the average noise dose received at any one location. To this end, the U.S. Army has adopted the practice of assessing infrequent or sporadic demolition and large caliber activity noise using the complaint risk PK15(met) noise metrics (U.S. Army 2007a). Table 3-3 contains the complaint risk guidelines.

Table 3-3. Complaint Risk Guidelines for Large Caliber Weapons

Risk of Complaints	Large Caliber Weapons
	PK15(met) dB Noise Contour
Low	< 115
Moderate	115 – 130
High	> 130

Source: Army Regulations 200-1.

Noise-sensitive land uses are discouraged in areas where PK15(met) is between 115 and 130 dB, which have a medium risk of complaints. Noise-sensitive land uses are strongly discouraged in areas equal to or greater than PK15(met) of 130 dB, which have a high risk of noise complaints. For infrequent noise events, installations should determine if land use compatibility within these areas is necessary for mission protection.

Residential Homes and Wilderness Study Area

The potential for noise from the small caliber firing activity may be perceived as an issue for the communities surrounding the project area. The civilian areas closest to the project sites are characterized as minimally developed rural land, and few residential homes are located in the areas adjacent to Fort Bliss property in the community of Timberon, New Mexico. The distance from Timberon to the proposed mountain village in TA-12 is 5.9 miles, and the distance from Timberon to the proposed mountain village in TA-13 is 3.7 miles. The Culp Canyon WSA is located northwest of the project sites and is considered a sensitive noise receptor. The Culp Canyon WSA is located 0.5 mile adjacent to the proposed mountain village in TA-12 and 3.7 miles from the proposed mountain village in TA-13.

3.8.2 Environmental Consequences

3.8.2.1 *Alternative 1 (No Action)*

Under Alternative 1, the mountain villages and access road would not be constructed and no training activities or land use designation change associated with the proposed mountain villages would take place; therefore, no regional noise impacts additional to the existing environment would occur.

3.8.2.2 *Alternative 2 (Preferred Alternative)*

The noise section is divided into two sections: the noise emissions associated with construction and the noise emissions associated with the operation and training use of the proposed mountain village. Training noise emission includes sources such as small arms gunfire and helicopter traffic.

Construction Noise Emissions

The construction of the proposed mountain village and access road would require the use of common construction equipment. The noise emission levels for construction equipment range from 76 dBA to 82 dBA at a distance of 50 feet (FHWA 2007). Assuming the worst-case scenario of 82 dBA, the noise model projected that noise levels of 82 dBA from a point source (i.e., bulldozer) would have to travel 370 feet before the noise would be attenuated to a noise level of 65 dBA. The 82 dBA noise level would have to travel 830 feet before the noise would attenuate to 57 dBA, the criterion for the Culp Canyon WSA. The Culp Canyon WSA is located approximately 3,110 feet from the proposed mountain village footprint in TA-12. Assuming the construction activities are contained within the delineated construction area, no residential areas, National parks, or other sensitive noise receptors would be impacted by the construction of the proposed mountain village in TA-12. Noise generated by the construction activities would be intermittent and last up to 1 year, after which noise levels would return to ambient levels. Therefore, the noise impacts from construction activities would be temporary and considered minimal.

Operational Noise Emissions

The U.S. Army Public Health Command (USAPHC) performed a noise emissions analysis of the planned actions (USAPHC 2012) and this section summarizes the findings in the report.

Small Caliber and Pyrotechnic Simulator Noise Emissions

The USAPHC analysis concluded that the noise from proposed small caliber activity (.50-caliber machine gun) and the Zone II levels (PK15(met) 87 dB) would extend out approximately 984 feet (USAPHC 2012). Noise emissions from the Pyrotechnic Simulator were assessed based on the potential for individual events to generate noise complaints. The USAPHC analysis concluded that the risks of noise complaints from the pyrotechnics as tested in the pyrotechnic simulator would be low beyond 2,624 feet (USAPHC 2012).

Aircraft Noise Emissions

The loudest helicopter planned to be used would be the CH-47, which produces a 92.4 dBA at 500 feet above ground level. The USAPHC noise analysis (2012) concluded that the low number of flights per day would produce noise emissions less than a Zone II 65 dBA DNL threshold and that the complaint risk would be low. However, if the aircraft approach route

travels over the off-post community of Timberon, there is a potential for community annoyance (USAPHC 2012).

In conclusion, neither the noise from the construction activities or the proposed training activities would have an impact in the Culp Canyon WSA. There is potential that aircraft flying an off-post approach to the mountain village site may annoy those living near the flight tracks. The addition of the proposed mountain village and its training use would have little to no noise impact beyond the Fort Bliss boundary. The noise levels from proposed training would be compatible with U.S. Army guidelines, and impacts on the noise environment in the region would be minimal.

3.8.2.3 *Alternative 3*

Noise emissions associated with Alternative 3 would be similar to those described in Alternative 2. The distances to the sensitive noise receptors are far enough away that noise emissions would only have minimal impacts. Similar to Alternative 2, there is potential that aircraft flying an off-post approach to the proposed mountain village site may annoy those living near the flight tracks. The USAPHC noise analysis (2012) concluded that noise emissions associated with construction and military training activities would attenuate to levels below significant thresholds before entering areas with sensitive noise receptors; therefore, impacts on the noise environment in the region would be minimal.

3.8.2.4 *Alternative 4*

Noise impacts would be a combination of those under Alternatives 2 and 3. The implementation of Alternative 4 would result in minimal impacts on the noise environment.

3.9 Transportation and Supporting Infrastructure

3.9.1 Affected Environment

Access to McGregor Range is provided by US 54, which serves as the western boundary of McGregor Range, and NM 506 (see Figure 1-1). NM 506 is a semi-improved road that intersects US 54 north of the town of Orogrande, New Mexico, and runs easterly across McGregor Range, serving the northern portion of the range, as well as the southeastern part of Otero County and communities in the southern Sacramento Mountains. As such, NM 506 is used by both the military and civilians. Access to the proposed mountain village in TA-12 would be provided by Culp Canyon Road, which is maintained by BLM. Access to the proposed mountain village in TA-13 would be provided by Culp Canyon Road and Combat Trail Road, which are maintained by BLM.

A water line is located along Culp Canyon Road, and a water trough is located along the existing access road leading to the proposed mountain village site in TA-12 (see Figure 2-1). Water lines and water troughs are also located within the mountain village off-road zone of the proposed mountain village in TA-13 (see Figure 2-3).

3.9.2 Environmental Consequences

3.9.2.1 *Alternative 1 (No Action)*

Under Alternative 1, the mountain villages and access road would not be constructed and no training activities or land use designation change associated with the proposed mountain villages would take place; therefore, no impacts on transportation and supporting infrastructure additional to the existing environment would occur.

3.9.2.2 *Alternative 2 (Preferred Alternative)*

Construction and training use of the proposed mountain village in TA-12 would require the use of NM 506 and Culp Canyon Road. A minor and temporary disruption in normal traffic use of NM 506 and Culp Canyon Road would be expected during construction. There would be an increase in military vehicle traffic during training exercises, but a low volume of traffic occurs currently in the area. There is a potential for damage to the Culp Canyon Road due to the increased military vehicles, especially some of the heavier vehicles. Fort Bliss and BLM share road maintenance responsibilities, and roads will be maintained to a standard that is consistent with levels of use, environmental factors, safety requirements, level of funding, and resource conditions, per the Memorandum of Understanding between Fort Bliss and BLM (U.S. Army 1990). Construction of the access road to the mountain village site in TA-12 would result in approximately 0.65 mile of new road. This represents an additional 4 acres being cleared and grubbed. A water line and water trough are located along the existing access road leading to the proposed village site. The water line located along Culp Canyon Road would need to be protected or buried sufficiently deep to avoid damage from off-road maneuvers. The water trough would need to be protected and avoided during construction and training exercises. Also, Fort Bliss would ensure that BLM has access to the water troughs, water pipelines, and fencing for repairs and maintenance at least 4 hours, twice per week. There would be minimal impacts on transportation and supporting infrastructure due to the Preferred Alternative.

3.9.2.3 *Alternative 3*

Construction and training use of the proposed mountain village in TA-13 would require the use of NM 506 and Combat Trail Road. Impacts would be similar to those under Alternative 2.

3.9.2.4 *Alternative 4*

Impacts under Alternative 4 would be similar to those under Alternatives 2 and 3. While there would be a potential for more military vehicles to use the roadways during training exercises at both village sites, there would still be minimal impacts on transportation and supporting infrastructure as a result of the construction and training use of both proposed mountain villages.

3.10 Health and Safety

3.10.1 Affected Environment

Federal, State, and Fort Bliss guidelines, rules, and regulations are in place to protect personnel throughout the installation. Safety information and analysis is found in the *Fort Bliss, Texas and New Mexico Mission and Master Plan Final EIS* (U.S. Army 2007) and Fort Bliss Regulation 385-63. Health programs are promoted through U.S. Army Public Health Command and Medical Command. Various Fort Bliss SOPs have also been established to meet health and safety requirements.

Health and safety hazards in the mountain village activity area could include exposure to unexploded ordnance (UXO), dehydration and heat illness, and contact with venomous animals and spiny vegetation. Lightning strikes are a potential hazard, especially during stormy summertime weather. The live-fire military activities, including the use of weapons with laser sights that would occur during training exercises, could pose potential safety hazards. Helicopters and other possible aircraft would utilize the airspace during the exercises, and hazards associated with use of the airspace would need to be considered.

3.10.2 Environmental Consequences

3.10.2.1 Alternative 1 (No Action)

Under Alternative 1, the mountain villages and access road would not be constructed and no training activities or land use designation change associated with the proposed mountain villages would take place; therefore, no impacts on health and safety additional to the existing environment would occur.

