

5 BEST MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES

5.1 INTRODUCTION

5.1.1 OVERVIEW

National Environmental Policy Act (NEPA) regulations require that an Environmental Impact Statement (EIS) include discussion of measures where required as a means to mitigate adverse environmental impacts. The intention of mitigation is to reduce the adverse effects of an action on the environment. Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations 1508.20) identify five ways to mitigate environmental effects:

- Avoiding the impact altogether
- Minimizing impacts
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
- Compensating for the impact by replacing or providing substitute resources or environments

5.1.2 APPROACH

The process of identifying ways to reduce potential environmental effects of the Proposed Action started early in the planning process for the proposed range enhancements and continued through preparation of the Final EIS. For example, sensitive resources were identified during development of conceptual plans for the proposed range enhancements. In addition, several existing Navy environmental programs and plans include established procedures, practices, or management actions that would restore, reduce, or eliminate perceived environmental risks of the Proposed Action. In accordance with the Department of Defense (DoD) and United States (U.S.) Department of the Navy (Navy) policies, these plans are reviewed and revised on a regular basis, and would be updated to reflect changes at the Fallon Range Training Complex (FRTC) if the Proposed Action were implemented.

Accordingly, impact restoration, reduction, or elimination measures are addressed in this EIS within the framework of existing Navy environmental programs and plans, where appropriate. For the purposes of this EIS, these and other measures are referred to as best management practices (BMPs). A BMP may encompass the installation of structural devices or the implementation of non-structural practices or activities, prohibitions of practices, operating procedures, maintenance procedures, and/or other management techniques. The Navy also currently employs standard practices or standard operating procedures (SOPs) to provide for the safety of personnel and equipment, as well as the success of the training and testing activities. In many cases, SOPs result in incidental environmental, socioeconomic, and cultural benefits, but they serve the primary purpose of providing for safety and mission success, and are implemented regardless of their secondary benefits. Implementation of both BMPs and SOPs has been considered in the Chapter 3 (Affected Environment and Environmental Consequences) environmental analyses for each resource.

If the analyses in Chapter 3 (Affected Environment and Environmental Consequences) indicated that potential impacts could not be avoided, minimized, or rectified to an acceptable level, then the Navy developed additional measures to reduce or eliminate the impact over time or compensate for the impact by replacing or providing substitute resources or environments. For the purposes of this EIS, such measures are referred to as proposed mitigation measures. As described in the Office of the Chief of

Naval Operations Instruction 5090.1D, the Navy is responsible for describing each proposed mitigation measure, its anticipated benefit, how the mitigation measures efficacy will be evaluated, implementation and monitoring methods, the responsible party, and the estimated completion date. The final mitigation and implementation methods will be committed to as part of the EIS decision-making process (the Record of Decision).

5.1.3 MONITORING

Environmental monitoring involves systematic sampling of physical and biological resources to derive knowledge of the environment, its resources, and processes or activities that affect them. Monitoring can be conducted for a number of purposes, including establishing environmental baselines and trends, informing decision-making for management actions, assessing the effects of natural and human influences, assessing the effectiveness of BMPs and mitigation measures, and ensuring compliance with environmental regulations. Monitoring is an important component of the Navy's natural resources management strategy implemented under the *Integrated Natural Resources Management Plan (INRMP)* and *Environmental Assessment for Naval Air Station, Fallon* (U.S. Department of the Navy 2014). Necessary updates to *INRMP* and associated monitoring programs would be accomplished during routine annual reviews conducted in cooperation with U.S. Fish and Wildlife Service (USFWS) and Nevada Department of Wildlife. This process will help to ensure that a comprehensive and consistent approach to monitoring is accomplished for the Navy-administered lands at the FRTC.

5.1.4 MITIGATION AND MONITORING REPORTING AND TRACKING

Results from mitigation and monitoring reporting will be used to support negotiations with regulatory agencies to ensure only effective mitigation measures are employed, to assist in adaptive management efforts, and to track completion of mitigation the action proponent has committed to implement in an environmental planning decision document.

5.2 SOILS

5.2.1 CURRENT REQUIREMENTS AND BEST MANAGEMENT PRACTICES

- Soils are managed from a natural resources perspective under the *Naval Air Station Fallon Integrated Natural Resources Management Plan* (U.S. Department of the Navy 2014). Actions focus on minimizing soil erosion.
- Potential soil contamination is addressed in the range condition assessment and subsequent 5-year reviews, in accordance with the *Range Sustainability Environmental Program Assessment Policy Implementation Manual* (U.S. Department of the Navy 2006).