3.10.2.2 Alternative 2 (Preferred Alternative)

The Proposed Action is located in a military training area; as such, there is a small potential for encountering UXO during construction of the mountain village site in TA-12. Detected UXO would be handled by explosive ordnance disposal (EOD) personnel, as per approved procedures at Fort Bliss. Live-fire military activities would occur as part of the Proposed Action. The live-fire military activities would occur under controlled conditions and only in the specified areas. The live-fire military activities would be scheduled and would temporarily restrict non-military access to the site and the safety buffer surrounding the live-fire site. Certain weapons would be equipped with laser sights. The potential hazards of the laser sights are limited to the eye. The most likely effects from exposure to viewing the laser beam are afterimage, flash blindness, and glare. Afterimage is the perception of spots in the field of vision. Flash blindness is a temporary vision impairment after viewing a bright light. These are all temporary conditions that would improve after minutes. In addition, Soldiers would be required to participate in a marksmanship program to be trained and qualified on weapons, including the use of laser sights. Public recreation use is controlled through access permits by Fort Bliss Range Operations to ensure safety and use compatibility with military activities, and areas designated for recreational use, including the Culp Canyon WSA, would be closed when in use for military training. The airspace use would be scheduled through Range Operations to prevent accidents. As a result, minimal impacts on health and safety would be expected to result from the Preferred Alternative.

3.10.2.3 Alternative 3

Impacts under Alternative 3 would be similar to those under Alternative 2. Minimal impacts on health and safety would be expected as a result of the implementation of Alternative 3.

3.10.2.4 Alternative 4

Impacts under Alternative 4 would be similar to those under Alternatives 2 and 3. Minimal impacts on health and safety would be expected as a result of the construction and training use of both proposed mountain villages.

3.11 Hazardous Materials and Waste

3.11.1 Affected Environment

Hazardous materials are substances that cause human physical or health hazards (29 CFR 1910.1200). Materials that are physically hazardous include combustible and flammable substances, compressed gases, and oxidizers. Health hazards are associated with materials such as toxic agents, carcinogens, and irritants that cause acute or chronic reactions.

Hazardous waste is produced from various equipment maintenance processes and comprises any material listed in 40 CFR 261 Subpart D, or those that exhibit characteristics of toxicity, corrosivity, ignitability, and reactivity. Hazardous wastes are managed under the Installation Hazardous Waste Management Plan, which provides detailed information on training; hazardous waste management roles and responsibilities; and hazardous waste identification, storage, transportation, and spill control, consistent with Federal and state regulations (U.S. Army 2011).

3.11.2 Environmental Consequences

3.11.2.1 Alternative 1 (No Action)

Under Alternative 1, the mountain villages and access road would not be constructed and no training activities or land use designation change associated with the proposed mountain villages would take place; therefore, no hazardous materials and waste impacts additional to the existing environment would occur.

3.11.2.2 Alternative 2 (Preferred Alternative)

Construction of the proposed mountain village on TA-12 and the supporting access road would require machinery and the use of POL. A limited amount of hazardous materials and waste would be used or generated during routine maintenance and operation of the facilities and associated equipment, including POL. Helicopters used during training exercises would purge 1 quart of fuel during shutdown; however, the shutdown would occur once the helicopters have landed on the concrete landing pad, so the fuel spill impacts would be minimal. Fuel for the generators would be transported and stored on-site in designated trucks. Secondary containment for parking and fuel trucks would be utilized. Drip pans would be provided for stationary equipment to capture any POL accidentally spilled during construction and operation activities or leaks from the equipment. Solid waste would be separated into recyclable and non-recyclable, collected on-site in appropriate containers, and disposed of at an approved disposal facility.

During live-fire training exercises, additional munitions and explosives of concern (MEC) would be generated. MEC consists of UXO and discarded military munitions, which are unfired military munitions that have been abandoned, discarded, or improperly disposed of and are still capable of functioning. Current Army protocols for the protection of Army personnel and the public would reduce the safety risks associated with UXO and would minimize the potential for human or environmental exposure to UXO or lead.

The SPCCP and ISCP would be adhered to during construction and training use. These plans establish responsibilities, duties, procedures, and resources to be employed to contain, mitigate, and clean up POL spills. All hazardous wastes would be disposed of according to the

Installation Hazardous Waste Management Plan. Minimal hazardous materials and waste impacts would occur as a result of the Preferred Alternative.

3.11.2.3 *Alternative 3*

Impacts under Alternative 3 would be similar to those under Alternative 2. Minimal hazardous materials and waste impacts would occur as a result of the implementation of Alternative 3.

3.11.2.4 *Alternative 4*

Impacts under Alternative 4 would be similar to those under Alternatives 2 and 3. Minimal hazardous materials and waste impacts would occur as a result of the construction and training use of both proposed mountain villages.

3.12 Airspace Operations

3.12.1 Affected Environment

The U.S. Army manages airspace delegated to them by the Federal Aviation Administration (FAA) in accordance with Department of Defense (DoD) Directive 5030.19, *Responsibilities on Federal Aviation and National Airspace System Matters*. The Army implements these requirements through AR 95-2, *Air Traffic Control, Airspace, Airfields, Flight Activities, and Navigational Aids*. Airspace over most of McGregor Range and the proposed mountain village sites is special use airspace (SUA) restricted for military use and designated SUA R-5103C (U.S. Army 2010) (Figure 3-4). Use of airspace on McGregor Range is scheduled through the DPTMS, McGregor Base Camp - Range Operations.

3.12.2 Environmental Consequences

3.12.2.1 *Alternative 1 (No Action)*

Under Alternative 1, the mountain villages and access road would not be constructed and no training activities or land use designation change associated with the proposed mountain villages would take place; therefore, no impacts on airspace operations additional to the existing environment would occur.

3.12.2.2 *Alternative 2 (Preferred Alternative)*

Under Alternative 2, there would be no change in the airspace designation. To minimize airspace conflicts during training exercises, especially during .50-caliber weapon firing, scheduling would be done through Range Operations - Flight Control. There would be no effect on public airspace since all airspace within McGregor Range is classified as military airspace. The implementation of the Preferred Alternative would result in minimal impacts on airspace operations.

3.12.2.3 *Alternative 3*

Impacts under Alternative 3 would be similar to those under Alternative 2. The implementation of Alternative 3 would result in minimal impacts on airspace operations.

3.12.2.4 *Alternative 4*

Impacts under Alternative 4 would be similar to those under Alternatives 2 and 3. The implementation of Alternative 4 would result in minimal impacts on airspace operations.

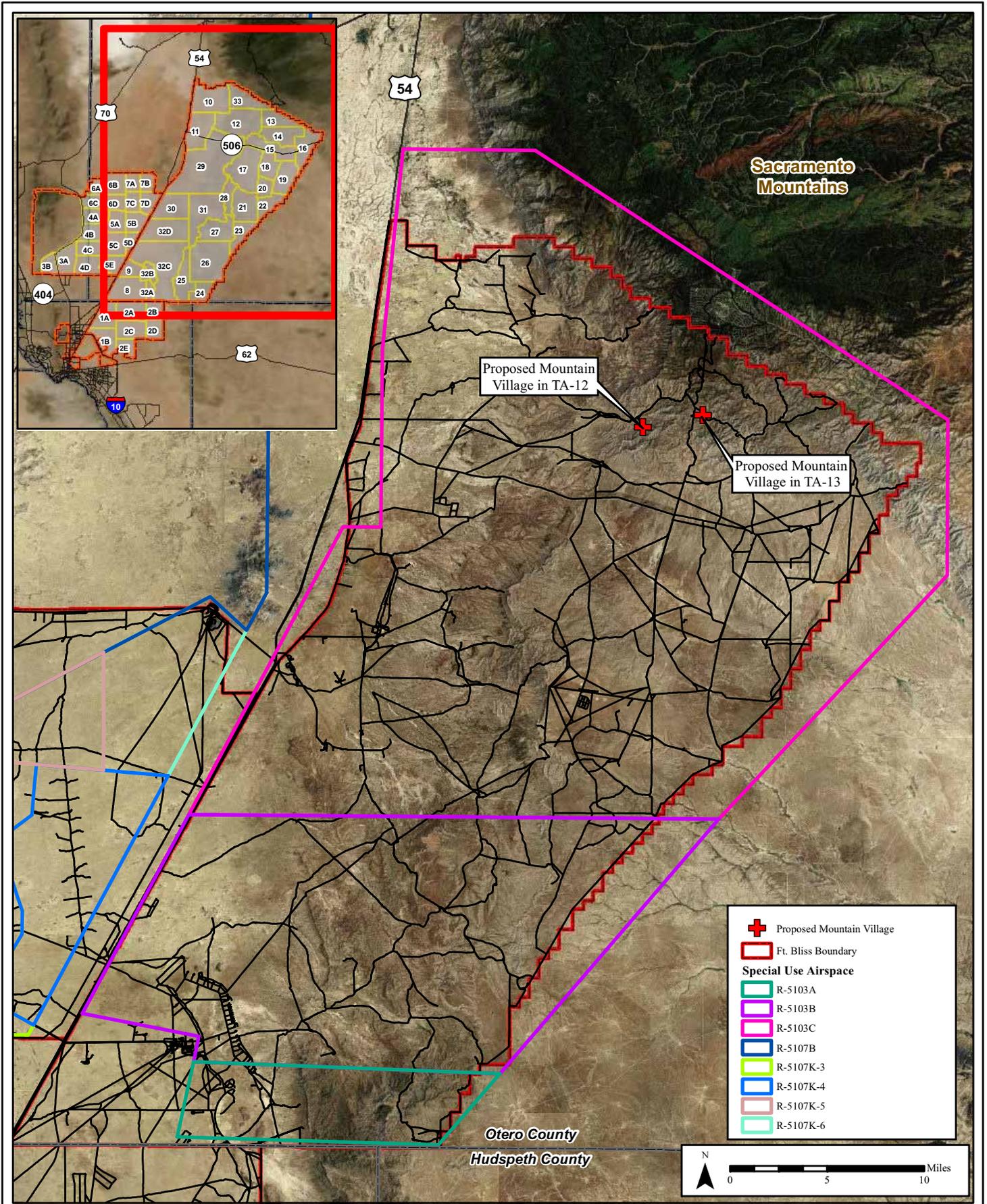


Figure 3-4: McGregor Range Restricted Airspace

3.13 Wildland Fire

3.13.1 Affected Environment

Training-related activities, including detonation of munitions, smoking, use of welding torches, and vehicle engines, could initiate wildland fires. Wildland fire caused by live-fire training activities could remove large areas of vegetation that normally protect soil from erosion by slowing surface runoff, intercepting rain before it reaches the soil surface, and anchoring the soil with roots. Vegetation removal resulting from wildland fires could result in increased soil erosion by water and wind, indirectly causing large-scale removal and redeposition of soils, gullyng, or unstable slopes in areas of steep slopes and rapid runoff. The impact would be directly proportional to the size of the fire.

3.13.2 Environmental Consequences

3.13.2.1 Alternative 1 (No Action)

Under Alternative 1, the mountain villages and access road would not be constructed and no training activities or land use designation change associated with the proposed mountain villages would take place; therefore, no wildland fire impacts additional to the existing environment would occur.

3.13.2.2 Alternative 2 (Preferred Alternative)

All land within the footprint of the mountain village would be cleared and grubbed. Therefore the risk of wildland fire at the proposed mountain village site on TA-12 would be low. In addition, the type and amount of vegetation found near the site would have little potential to be a fuel source for a wildland fire. The Fort Bliss Fire Department responds to all fires within the installation. They work cooperatively with BLM to fight fires on McGregor Range. Wildland fire management practices are further described in the INRMP. The wildland fire impacts would be negligible under the Preferred Alternative.

3.13.2.3 Alternative 3

The amount of vegetation located at the proposed mountain village site in TA-13 is greater than in TA-12; therefore, a fuel reduction thinning project would be required for the area around the proposed mountain village. This vegetation thinning procedure would remove vegetation build-up to reduce the threat of wildfire on approximately 500 acres within the off-road zone. Field personnel would use hand tools such as chainsaws to cut trees less than 8 inches in diameter at breast height, leaving a stump. Branches that are less than 5 feet above ground level would be trimmed off of the remaining trees. After the implementation of this procedure, the wildland fire impacts under Alternative 3 would be negligible.

3.13.2.4 Alternative 4

Impacts under Alternative 4 would be similar to those under Alternatives 2 and 3. Negligible wildland fire impacts would occur as a result of the construction and training use of both proposed mountain villages.

SECTION 4.0
CUMULATIVE IMPACTS



4.0 CUMULATIVE IMPACTS

Cumulative impacts are defined as the impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Although the Proposed Action is not specifically addressed in the SEIS and GFS EIS, the cumulative impact on the natural and human environment from construction of training facilities and support infrastructure on McGregor Range is covered by these documents. However, the Proposed Action would incrementally increase off-road maneuvering capabilities not previously analyzed in these documents.

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SECTION 5.0
SUMMARY OF MITIGATION MEASURES



5.0 SUMMARY OF MITIGATION MEASURES

The following is a summary of the mitigation measures identified under the Proposed Action:

- The gray vireo and other migratory birds would be protected in accordance with the MBTA to include phasing construction around nesting season to the greatest extent practicable, and implementing BMPs to avoid harassing or harming these species.
- Where the access road to the proposed mountain village in TA-12 crosses the arroyo, low-water crossings would be built to allow water to continue flowing downstream and support the area's riparian system.
- To prevent the spread of noxious weeds from construction activities, a noxious weed monitoring and treatment program would be established by ITAM with guidance from DPW-E biologists. Additionally, construction equipment would be cleaned of all dirt, mud, and plant debris prior to moving onto or off of the project area. Following construction, disturbed areas would be graded to match the surrounding topography and the surface would be left rough to facilitate regrowth of native vegetation.
- Public recreation use is controlled through access permits by Fort Bliss Range Operations to ensure safety and use compatibility with military activities. And areas designated for recreational use, including the Culp Canyon WSA, would be closed when in use for military training.
- The sites that are recommended eligible for the NRHP or of undermined eligibility would be delineated with Seibert stakes and avoided by all actions associated with the mountain village off-road zones. If any sub-surface cultural resources are encountered during the construction of the proposed mountain village site(s) or access road, they would be properly mitigated per the PA. Any discovery of possible human remains would be treated in accordance with the NAGPRA and the SOPs set out in the ICRMP.
- Fuel for the generators would be transported and stored on-site in designated trucks. Secondary containment for parking and fuel trucks would be utilized. Drip pans would be provided for stationary equipment to capture any POL accidentally spilled during construction and operation activities or leaks from the equipment. The SPCCP and ISCP would be followed for any POL spills. Solid waste would be separated into recyclable and non-recyclable, collected on-site in appropriate containers, and disposed of at an approved disposal facility for the type of waste.
- A SWPPP would be developed and implemented to prevent stormwater runoff during and following construction.

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- BMPs following Fort Bliss SWPPP guidance would be utilized to control temporary fugitive dust, erosion, and sedimentation during construction. These BMPs include silt fencing, structural wind breaks, erosion control mats, and applying water during construction.
- Dust suppression methods should be implemented to minimize fugitive dust, including wetting solutions applied to construction areas.
- Soil management at Fort Bliss is coordinated through DPW-E and ITAM-DPTMS to control or mitigate for water or wind erosion, and includes cost-effective technologies such as revegetation, erosion control structures, site hardening, blockades, and dust palliatives to prevent training site degradation, soil erosion, and excessive road damage. Fort Bliss resource management objectives include preventing the deterioration of highly erodible soil resources.
- The proposed mountain villages are located in grazing areas with water troughs, water pipelines, and fencing throughout. The water pipelines would be buried sufficiently deep to avoid damage from off-road maneuvers. The water troughs would be protected and avoided during construction and training exercise. Fort Bliss would ensure BLM access to the water troughs, water pipelines, fencing etc., for repairs and maintenance for at least 4 hours, twice per week.
- The livestock animals that would be brought in during training exercises would possibly include cattle, goats, sheep, pigs, chickens, and dogs. Planning would include measures to ensure that no animals escape to potentially create a feral population. Federal and state regulations pertaining to the use and movement of these animals would be followed.

SECTION 6.0
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6.0 REFERENCES

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SECTION 7.0
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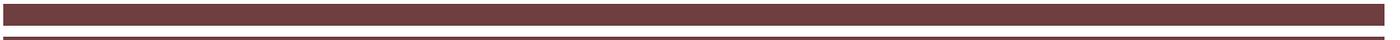
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SECTION 8.0
DISTRIBUTION LIST



8.0 DISTRIBUTION LIST

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SECTION 9.0
ACRONYMS AND ABBREVIATIONS



9.0 ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
ATV	All-Terrain Vehicle
BCT	Brigade Combat Team
BLM	Bureau of Land Management
BMP	Best Management Practice
BRAC	Base Closure and Realignment
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted Decibel
dBp	Unweighted peak sound level
DoD	Department of Defense
DNL	Day-Night Average Sound Level
DPTMS	Directorate of Plans, Training, Mobilization and Security
DPW-E	Directorate of Public Works-Environmental Division
EA	Environmental Assessment
EIS	Environmental Impact Statement
EOD	Explosive Ordnance Disposal
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FBTC	Fort Bliss Training Complex
FNSI	Finding of No Significant Impact
FORSCOM	Forces Command
GFS EIS	Growth and Force Structure Realignment FEIS
HMMWV	High Mobility Multipurpose Wheeled Vehicles
ICRMP	Integrated Cultural Resources Management Plan
IED	Improvised Explosive Device
INRMP	Integrated Natural Resources Management Plan
ISCP	Installation Spill Contingency Plan
ITAM	Integrated Training Area Management
LINR	Locally Important Natural Resources
LUA	Limited Use Area
LUPZ	Land Use Planning Zone
MATV	Mine-Resistant Ambush Protected All-Terrain Vehicle
MBTA	Migratory Bird Treaty Act
MEC	Munitions and Explosives of Concern
MMP EIS	Mission and Master Plan, Programmatic EIS
MRAP	Mine-Resistant Ambush Protected
MSL	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act

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NM	New Mexico
NMWCA	New Mexico Wildlife Conservation Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O ₃	Ozone
PA	Programmatic Agreement
PK15	Peak Sound Measurement
PL	Public Law
PM	Particulate Matter
PM-2.5	Particulate Matter less than 2.5 microns
PM-10	Particulate Matter less than 10 microns
POL	Petroleum, Oil, and Lubricants
ROD	Record of Decision
ROI	Region of Influence
SEIS	Supplemental Environmental Impact Statement
SHPO	State Historic Preservation Officer
SO ₂	Sulfur dioxide
SOP	Standard Operation Procedures
SPCCP	Spill Prevention, Control, and Countermeasures Plan
SWPPP	Stormwater Pollution Prevention Plan
SUA	Special Use Airspace
TA	Training Area
tpy	Tons per year
U.S.	United States
UAS	Unmanned Aircraft Systems
USACE	United States Army Corps of Engineers
USAPHC	United States Army Public Health Command
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
USFWS	United States Fish and Wildlife Service
UXO	Unexploded Ordnance
VEC	Valued Environmental Component
VRM	Visual Resource Management
WSA	Wilderness Study Area

APPENDIX A
INTERAGENCY AND PUBLIC CORRESPONDENCE



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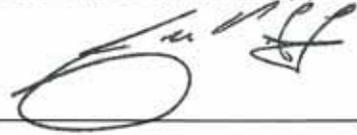
PUBLISHERS AFFIDAVIT

STATE OF TEXAS
COUNTY OF EL PASO

Before me, a Notary in and for El Paso County, State of Texas, on this day personally, appeared JOE WOODS who states upon oath that he is the ASSISTANT CLASSIFIED MANAGER of the EL PASO TIMES, a daily newspaper published in the City and County El Paso, State of Texas, which is a newspaper of general circulation and which has been continuously and regularly published for the period of not less than one year in the said County of El Paso, and that she was upon the dates herein mentioned in the EL PASO TIMES.

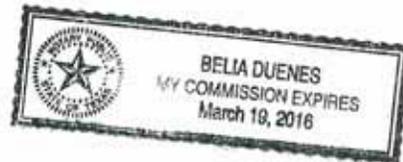
That the PUBLIC NOTICE copy was published in the EL PASO TIMES for the date(s) of such follows 1 DAY(s) to wit JULY 29, 2012.