5.2.2 PROPOSED BEST MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES

5.2.2.1 Proposed Best Management Practices

The current BMPs listed in Section 3.1.1.2.2 (Management Practices) would continue to be implemented under Alternatives 1 and 2, and existing programs and plans would be updated to reflect new conditions. The following BMPs would be implemented to avoid and minimize potential impacts on soils under Alternatives 1 and 2:

- Incidental fuel spills would be avoided during training by conducting all refueling activities in a secondary containment area.
- Drip pads would be placed under equipment when parked to avoid soil contamination from leaking fluids.

- Range condition assessment 5-year reviews would continue to be conducted, and appropriate steps would be taken, if necessary, to prevent or respond to a release or substantial threat of a release of munitions constituents of potential concern to off-range areas that could pose unacceptable risks to human health or the environment.
- Wind and water erosion would be minimized by adhering to standard operating procedures to operate vehicles on existing roads and two-track trails (unless otherwise noted in standard operating procedures or in the event of emergency).

5.2.2.2 Proposed Monitoring

No specific monitoring needs were identified for soils. However, the need for soil sampling, analysis, or monitoring would continue to be considered during range condition assessment 5-year reviews conducted under the Navy's Range Sustainability Environmental Program Assessment.

5.2.2.3 Proposed Mitigation Measures

No mitigation measures are warranted for soils based on the analysis presented in Section 3.1.3 (Environmental Consequences), implementation of current BMPs, and implementation of proposed BMPs.

5.3 AIR QUALITY

5.3.1 CURRENT REQUIREMENTS AND BEST MANAGEMENT PRACTICES

Equipment used by military units in the Study Area, including aircraft and vehicles, are properly maintained in accordance with applicable Navy requirements. Operating equipment meets federal and state emission standards, where applicable.

5.3.2 PROPOSED BEST MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES

5.3.2.1 Proposed Best Management Practices

The Navy proposes the following BMPs to avoid and minimize impacts to air quality under Alternative 2:

- When warranted, water or another dust palliative product would be used as necessary to minimize generation and downwind migration of fugitive dust, especially on dry, windy days.
- Generation of dust would be minimized by adhering to standard operating procedures to operate vehicles on existing roads and two-track trails (unless otherwise noted in standard operating procedures or in the event of emergency).
- Vehicles participating in training exercises that occur on unpaved surfaces would minimize fugitive dust generation by traveling at slow speeds.
- Aircraft, ground vehicles, and military equipment would be maintained in accordance with engine manufacturer specifications to optimize efficiency and limit emissions.

5.3.2.2 Proposed Monitoring

No specific monitoring needs were identified for air quality.

5.3.2.3 Proposed Mitigation Measures

No mitigation measures are warranted for air quality based on the analysis presented in Section 3.2.3 (Environmental Consequences) and implementation of existing BMPs.

5.4 WATER QUALITY

5.4.1 CURRENT REQUIREMENTS AND BEST MANAGEMENT PRACTICES

The following requirements and BMPs apply to water resources at the FRTC:

- Incidental spills that could contaminate groundwater are avoided and minimized. Navy personnel receive initial and periodic refresher training in the proper storage, handling, and management of hazardous materials.
- Potential groundwater contamination issues are addressed in the range condition assessment and subsequent 5-year reviews, in accordance with the Range Sustainability Environmental Program Assessment Policy implementation.
- The FRTC has an operational range clearance plan in compliance with DoD Directive 4715.11, *Environmental and Explosives Safety Management*. The operational range clearance plan provides for safe management and removal of unexploded ordnance, and recycling of training munitions, munitions debris, and range scrap that has been rendered safe.
- Ground training activities avoid streams, ponds, and Army Corps of Engineers' jurisdictional wetlands.

5.4.2 PROPOSED BEST MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES

5.4.2.1 Proposed Best Management Practices

The current BMPs listed in Section 3.3.1.2.2 (Management Practices) would continue to be implemented under Alternatives 1 and 2, and existing programs and plans would be updated to reflect new conditions. The following BMPs would be implemented to avoid and minimize potential impacts on water quality under Alternatives 1 and 2:

- Incidental fuel spills would be avoided by conducting all refueling activities in a secondary containment area.
- Drip pads would be placed under equipment when parked to avoid soil contamination from leaking fluids.
- A spill prevention, control, and countermeasures plan would be developed if quantities of fuel or other petroleum products above the spill prevention, containment, and countermeasures quantity threshold were stored. The plan would help to ensure rapid and effective response to incidental spills and avoid contaminant migration to groundwater.
 - Any spills would be managed and cleaned up in accordance with applicable state and federal regulatory requirements. If the spill exceeded 42 gallons (159 liters) of regulated material, the event would be immediately reported.
 - The operational range clearance plan would be updated and implemented to address any new requirements for the ranges.
 - Range condition assessment 5-year reviews would continue to be conducted, and appropriate steps would be taken, if necessary, to prevent or respond to a release or substantial threat of a release of munitions constituents of potential concern to off-range areas that could pose unacceptable risks to human health or the environment.
 - Assessments would be conducted for the digital multi-purpose training range (Alternative 1 only), multi-purpose machine gun range, and both convoy live fire ranges in accordance with the Army's Operational Range Assessment Program. These assessments would first determine qualitatively if munitions constituents were leaving the operational range footprint and whether pathways existed for human or ecological

receptors. A quantitative assessment would be conducted if the qualitative assessment were inconclusive. The assessments would be conducted on a 5-year review cycle, even if the initial qualitative assessment identified no issues.