Signed _____



Subscribed and sworn to before me,
This 31st day of July 31, 2012.

Bela Duenes



NOTICES
100-152

Lost Items 129

★ ★ ★ ★
Sunday 7/22/12 Lost a Green Money Bag that fell out of my vehicle on the intersection of McCombs /Gateway North HWY across from Chevron gas station saw a Silver SUV possible Nissan Frontier pick it up according to some witnesses. WOULD APPRECIATE IF YOU FOUND OR ANYONE THAT FOUND THIS MONEY BAG RETURN IT. Reward Offer call 520-271-8760.

Lost Items 129

Lost Items 129

Found Pets 131

Blk & wht pit pup fem. by Nashville 915-566-2002

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Two kittens. Female. East. 915-373-1896

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Public/
Special Notices 114

NOTICE OF AVAILABILITY - Draft Finding of No Significant Impact Environmental Assessment for the Construction and Training Use of Sacramento Mountain Villages, McGregor Range, Fort Bliss, New Mexico

Fort Bliss has prepared an Environmental Assessment (EA) to evaluate potential environmental impacts resulting from the construction and training use of up to two mountain villages in the Sacramento Mountain area of McGregor Range. The mountain villages will mimic those found in current operational theaters and will provide realistic training opportunities for Soldiers prior to deployment. The EA has resulted in a Draft Finding of No Significant Impact (FNSI). Both documents are available for public review and comment at the El Paso Main Public Library, 501 North Oregon, El Paso, TX 79901; the Alamogordo Public Library, 920 Oregon Ave, Alamogordo, NM 88310; and the Thomas Branigan Memorial Library, 200 E. Picacho Ave, Las Cruces, NM 88001. The Draft EA and FNSI can also be viewed on Fort Bliss' website at www.bliss.army.mil (click on "Environmental").

The public is encouraged to review and comment on these documents. Public comments must be received no later than 30 days from this notice and can be submitted by e-mail at john.f.barrera.civ@mail.mil, or mailed to: Mr. John F. Barrera, NEPA Program Manager, IMBL-PWE, B624 Pleasonton Avenue, Fort Bliss, Texas 79916-6812.

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AFFIDAVIT OF PUBLICATION

ALAMOGORDO,
STATE OF NEW MEXICO
COUNTY OF OTERO.

SS.

I, CAROL A. BURGESS, being duly sworn, on my oath say that I am the General Manager of the Alamogordo Daily News, a newspaper of daily circulation, published and printed in the English language at the City of Alamogordo, Otero County, State of New Mexico. That the Alamogordo Daily News has been regularly published and issued for more than nine months prior to the date of the first publication hereinafter mentioned.

That the attached notice was published 1 time in 1 issue of said newspaper and not in any supplement thereof, the first publication being on July 29th, 2012. That said notice was published in accordance with the laws of the State of New Mexico.

Carol A. Burgess
General Manager

Subscribed in my presence and sworn before me this the 30th day of JULY 2012.

Tisha Garcia
Notary Public

My commission expires 8-10-2015

Legal # 3982



Legal # 3982
(Published
7/29/2012)

NOTICE OF AVAILABILITY

Draft Finding of No Significant Impact Environmental Assessment for the Construction and Training Use of Sacramento Mountain Villages, McGregor Range, Fort Bliss, New Mexico

Fort Bliss has prepared an Environmental Assessment (EA) to evaluate potential environmental impacts resulting from the construction and training use of up to two mountain villages in the Sacramento Mountain area of McGregor Range. The mountain villages will mimic those found in current operational theaters and will provide realistic training opportunities for Soldiers prior to deployment.

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The public is encouraged to review and comment on these documents. Public comments must be received no later than 30 days from this notice and can be submitted by e-mail at

john.f.barrera.civ@mail.mil, or mailed to: Mr. John F. Barrera, NEPA Program Manager, IMBL-PWE, B624 Pleasonton Avenue, Fort Bliss, Texas 79916-6812.



DEPARTMENT OF THE ARMY
HEADQUARTERS, U. S. ARMY GARRISON COMMAND
DIRECTORATE OF ENVIRONMENT, CONSERVATION DIVISION
IMSW-BLS-Z
FORT BLISS, TEXAS 79916-6816

July __, 2012

95009

REPLY TO
ATTENTION OF:

Garrison Command
IMBL-PWE
Conservation Branch



Ms. Jan V. Biella, RPA
Interim State Historic Preservation Officer
State of New Mexico Office of Cultural Affairs
Historic Preservation Division
Bataan Memorial Building
407 Galisteo Street, Suite 236
Santa Fe, NM 87501

Dear Ms. Biella:

Fort Bliss has completed a NEPA analysis of the environmental impacts of construction and training use of up to two mountain villages in the Sacramento Mountains north of NM 506 on McGregor Range. As a part of that analysis, we also conducted an archeological survey of the proposed locations. I have enclosed the final survey report, NIAF form, and LA forms submitted by Lone Mountain Archaeological Services as part of their deliverables under Task Order 15, survey of 1,970 acres for proposed mountain villages. Under our Programmatic Agreement we are asking for your 30-day review of that report and our NRHP recommendations.

I have also included the draft NEPA document entitled "Environmental Assessment for the Construction and Training Use of Sacramento Mountain Villages, McGregor Range, Fort Bliss, New Mexico," and correspondence prepared by my NEPA staff for review of that document. Finally, I also included a RHPC and associated figures for compliance with the Fort Bliss Programmatic Agreement.

Fort Bliss has prepared an Environmental Assessment (EA) to analyze the environmental impacts of construction and training use of up to two mountain villages in the Sacramento Mountains north of NM 506 on McGregor Range. The enclosed EA provides a full description of the action. As the enclosed NEPA letter states, we seek your agency's input into the preparation of the final EA. In addition, SOP #9 of the Fort Bliss PA outlines the process by which NEPA compliance and compliance with the National Historic Preservation Act is achieved under our PA. As stated in SOP #9.3, since an EA is being prepared for this proposed action we are attaching the RHPC and associated figures for your 30-day review.

The attached RHPC outlines the determination of eligibility recommendation for sites recorded during the survey, and the finding of effect on cultural resource in the proposed APE (see Preferred Alternative 2, proposed village in Training Area 12, EA, page ES-1). Only four archeological sites were recorded in the entire 1,970 acres, none were found to meet the requirements for Tier 1 or Tier 2 under our Significance Standards, and we are recommending a determination of Not Eligible for the National Register for each. And, therefore, as to the proposed action, we would also make a finding of No Historic Properties Affected.

If you have any questions or concerns please do not hesitate to contact Conservation Branch Chief Brian Knight at (915) 568-6746 or email at brian.d.knight@us.army.mil. For comments directly related to the EA, please provide them to POC listed in the enclosed NEPA letter. As always, thank you for your support of cultural resource management on Fort Bliss.

Sincerely,

Brian Knight, RPA
Chief, Conservation Branch

Attachments

Concur with recommendations as proposed.

John R. Eit 28. Aug. 2012
for NM State Historic Preservation Officer

We need significance and research standards that are appropriate for historic ranches.

94847



DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BLISS
1 PERSHING ROAD
FORT BLISS, TX 79916-3803

IMBL-PWE

Ms. Jan V. Biella, RPA
Interim State Historic Preservation Officer
State of New Mexico Office of Cultural Affairs
Historic Preservation Division
Bataan Memorial Building
407 Galisteo Street
Santa Fe, NM 87501



Re: Draft Finding of No Significant Impact Environmental Assessment for the Construction and Training Use Sacramento Mountain Villages, McGregor Range, Fort Bliss, New Mexico

Dear Ms. Biella:

Fort Bliss has prepared an Environmental Assessment (EA) to evaluate potential environmental impacts resulting from the construction and training use of up to two mountain villages in the Sacramento Mountains north of NM 506 on McGregor Range. The mountain villages will mimic those found in current operational theaters and will provide realistic training opportunities for Soldiers prior to deployment.

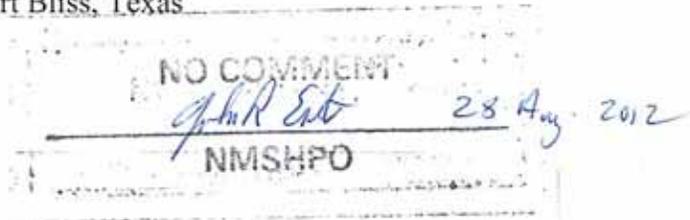
Enclosed for your review is the EA and Draft Finding of No Significant Impact for the construction and training use of Mountain Villages in the Sacramento Mountains on Fort Bliss. Please forward any comments you have concerning this draft to Mr. John F. Barrera, NEPA Program Manager, Bldg. 624S Taylor Rd, Fort Bliss, Texas 79916 no later than 30 days from this letter or email to john.f.barrera.civ@mail.mil.

Thank you in advance for your review of this document. Feel free to contact Mr. Barrera if you have any questions or need further clarification.

Sincerely,

Brian D. Knight, M.A., RPA
Chief, Conservation Branch
Environmental Division
Directorate of Public Works
Fort Bliss, Texas

Encl.





STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

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TO THE COMMISSION
James S. Lane, Jr.

Daniel E. Brooks, Deputy Director

August 13, 2012

Mr. John F. Barrera
NEPA Program Manager
Bldg. 624S Taylor Rd.
Fort Bliss, TX 79916

*Sacramento Mountain Training Villages Construction and Use Draft Environmental Assessment,
McGregor Range, Fort Bliss; NMDGF Doc. No. 15251*

Dear Mr. Barrera:

The Department of Game and Fish (Department) has reviewed the draft environmental assessment (DEA) and finding of no significant impact for the above referenced project. The DEA proposes construction of one or two mountain training villages in the Sacramento Mountains foothills on McGregor Range of Fort Bliss, north of New Mexico Highway 506, to provide realistic training opportunities for soldiers prior to deployment.

Regarding the potential effects of implementing preferred alternative 2 on gray vireo, a state threatened species under the New Mexico Wildlife Conservation Act, page 34 states:

Alternative 2 could occur in habitat that is utilized by the gray vireo and other bird species protected by the MBTA. The canyons and draws in this part of the Sacramento Mountains have known habitat for the gray vireo, and the canyon leading to the proposed mountain village in TA-12 has had gray vireo sightings in recent surveys; however only a small percentage of habitat is located within the vicinity of the project area. Any impacts on the gray vireo and other migratory birds would be minimal because construction work would be carried out in the fall and winter months to coincide with the non-breeding season for these species or if construction occurs during the spring, a preconstruction survey for bird activity or nesting colonies would be conducted and active nests would be avoided, if discovered.

Table 3-1 and text on page 34 suggests implementing the other action alternatives would have the same effects on gray vireo. However, there is no clarification in the DEA identifying whether one action alternative would have a greater or lesser adverse effects on nesting gray vireos, based on potential habitat or previous survey data at the two possible mountain village construction sites. There is no cumulative analysis of effects to gray vireo for implementing alternative 4, which would implement construction of both mountain training villages. Also, no analysis is provided of the potential effects to gray vireos of implementing off-road vehicle training activities using light, medium, and/or heavy wheeled military vehicles within the mountain village off-road zone. The zone would include 868 acres for Alternative 2; 780 acres for Alternative 3; and 1,648 acres for Alternative 4.

In addition, no information is provided within the DEA analyzing the potential effects of implementing any of the action alternatives, including the off-road vehicle training, on mule deer, which are known to occur in and around the proposed project areas.

We request that the final environmental assessment more clearly analyze the potential effects of implementing each action alternative to gray vireo and mule deer, to fulfill the Council on Environmental Quality (CEQ) regulations (40 CFR 1502.14)".

The Department will support the implementation of the alternative with the least adverse effect on nesting gray vireos and mule deer. Until additional information is included in the DEA, we are unable to provide additional comments.

We appreciate the opportunity to comment on this project. Should you have any questions regarding our comments, please contact Mark Watson, Terrestrial Habitat Specialist at (505) 476-8115 or mark.watson@state.nm.us.

Sincerely,



Matt Wunder, Ph.D.
Chief, Conservation Services Division

MW/mlw

CC: USFWS NMES Field Office
George Farmer, Southeast Area Habitat Specialist, NMDGF
Leon Redman, SE Area Operations Chief, NMDGF
Mark Watson, Conservation Services Habitat Specialist, NMDGF

Responses to letter received from New Mexico Department of Game and Fish dated 13 August 2012:

Fort Bliss appreciates the comments received from New Mexico Department of Game and Fish regarding the Sacramento Mountain Training Villages Construction and Use Draft Environmental Assessment, McGregor Range, Fort Bliss; NMDGF Doc. No. 15251. These comments have been conscientiously examined and evaluated by Fort Bliss DPW-E personnel and changes made to the document in Sections 3.5.3.2 through 3.5.3.4.



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005
www.blm.gov/nm



In Reply Refer To:

1795 (NML03220)

AUG 22 2012

Mr. John F. Barrera
NEPA Program Manager
Bldg. 624S Taylor Rd.
Fort Bliss, TX 79916

Re: Draft Finding of No Significant Impact Environmental Assessment for the Construction and Training Use Sacramento Mountain Villages, McGregor Range, Fort Bliss, New Mexico

Dear Mr. Barrera:

Thank you for the opportunity to review and provide comments to the above referenced environmental assessment. Enclosed please find the consolidated comments provided by our resources staff. If you should have any questions, please contact Ray Lister at (575) 525-4367 or via email at rlister@blm.gov.

Sincerely,

Bill Childress
District Manager

1 Enclosure

BLM Las Cruces District Comments to Draft EA for Construction and Training Use of Sacramento Mountain Villages

1.	<p>Table ES-1, Alt. 2; Land Use and Aesthetics – Describes area/resources affected then sums up impact as “...which would have minimal impacts as a result of the Preferred Alternative.” As elsewhere in the document is misses the point that the impact is not from just the small acreage of the village site, but the expanded boundary of area that will be off limits to public and BLM during training missions, including BLM’s livestock contractors.</p>
2.	<p>Page 17, Table 3-1; Land Use and Aesthetics – Need more detail of the acreage actually impacted and time frame by the closure, for public/BLM use (i.e. what is the acreage of the training area that would be closed, during missions and how often).</p>
3.	<p>Page 21, lines 41 – 45 – This is incorrect description/use of terminology for VRM. “Aesthetic value” is not part of the equation. Recommend EA authors review VRM guidance at this link: http://www.blm.gov/style/medialib/blm/wo/Information_Resources_Management/policy/blm_manual.Par.34032.File.dat/8400.pdf</p> <p>Recommend rewording sentences to: “To protect the quality of the scenic (visual) values on BLM managed lands (including co-managed lands), the BLM has established visual resource management (VRM) classes through the Resource Management Plan process. The four classes categories (I through IV), indicate varying levels scenic quality, sensitivity level, and distance zones. Each class has an objective which prescribes the amount of change allowed in the characteristic landscape. Both mountain village sites in TA-12 and TA-13 are located within VRM Class IV where the level of change to characteristic landscape can be high. The intent of this class is to provide for management activities that require major modification of existing character of the landscape. However, every effort should be made to lessen the impact of these activities (reference McGregor Range Draft Resource Management Plan Amendment and Environmental Impact Statement, January 2006, page 3-50).</p>
4.	<p>Page 23, lines 29 – 36 – This paragraph misrepresents the level of impact to public use. Should describe the effect of the development and use of the approximately 5.4 acres, which is actually the wholesale closure to public use of ??? acreage, based on time utilized for training activities. The way this is described, it indicated that the impact would be “less than 0.01 percent” of the available acreage. The impact to the public is much higher given the entire training area(s) would be off limits during active training.</p>
5.	<p>Page 34, lines 30-32 – Should provide more details on how animals will be managed, contained, and escaped animals retrieved. There is an issue with feral animals in Otero County and NM and some level of assurance that these staged animals will not add to the problem, should be provided, or the impacts should be recognized.</p>

6.	<p>Draft FONSI, Section 1.0, Proposed Action, lines 5-8 – should acknowledge that Fort Bliss has already constructed 2 village training facilities and the proposed action for this EA is to construct additional villages. It should also be explained further how/why the two existing facilities were constructed without an EA (presumably under the existing EISs) and these proposed villages now require an EA.</p>
7.	<p>Draft FONSI, Section 2.0, lines 39-46 – If these new proposed training facilities were not addressed in the previous EISs, thus requiring a separate EA, wouldn't the impacts of these new training facilities be in addition to the previous cumulative impact analysis?</p>
8.	<p>Draft FONSI – All previous NEPA documents relative to training on McGregor Range have had a range of alternatives that have been progressive in nature, ie. each alternative includes the previous alternative plus additional development. This EA is similar in that each Alternative 2 and 3 are separate villages and Alternative 4 would include construction of both villages. The big difference with this EA is that Alternative 2 is labeled as the “preferred alternative”. This is would be somewhat misleading for a couple reasons: 1.) Previous NEPA documents have chosen the most cumulative alternative, and 2.) The description for Alternative 4 in the Draft FONSI lines 33-35 indicates this would provide the most flexibility for scheduling training leading one to believe this might be the preferred alternative.</p>
9.	<p>Section 1.1, page 1, line 23 – states Fort Bliss has constructedvillages. Isn't it true that two villages have already been constructed using the previous EIS? If so, this conflicts with line 33 which states that Fort Bliss presently does not have any realistic mountain village training facilities.</p>
10.	<p>Section 1.1, page 1, line 44 – suggest adding for clarification thatthis EA would be tiered to the two previous EISs and serve to change land use designations allowing for construction of one or more mountain village training facilities.</p>
11.	<p>Section 3.1.2.2, page 23, lines 42-45 – What do you mean when you state that the cattle grazing in these areas could possibly be included with the live animals that would be brought to the mountain village? Adding salt or protein block to draw in cattle under BLM grazing contracts has not been discussed with BLM. This may add to the functionality of the village from a Fort Bliss training perspective, however, increasing the potential adverse impact to cattle from live fire training is not desirable from BLM's contractual responsibility perspective.</p>
12.	<p>Section 3.1.2.2, page 23, lines 29-36 – issue of how much area would be closed to BLM and public recreation is already brought forward in comment 4. If not mistaken, basically everything north of State Route 506 is closed to BLM and public access during live fire trainings. This should be the area of analysis.</p>
13.	<p>Section 3.1.2.2, page 24, line 2-4 – How will water line be protected or buried, and who will do it? How will water trough be protected and avoided? Water tanks and troughs have already been damaged during live fire trainings. What is the mitigation if these facilities are damaged in the future? Damage to water lines and the inability for BLM to enter the area in a reasonable</p>

	<p>time frame for repairs could impact beneficial use requirements of Fort Bliss water rights. In addition, these water lines supply water to wildlife and livestock in other Training/Grazing Units to the south. If water supply is interrupted, it would impact BLM contractual agreements for livestock grazing.</p>
14.	<p>Section 3.1.2.2, page 24, lines 12-19, How will troops know where the WSA boundary is? What mitigations or assurances are proposed to ensure there will be no off road travel in the WSA? The viewshed analysis seems to focus on whether or not the village proper can be seen from the WSA. Assuming the viewshed analysis is appropriate, why not include the potential impacts to the viewshed from off road vehicle use and the potential for establishment of new roads, erosion, etc, from off road use? Alternative 2 does not identify how many acres would be impacted within the off-road zone. Alternative 3 states 780 acres (line 33). Same comment for Alternative 3 regarding indirect impacts of off-road use to viewshed analysis.</p>
15.	<p>Section 3.1.2.3, page 24, line 37-41 - Similar comment as for Alternative 2 regarding amount of acres removed from recreational use. It is not just the village site, it is the larger area (most likely everything north of US 506) that would be impacted.</p>
16.	<p>Section 3.1.2.3, page 26, lines 1-7 – same comment as for Alternative 2, The main waterline is above ground in many places and may not be feasible to bury. May also be a cultural or historical resources issue. Having said that, how will this line be buried or protected and who will do it? How will water troughs be protected and avoided? What mitigations will be put in place to replace/repair damaged facilities? These water lines provide water to the rest of McGregor Range. BLM will need access to make repairs and/or address freezing issues during cold weather training months. The 4 hours twice per week would be adequate. Coordination with the POC and Fort Bliss monitors has resulted in additional access opportunities for these purposes.</p>
17.	<p>Section 3.2.2.2, page 27, lines 39-43 – impacts to soils as a result of training activities would also be a function of slope and time of year (i.e. soil moisture). As per figure 2.1, much of this area has slopes over 30%. If off-road travel occurs to any degree within these areas, there will certainly be impacts to soils (and viewshed analysis) that may exceed “moderate”. Same comment for Alternative 3 and 4.</p>
18.	<p>Section 3.5.2, page 33, lines 22-19 – states Kuenzler hedgehog cactus potential habitat exists, however, surveys confirmed that the plant does not exist. Page 34, line 1 makes the determination that the proposed action may affect, but is not likely to adversely affect the Kuezler hedgehog cactus. If surveys have been conducted and confirmed they don't exist, wouldn't this be rationale for a “no affect” determination? If a may affect has been determined appropriate, you need to explain further that Section 7 consultation under ESA has been initiated and/or concurrence from USFWS has been received.</p>
19.	<p>Section 3.5.3.2, page 34, line 15 – states construction equipment would be cleaned of all dirt, mud, and plant debris....to prevent spread of noxious weeds. What about military training vehicles being brought into the area?</p>