5.4.2.2 Proposed Monitoring

No specific monitoring needs were identified for water quality. However, the need for groundwater sampling, analysis, or monitoring would continue to be considered during range condition assessment 5-year reviews conducted under the Navy's Range Sustainability Environmental Program assessment program.

5.4.2.3 Proposed Mitigation Measures

No mitigation measures are warranted for water quality based on the analysis presented in Section 3.3.3 (Environmental Consequences), implementation of current management practices, and implementation of proposed BMPs.

5.5 NOISE

5.5.1 CURRENT REQUIREMENTS AND BEST MANAGEMENT PRACTICES

Activities at the FRTC comply with numerous established acoustic control procedures to ensure that neither participants nor non-participants engage in activities that would endanger life or property. Aircraft SOPs are largely oriented toward safety, which also provide significant noise abatement benefits. For example, many SOPs involve flight routing and minimum altitudes. Each of these procedures increases the range of the noise source from human receptors, thus reducing noise impacts. Each of these procedures increases the range of the noise source from human receptors, thus reducing noise impacts. As stated in Chapter 18 of Office of the Chief of Naval Operations Instruction (OPNAVINST) 5100.23 (Navy Safety and Occupational Health Program Manual), noise control and abatement programs are developed to minimize noise impacts whenever practicable through implementation of operational alternatives that do not degrade mission requirements or aircraft safety.

Navy occupational noise exposure prevention procedures are required at the FRTC for those military personnel who might be exposed to occupational hearing hazards (e.g., military aircraft operations or land detonations) to meet all applicable Occupational Safety and Health Administration and Navy occupational noise exposure regulations. As these measures are designed to minimize occupational hearing hazards, there is no risk of hearing impacts from occupational noise exposure.

Additionally, The FRTC Range Operations Manual specifies a number of noise-sensitive areas, either as coordinate points or areas defined by buffers from coordinate points, as shown in Figure 3.4-8. Pilots overflying these areas are instructed to maintain altitudes of no lower than 3,000 feet above ground level.

5.5.2 PROPOSED BEST MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES

5.5.2.1 Proposed Best Management Practices

The current BMPs listed in Section 5.5.1 (Current Requirements and Best Management Practices) would continue to be implemented under Alternatives 1 and 2, and existing programs and plans would be updated to reflect new conditions.

5.5.2.2 Proposed Monitoring

No specific monitoring needs were identified for noise based on the analysis presented in Section 3.4.2 (Environmental Consequences).

5.5.2.3 Proposed Mitigation Measures

No specific mitigation needs were identified for noise based on the analysis presented in Section 3.4.2 (Environmental Consequences).

5.6 WILDLIFE

5.6.1 CURRENT REQUIREMENTS AND BEST MANAGEMENT PRACTICES

Following is a summary of current requirements and practices applicable to vegetation and wildlife at FRTC:

- Current requirements and BMPs applicable to wildlife and vegetation at FRTC are described in the *Integrated Natural Resources Management Plan (INRMP) and Environmental Assessment for Naval Air Station Fallon, Nevada* (U.S. Department of the Navy 2014). Actions focus on minimizing disturbance, controlling invasive plants, and restoring native habitats.
- As part of its Bird/Animal Aircraft Strike Hazard (BASH)-oriented wildlife management program to reduce or eliminate wildlife attractants near runways and taxiways, Naval Air Station (NAS) Fallon implements various habitat management and modification techniques including, but not limited to the removal of food sources, mowing tall grasses, relocating perching and nesting structures, controlling weeds to minimize seeds and bird attractants, and preventing standing water in areas near the flightline. The BASH program manages risk by addressing specific aviation safety hazards associated with wildlife near airfields through coordination among all the entities supporting the aviation mission (U.S. Department of Defense 2010).

5.6.2 PROPOSED BEST MANAGEMENT PRACTICES, MONITORING, AND MITIGATION

5.6.2.1 Proposed Best Management Practices

The current BMPs listed in Section 3.5.2.6 (Current Requirements and Management Practices) would continue to be implemented under Alternatives 1 and 2, and existing programs and plans would be updated to reflect new conditions.

5.6.2.2 Proposed Monitoring

No specific monitoring needs were identified for wildlife based on the analysis presented in Section 3.5.3 (Environmental Consequences).

5.6.2.3 Proposed Mitigation Measures

No specific mitigation needs were identified for wildlife based on the analysis presented in Section 3.5.3 (Environmental Consequences).