20.	Section 3.5.3.2, page 34, line 28 – states that active nests would be avoided. If the village site has been selected and analyzed, I doubt active nests would be avoided if construction were to occur during the breeding season. Recommend simply stating that this may occur and whether or not this would impact the species at the local or population level.
21.	Section 5.3.3.2, page 34, line 30-32 – same comment as number 5 above. What mitigation measures are in place for containment and/or retrieval of escaped animals? Also, it is stated here that all Federal and State regulations pertaining to the use of these animals will be followed. This should be stated in the proposed action and/or mitigation measures. This should also state ...use and movement of these animals....If these animals are being brought in from out of state, there are state regulations that apply to animals being brought in from out of state.
22.	Section 3.7.2.2, page 38, line 23-24 – Dust suppression methods are not included in mitigation measures. This should coincide with SWPP guidance language in mitigation measures.
23.	Page 40, line 24 – Should be Wilderness Study Areas in heading. There are no wilderness areas.
24.	Section 5.0, Mitigation Measures, page 51: Line 5-6 – requires preconstruction survey for bird activity, but doesn't state what the resulting mitigation would be if active nest are found. See also comment 20. Above. Line 9-11 – what about road maintenance on other roads being utilized for ingress and egress to training facilities and within the training area? Line 15 – same comment as 19. Above regarding cleaning vehicles.
25.	Page 52, line 1-5 – same comment as 13. And 16. Above. Who will bury water lines? How will water tanks be protected or avoided? What mitigations are in place to mitigate damages should/when they occur?
26.	Section 3.13, page 48, lines 21-27 – This analysis only considers potential wildfire ignition from within the village site proper, yet lines 3-5 acknowledge that all types of training activities could cause wildfire. Since these types of activities would be occurring in the larger training area (1km area around the village or more), there should be a discussion of the potential for wildfire ignition within this larger area. This would be more consistent with the analysis for Alternative 3 which seems to consider the vegetation type, etc. around the village within the larger training area.
27.	Section 3.13.2.3, page 48, lines 31-37 make reference to a fuel reduction thinning project. How big is it? Is this covered in a separate EA? Is this already being implemented? This description needs to be consistent with Table 3-1, page 19 under Alternative 3 for Wildlife Fire. Also, if this is a mitigation measure, why not include in the list of mitigations?

Environmental Assessment for the Construction and Training Use of Sacramento Mountain Villages, McGregor Range, Fort Bliss, New Mexico

**Fort Bliss Response Matrix
BLM, Las Cruces District Comments of 22 August 12**

Comment Number	Response
1	Assumption is mistaken that additional area will be made unavailable to the public and BLM contractors. The village areas have been analyzed for military training purposes in previous NEPA analysis (e.g., GFS EIS) which prohibits non-military access during training events. As with any other training activities, the public and BLM contractors may use the areas when not in military use. The estimated annual use of the village areas is potentially 250 days, also within the analysis presented in the GFS EIS.
2	Section in Table 3-1 has been revised as follows: The proposed mountain village is located in a BLM-designated grazing area impacting approximately 5.4 acres out of the 270,000 acres (< 0.01 percent) of available grazing area on McGregor Range. The site is also located in a designated recreational use area analyzed for military training co-use in the GFS EIS. Recreational use areas are closed when used by Fort Bliss for training. For safety and operational reasons, the total acreage closed to the public during training would be more than the 5.4 acres immediately surrounding the village and would at least be approximately 868 acres as delineated by the one-kilometer-radius off-road zone. Total training days per year would not exceed 250, with activities occurring during the day and at night. The existing land use designation for the proposed mountain village site and off-road zone in TA-12 would need to be modified to a proposed land use designation that allows for on-road and off-road vehicle maneuvering for light, medium, and heavy, wheeled vehicles, which would allow for Stryker usage. Tracked vehicles would be prohibited from using the area within the mountain village off-road zone. The proposed mountain village is located within a LUA. The LUA designation would be removed and reclassified to allow for the construction and training use of the mountain village. Additionally, the proposed mountain village is located in a BLM visual resource management (VRM) area with a Class IV designation; the Preferred Alternative would comply with the classification. Only a very small portion of the village site would be within the viewshed of the Culp Canyon Wilderness Study Area (WSA). Since the mountain village would be within a mountainous area, it would not be very visible and, therefore, would not dominate the view corridor. There would be minimal land use and visual aesthetics impacts from the Preferred Alternative.
3	This section has been re-worded to address BLM visual resource management (VRM) classes.
4	Paragraph changed to emphasize that recreational use may still occur when land is not being used for training. The land is not being permanently removed from recreational use. Training use impact has been previously analyzed and approved in the GFS EIS (2010)
5	The following has been added to Section 3.5.3.2: "Planning would include measures to ensure no animals escape to potentially create a feral population."
6	No change to wording of Draft FONSI. The two villages the commenter is referring to are contingency operating locations (COLs) analyzed in the GFS EIS. The two proposed villages in the EA would require larger off-road maneuver areas around them and necessitate separate NEPA analysis.
7	Change made to Draft FONSI and Cumulative Impacts: "The Proposed Action would incrementally increase off-road maneuver capabilities not previously analyzed in these documents."
8	Guidance from Army trainers during development of the EA was to select Alternative 2 the preferred alternative as it would meet any foreseeable training needs. Alternatives 3 and 4 were, however, carried through for analysis.
9	The village described in the preferred alternative would be the first village of this type built of actual mud brick, mortar, and wood in mountainous terrain on Fort Bliss.

10	The land at the village sites would remain training area. The change would be that more area would be opened up for off-road vehicle maneuver in a one-km radius around the villages.
11	Concur with this comment. Deleted two sentences beginning with: “The cattle located within the grazing areas...”
12	The 868 acres would be the area directly impacted from training-related ground disturbance. It is acknowledged that a larger area would need to be temporarily restricted from public access. The following was added to end of first paragraph, Sec. 3.1.2.2: “Much more area may be made temporarily off-limits to the public during exercises, depending upon type and scale of training.”
13	Fort Bliss will follow provisions in the MOA (2007) between Fort Bliss and BLM concerning use of McGregor Range. Fort Bliss acknowledges that BLM will have access to livestock infrastructure for repairs and maintenance for at least 4 hours, twice per week.
14	Culp Canyon Road forms a clear boundary with the Culp Canyon WSA and Soldiers are consistently instructed to avoid entering the area north of this road. Off-road zone comment: The first paragraph of this section estimates that 868 acres would be affected from off-road use.
15	Section 3.1.2.3 (Alt. 3), first paragraph states that approximately 780 acres would be affected in the off-road zone.
16	Same response as #13: Fort Bliss will follow provisions in the MOA (2007) between Fort Bliss and BLM concerning use of McGregor Range. Fort Bliss acknowledges that BLM will have access to livestock infrastructure for repairs and maintenance at least 4 hours, twice per week.
17	Soil management and prevention of accelerated soil erosion is conducted by DPW-E and the ITAM program. The DPW-E range liaison team will be asked to inspect the village areas after significant training activities and report on soil and landscape condition. Soil erosion mitigation measures from Sec. 3.2.2.2 were also placed in the Summary of Mitigation Measures (Sec. 5.0).
18	Sentence in Sec. 3.5.2 lines 21-25 changed to: “Only one species on the ESA list, Kuenzler hedgehog cactus (<i>Echinocereus fendleri</i> var. <i>kuenzleri</i>), has potential habitat on the extreme northern McGregor Range in the Sacramento Mountains.” Section 3.5.3.2, 2 nd sentence changed to: “Thus, the implementation of Alternative 2 would not adversely affect the Kuenzler hedgehog cactus species listed under the ESA.” Same was done for Alternatives 3 and 4. Changes were also made to Table ES-1 and 3-1.
19	DPW-E has established a program to reduce or eliminate of the spread of noxious weeds on Fort Bliss. The presence of noxious weeds is tracked in specific places and eradication measures implemented. Washing of military vehicles occurs on an as-needed basis.
20	Section rewritten as follows: “Impacts on migratory birds would be minimal because construction work would be carried out in the fall and winter months to coincide with the non-breeding season for these species. If construction occurs during the spring, a preconstruction survey for bird activity or nesting colonies would be conducted and, if detected, appropriate mitigation measures applied through direction from DPW-E.” Same change was made to Tables ES-1 and 3-1 and in the Summary of Mitigation Measures (Sec. 5.0).
21	Same response as comment #5: Wording added: “Planning would include measures to ensure no animals escape to potentially create a feral population.” Also added to Summary of Mitigation Measures (Sec 5.0).
22	Mitigation sentence from Sec. 3.7.2.2 added to Summary of Mitigations Measures (Sec 5.0): “Dust suppression methods should be implemented to minimize fugitive dust, including wetting solutions applied to construction areas.”
23	Subheading corrected to “...Wilderness Study Area”
24	Wording on bullet #1 changed to read: “To minimize impacts on migratory birds, all site preparation would require either a preconstruction survey for bird activity and appropriate mitigations applied if detected, or that the work would be carried out in the fall and winter months to coincide with the non-breeding season for these species.” Same responses as comment number 19.
25	Same response as #16.
26	No change made. It was mentioned this section that control of wildland fires is spelled out in the Fort Bliss INRMP and that fires on McGregor Range are controlled through cooperation between Fort Bliss Fire Department and BLM.
27	A fuel thinning project would be performed before village construction commences.

APPENDIX B
AIR EMISSIONS CALCULATIONS

CALCULATION SHEET-COMBUSTION EMISSIONS-CONSTRUCTION

Assumptions for Combustion Emissions						
Type of Construction Equipment	Num. of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs	
Water Truck	1	300	8	180	432000	
Diesel Road Compactors	0	100	8	15	0	
Diesel Dump Truck	1	300	8	15	36000	
Diesel Excavator	1	300	8	15	36000	
Diesel Hole Trenchers	1	175	8	60	84000	
Diesel Bore/Drill Rigs	1	300	8	60	144000	
Diesel Cement & Mortar Mixers	1	300	8	60	144000	
Diesel Cranes	1	175	8	60	84000	
Diesel Graders	1	300	8	15	36000	
Diesel Tractors/Loaders/Backhoes	1	100	8	60	48000	
Diesel Bulldozers	1	300	8	15	36000	
Diesel Front-End Loaders	1	300	8	15	36000	
Diesel Forklifts	2	100	8	180	288000	
Diesel Generator Set	2	40	8	180	115200	

Emission Factors						
Type of Construction Equipment	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	PM-10 g/hp-hr	PM-2.5 g/hp-hr	SO2 g/hp-hr
Water Truck	0.440	2.070	5.490	0.410	0.400	0.740
Diesel Road Compactors	0.370	1.480	4.900	0.340	0.330	0.740
Diesel Dump Truck	0.440	2.070	5.490	0.410	0.400	0.740
Diesel Excavator	0.340	1.300	4.600	0.320	0.310	0.740
Diesel Trenchers	0.510	2.440	5.810	0.460	0.440	0.740
Diesel Bore/Drill Rigs	0.600	2.290	7.150	0.500	0.490	0.730
Diesel Cement & Mortar Mixers	0.610	2.320	7.280	0.480	0.470	0.730
Diesel Cranes	0.440	1.300	5.720	0.340	0.330	0.730
Diesel Graders	0.350	1.360	4.730	0.330	0.320	0.740
Diesel Tractors/Loaders/Backhoes	1.850	8.210	7.220	1.370	1.330	0.950
Diesel Bulldozers	0.360	1.380	4.760	0.330	0.320	0.740
Diesel Front-End Loaders	0.380	1.550	5.000	0.350	0.340	0.740
Diesel Forklifts	1.980	7.760	8.560	1.390	1.350	0.950
Diesel Generator Set	1.210	3.760	5.970	0.730	0.710	0.810

CALCULATION SHEET-COMBUSTION EMISSIONS-CONSTRUCTION

Emission factors (EF) were generated from the NONROAD2005 model for the 2006 calendar year. The VOC EFs includes exhaust and evaporative emissions. The VOC evaporative components included in the NONROAD2005 model are diurnal, hotsoak, running loss, tank permeation, hose permeation, displacement, and spillage. The construction equipment age distribution in the NONROAD2005 model is based on the population in U.S. for the 2006 calendar year.

Emission Calculations							
Type of Construction Equipment	VOC tons/yr	CO tons/yr	NOx tons/yr	PM-10 tons/yr	PM-2.5 tons/yr	SO2 tons/yr	CO2 tons/yr
Water Truck	0.209	0.985	2.614	0.195	0.190	0.352	255.170
Diesel Road Paver	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Dump Truck	0.017	0.082	0.218	0.016	0.016	0.029	21.264
Diesel Excavator	0.013	0.052	0.182	0.013	0.012	0.029	21.276
Diesel Hole Cleaners/Trenchers	0.047	0.226	0.538	0.043	0.041	0.069	49.598
Diesel Bore/Drill Rigs	0.095	0.363	1.135	0.079	0.078	0.116	84.057
Diesel Cement & Mortar Mixers	0.097	0.368	1.155	0.076	0.075	0.116	84.057
Diesel Cranes	0.041	0.120	0.529	0.031	0.031	0.068	49.080
Diesel Graders	0.014	0.054	0.188	0.013	0.013	0.029	21.276
Diesel Tractors/Loaders/Backhoes	0.098	0.434	0.382	0.072	0.070	0.050	36.556
Diesel Bulldozers	0.014	0.055	0.189	0.013	0.013	0.029	21.276
Diesel Front-End Loaders	0.015	0.061	0.198	0.014	0.013	0.029	21.272
Diesel Aerial Lifts	0.628	2.463	2.717	0.441	0.428	0.302	219.243
Diesel Generator Set	0.154	0.477	0.758	0.093	0.090	0.103	74.558
Total Emissions	1.443	5.742	10.802	1.100	1.070	1.321	958.684

Conversion factors	
Grams to tons	1.102E-06

CALCULATION SHEET-TRANSPORTATION COMBUSTION EMISSIONS-CONSTRUCTION

Construction Worker Personal Vehicle Commuting to Construction Site-Passenger and Light Duty Trucks										
Pollutants	Emission Factors			Assumptions			Results by Pollutant			
	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile		Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61		250	180	20	20	1.35	1.60	2.95
CO	12.4	15.7		250	180	20	20	12.30	15.57	27.87
NOx	0.95	1.22		250	180	20	20	0.94	1.21	2.15
PM-10	0.0052	0.0065		250	180	20	20	0.01	0.01	0.01
PM 2.5	0.0049	0.006		250	180	20	20	0.00	0.01	0.01
CO2	369	511		250	180	20	20	365.97	506.81	872.78

Heavy Duty Trucks Delivery Supply Trucks to Construction Site										
Pollutants	Emission Factors			Assumptions			Results by Pollutant			
	10,000-19,500 lb Delivery Truck	33,000-60,000 lb semi trailer rig		Mile/day	Day/yr	Number of trucks	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	0.29	0.55		250	180	2	2	0.03	0.05	0.08
CO	1.32	3.21		250	180	2	2	0.13	0.32	0.45
NOx	4.97	12.6		250	180	2	2	0.49	1.25	1.74
PM-10	0.12	0.33		250	180	2	2	0.01	0.03	0.04
PM 2.5	0.13	0.36		250	180	2	2	0.01	0.04	0.05
CO2	536	536		250	180	2	2	53.16	53.16	106.32

Operational Emissions Associated with Proposed Action										
Pollutants	Emission Factors			Assumptions			Results by Pollutant			
	Passenger Cars g/mile	Combat Training Transport - Strykers		Mile/day	Day/yr	Number of Cars	Number of Strykers	Total Emissions cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	0.29		160	250	60	12	3.60	0.15	3.75
CO	12.4	1.32		160	250	60	12	32.80	0.70	33.49
NOx	0.95	4.97		160	250	60	12	2.51	2.63	5.14
PM-10	0.0052	0.12		160	250	60	12	0.01	0.06	0.08
PM 2.5	0.0049	0.13		160	250	60	12	0.01	0.07	0.08
CO2	369	536		160	250	60	12	975.93	283.52	1,259.45

Truck Emission Factor Source: MOBILE6.2 USEPA 2005 Emission Facts: Average annual emissions and fuel consumption for gasoline-fueled passenger cars and light trucks. EPA 420-F-05-022 August 2005. Emission rates were generated using MOBILE.6 highway.

CALCULATION SHEET-TRANSPORTATION COMBUSTION EMISSIONS-CONSTRUCTION

Conversion factor: gms to tons	0.000001102
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Carbon Equivalents	Conversion Factor
N2O or NOx	311
Methane or VOCs	25

Source: EPA 2010 Reference, Tables and Conversions, Inventory of U.S. Greenhouse Gas Emissions and Sinks; <http://www.epa.gov/climatechange/emissions/usinventoryreport.html>

CARBON EQUIVALENTS

Construction Commuters	Conversion	Emissions CO2 tons/yr	Total CO2
VOCs	25	73.64	
NOx	311	2.15	
Total		75.79	948.58

Delivery Trucks	Conversion	Emissions CO2 tons/yr	Total CO2
VOCs	25	2.08	
NOx	311	541.95	
Total		544.03	650.35

Kirtland AFB staff and Students	Conversion	Emissions CO2 tons/yr	Total CO2
VOCs	25	93.76	
NOx	311	1,599.00	
Total		1,692.76	2,952.22

CALCULATION SHEET-FUGITIVE DUST-CONSTRUCTION

Construction Fugitive Dust Emissions

Construction Fugitive Dust Emission Factors

General Construction Activities	Emission Factor	Units	Source
New Road Construction	0.19 ton PM10/acre-month	PM10/acre-month	MRI 1996; EPA 2001; EPA 2006
	0.42 ton PM10/acre-month	PM10/acre-month	MRI 1996; EPA 2001; EPA 2006

PM2.5 Emissions

PM2.5 Multiplier 0.10 (10% of PM10 emissions assumed to be PM2.5) EPA 2001; EPA 2006

Control Efficiency

0.50 (assume 50% control efficiency for PM10 and PM2.5 emissions) EPA 2001; EPA 2006

Project Assumptions

Construction Area (0.19 ton PM10/acre-month)	Conversion Factors
Duration of Soil Disturbance in Project	0.000022957 acres per feet
Length	5280 feet per mile
Length (converted)	
Width	
Area	

Staging Areas

Duration of Construction Project	6 months
Length	miles
Length (converted)	feet
Width	feet
Area	2.00 acres

	Project Emissions (tons/year)		
	PM10 uncontrolled	PM10 controlled	PM2.5 controlled
Construction Area (0.19 ton PM10/acre)	45.60	22.80	4.56
Staging Areas	0.38	0.19	0.04
Total	45.98	22.99	4.60

References:

- EPA 2001. *Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985-1999*. EPA-454/R-01-006. Office of Air Quality Planning and Standards, United States Environmental Protection Agency. March 2001.
- EPA 2006. *Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Pollutants*. Prepared for: Emissions Inventory and Analysis Group (C339-02) Air Quality Assessment Division Office of Air Quality Planning and Standards, United States Environmental Protection Agency. July 2006.
- MRI 1996. *Improvement of Specific Emission Factors (BACM Project No. 1)*. Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District, March 29, 1996.

Construction Fugitive Dust Emission Factors

General Construction Activities Emission Factor

0.19 ton PM10/acre-month Source: MRI 1996; USEPA 2001; USEPA 2006

The area-based emission factor for construction activities is based on a study completed by the Midwest Research Institute (MRI) Improvement of Specific Emission Factors (BACM Project No. 1), March 29, 1996. The MRI study evaluated seven construction projects in Nevada and California (Las Vegas, Coachella Valley, South Coast Air Basin, and the San Joaquin Valley). The study determined an average emission factor of 0.11 ton PM10/acre-month for sites without large-scale cut/fill operations. A worst-case emission factor of 0.42 ton PM10/acre-month was calculated for sites with active large-scale earth moving operations. The monthly emission factors are based on 168 work-hours per month (MRI 1996). A subsequent MRI Report in 1999, Estimating Particulate Matter Emissions from Construction Operations, calculated the 0.19 ton PM10/acre-month emission factor by applying 25% of the large-scale earthmoving emission factor (0.42 ton PM10/acre-month) and 75% of the average emission factor (0.11 ton PM10/acre-month).

The 0.19 ton PM10/acre-month emission factor is referenced by the USEPA for non-residential construction activities in recent procedures documents for the National Emission Inventory (USEPA 2001; USEPA 2006). The 0.19 ton PM10/acre-month emission factor represents a refinement of USEPA's original AP-42 area-based total suspended particle (TSP) emission factor in Section 13.2.3 Heavy Construction Operations. In addition to the USEPA, this methodology is also supported by the South Coast Air Quality Management District and the Western Regional Air Partnership (WRAP) which is funded by the USEPA and is administered jointly by the Western Governor's Association and the National Tribal Environmental Council. The emission factor is assumed to encompass a variety of non-residential construction activities including building construction (commercial, industrial, institutional, governmental), public works, and travel on unpaved roads. The USEPA National Emission Inventory documentation assumes that the emission factors are uncontrolled and recommends a control efficiency of 50% for PM10 and PM2.5 in PM nonattainment areas.

New Road Construction Emission Factor

0.42 ton PM10/acre-month Source: MRI 1996; USEPA 2001; USEPA 2006

The emission factor for new road construction is based on the worst-case conditions emission factor from the MRI 1996 study described above (0.42 tons PM10/acre-month). It is assumed that road construction involves extensive earthmoving and heavy construction vehicle travel resulting in emissions that are higher than other general construction projects. The 0.42 ton PM10/acre-month emission factor for road construction is referenced in recent procedures documents for the USEPA National Emission Inventory (USEPA 2001; USEPA 2006).

PM2.5 Multiplier

0.10

PM2.5 emissions are estimated by applying a particle size multiplier of 0.10 to PM10 emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (USEPA 2006).

Control Efficiency for PM10 and PM2.5

0.50

The USEPA National Emission Inventory documentation recommends a control efficiency of 50% for PM10 and PM2.5 in PM nonattainment areas. Wetting controls will be applied during project construction (USEPA 2006).

References:

USEPA 2001. *Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985-1999*. USEPA-454/R-01-006. Office of Air Quality Planning and Standards, United States Environmental Protection Agency. March 2001.

USEPA 2006. *Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Pollutants*. Prepared for: Emissions Inventory and Analysis Group (C-339-02) Air Quality Assessment Division Office of Air Quality Planning and Standards, United States Environmental Protection Agency. July 2006.

MRI 1996. *Improvement of Specific Emission Factors (BACM Project No. 1)*. Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District, March 29, 1996.

ONGOING EMISSIONS FROM PORTABLE GENERATOR

Assumptions for Combustion Emissions					
Type of Construction Equipment	Num. of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs
Deisel Generator Set	2	25	8	250	100,000

Emission Factors						
Type of Construction Equipment	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	PM-10 g/hp-hr	PM-2.5 g/hp-hr	SO2 g/hp-hr
Deisel Generator Set	1.21	3.76	5.97	0.73	0.71	0.81
						587.3

Emission factors (EF) were generated from the NONROAD2008 model for the 2007 calendar year. The VOC EFs includes exhaust and evaporative emissions. The VOC evaporative components included in the NONROAD2008 model are diurnal, hotsoak, running loss, tank permeation, hose permeation, displacement, and spillage. The construction equipment age distribution in the NONROAD2008 model is based on the population in U.S. for the 2006 calendar year.

Emission Calculations						
Type of Construction Equipment	VOC tons/yr	CO tons/yr	NOx tons/yr	PM-10 tons/yr	PM-2.5 tons/yr	SO2 tons/yr
Deisel Generator Set	0.133	0.414	0.658	0.080	0.078	0.089
Total Emissions	0.133	0.414	0.658	0.080	0.078	0.089
						64.720

Conversion factors	
Grams to tons	0.000001102

PM-10 EMISSION CALCULATIONS FOR UNPAVED ROADS

Unpaved Surfaces at Industrial Sites

Source: AP-42, 13.2.2 Unpaved Surfaces
 Equation: $E = k (s/12)^a * (W/3)^b$

Units	PM-2.5	PM-10	Case Scenario
lb/VMT	0.02	0.23	Low
lb/VMT	0.32	3.15	High

VMT=Vehicle Miles Traveled

Unpaved Surfaces at Public Roads Dominated by Light Duty Vehicles

Equation: $E = \frac{k (s/12)^a * (S/30)^d}{(M/0.5)^c}$

Units	PM-2.5	PM-10	Case Scenario	Average PM-2.5	Average PM-10
lb/VMT	0.45	4.50	Low	0.2	6.3
lb/VMT	0.02	8.02	High		

Calculation:

Assumptions		PM-2.5/lbs/day	PM-10/lbs/day	PM-2.5/tons/year	PM-10/tons/year	Dust Control Efficiency (%)	PM-10 tons/year (controlled)
Miles of travel per day in project area	300	70	1878	8.8	234.7	71%	68.08

Assume active training days at the site:

250

PM-10 EMISSION CALCULATIONS FOR UNPAVED ROADS

Industrial Roads			Public Roads		
PM-2.5	PM-10	PM-30	PM-2.5	PM-10	PM-30
0.15	1.5	4.9	0.18	1.8	6

k= Source: 13.2.2-2

Industrial Roads			Public Roads		
PM-2.5	PM-10	PM-30	PM-2.5	PM-10	PM-30
0.9	0.9	0.7	1	1	1

a= Source: 13.2.2-2

Industrial Roads			Public Roads		
PM-2.5	PM-10	PM-30	PM-2.5	PM-10	PM-30
0.45	0.45	0.45			

b= Source: 13.2.2-2

Industrial Roads			Public Roads		
PM-2.5	PM-10	PM-30	PM-2.5	PM-10	PM-30
			0.2	0.2	0.3

c= Source: 13.2.2-2

Industrial Roads			Public Roads		
PM-2.5	PM-10	PM-30	PM-2.5	PM-10	PM-30
			0.5	0.5	0.3

d= Source: 13.2.2-2

E= size-specific emission factor (lb/VMT)

PM-10 EMISSION CALCULATIONS FOR UNPAVED ROADS

s= surface material silt content (%)	Low	Industrial Roads High	Public Roads High
	25.2	1.8	1.8
Source Table 13.2.2.-3			35
W= mean vehicle weight (tons)	Low	Industrial Roads High	Public Roads High
	290	2	1.5
Source Table 13.2.2.-3			3
M= surface material moisture content (%)	Low	Industrial Roads High	Public Roads High
	13	0.03	0.03
Source Table 13.2.2.-3			13
S = mean vehicle speed (mph)	Low	Industrial Roads High	Public Roads High
	43	5	10
Source Table 13.2.2.-3			55
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear (lb/VMT)	PM -2.5	PM-10	
	0.00036	0.00047	

Control Efficiency of Dust Suppressants

Application (gal/square yard)	Average Control Efficiency %
0.073	62%
0.11	68%
0.15	74%
0.18	80%
Median	71%

Source; AP 42 Table 13.2.2-5

CALCULATION SHEET-SUMMARY OF EMISSIONS

Construction Emissions for Criteria Pollutants (tons per year)										
Emission Source	VOC	CO	NOx	PM-10	PM-2.5	SO2	CO2	CO2 Equivalents	Total CO2	
Combustion Emissions	1.44	5.74	10.80	1.10	1.07	1.32	958.68	3395.65	4354.33	
Construction Site-Fugitive PM-10	NA	NA	NA	22.99	2.30	NA	NA	NA	NA	
Construction Workers Commuter & Trucking	3.03	28.32	3.89	0.06	0.06	NA	872.78	1287.01	2159.79	
Total emissions-CONSTRUCTION	4.47	34.06	14.70	24.15	3.43	1.32	1831	4683	6,514.12	
Ongoing emissions from commuters Strykers	3.75	33.49	5.14	0.08	0.08	NA	1259.45	1710.81	2970.27	
Emissions from Unpaved Roads	NA	NA	NA	68.08	8.80	NA	NA	NA	NA	
Deisel Generators	0.13	0.41	0.66	0.08	0.08	0.09	64.72	207.94	272.66	
Total Operational Emissions	3.75	33.49	5.14	68.15	8.88	0.00	1324.17	1918.75	3,242.93	
De minimis Threshold (1)	100	100	100	100	100	100	NA	NA	25,000	

1. Otero County is in attainment for all NAQQS

Carbon Equivalents	Conversion Factor
N2O or NOx	311
Methane or VOCs	25

Source: USEPA 2010 Reference, Tables and Conversions, Inventory of U.S. Greenhouse Gas Emissions and Sinks; <http://www.epa.gov/climatechange/emissions/usinventoryreport.html>