5.7 LAND USE AND RECREATION

5.7.1 CURRENT REQUIREMENTS AND BEST MANAGEMENT PRACTICES

Current requirements and BMPs applicable to land use within the FRTC Study Area are agency specific and are discussed in respective subsections in Section 3.6.2.3 (Existing Land Use at the Fallon Range Training Complex).

Based on the FRTC Range Air Installations Compatible Use Zones Study (U.S. Department of the Navy 2011), land uses within the FRTC Study Area are compatible with current training activities. Land compatibility is based on Navy guidelines outlined in the joint Navy and U.S. Marine Corps instruction, OPNAVINST 3550.1A, Range Air Installations Compatible Use Zones Program (U.S. Department of the Navy 2008). The study includes training range safety and noise analyses and provides land use recommendations that are compatible with training range operations and their associated noise levels. Noise associated with training activities, as well as compatibility of noise levels with existing land use and sensitive noise receptors, is addressed further in Section 3.4 (Noise [Airborne]) of this EIS. Safety associated with land use is of interest in areas proximate to training ranges Bravo (B)-16, B-17, B-19, and B-20, where air-to-ground delivery of ordnance occurs. Accordingly, range compatibility zones are developed for all targets. Range compatibility zones translate aviation and ordnance delivery safety concerns into degrees of safety that can be reasonably attained on the ground.

5.7.2 PROPOSED BEST MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES

5.7.2.1 Proposed Best Management Practices

Management practices in place for other resources (e.g., noise, vegetation, biological resources), which affect land use at the FRTC, would continue to be implemented. These management practices would also serve to avoid and minimize impacts on land use. No additional management practices are warranted for land use and recreation based on the analysis presented in Section 3.6.3 (Environmental Consequences).

5.7.2.2 Proposed Monitoring

No monitoring measures are warranted for land use and recreation based on the analysis presented in Section 3.6.3 (Environmental Consequences), implementation of current management practices, and implementation of proposed BMPs for other resources.

5.7.2.3 Proposed Mitigation Measures

No mitigation measures are warranted for land use and recreation based on the analysis presented in Section 3.6.3 (Environmental Consequences), implementation of current management practices, and implementation of proposed BMPs.

5.8 SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND PROTECTION OF CHILDREN

5.8.1 CURRENT REQUIREMENTS AND BEST MANAGEMENT PRACTICES

There are no current mitigation measures related to socioeconomics, environmental justice, or the protection of children. However, mitigation measures in place for other resources (e.g., air quality, water quality, noise, and public health and safety) ensure that nonparticipants are not affected by actions within the FRTC Study Area.

5.8.2 PROPOSED BEST MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES

5.8.2.1 Proposed Best Management Practices

No adverse socioeconomic effects were identified; therefore, no proposed management practices for socioeconomics, environmental justice, or the protection of children are warranted. However, BMPs for other resources that affect environmental justice (e.g., air quality, water quality, and noise) would be implemented.

5.8.2.2 Proposed Monitoring

No specific monitoring needs were identified for socioeconomics, environmental justice, or the protection of children.

5.8.2.3 Proposed Mitigation Measures

No mitigation measures are warranted for socioeconomics, environmental justice, or the protection of children based on the analysis presented in Section 3.7.3 (Environmental Consequences) and implementation of proposed BMPs.

5.9 TRANSPORTATION

5.9.1 CURRENT REQUIREMENTS AND BEST MANAGEMENT PRACTICES

These precautions minimize the potential for interaction between military and civilian activities by communicating hazardous training and testing activities to all vessels, aircraft, and operators. Safely conducting activities in the controlled training and testing areas is ensured through implementation of the Navy's safety policies and procedures that include but are not limited to the following:

- Abiding by Visual Flight Rules and Instrument Flight Rules
- Scheduling activities through Naval Strike and Air Warfare Center
- Ensuring that the entire hazard zone is clear before commencing hazardous activities
- Coordinating with Range Safety Officers prior to expending military munitions
- Ensuring clearance of appropriate safety zones

5.9.2 PROPOSED BEST MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES

5.9.2.1 Proposed Best Management Practices

BMPs are not proposed beyond the established SOPs already in place for separation of civilian and military aircraft.

5.9.2.2 Proposed Monitoring

Proposed monitoring is not proposed beyond the established Federal Aviation Administration controls already in place for the safety of aviation resources in the Study Area.

5.9.2.3 Proposed Mitigation Measures

Proposed mitigation measures are not proposed beyond the established SOPs already in place for separation of civilian and military aircraft.

5.10 CULTURAL RESOURCES

5.10.1 CURRENT REQUIREMENTS AND BEST MANAGEMENT PRACTICES

Cultural resources at the FRTC Study Area are managed in accordance with the National Historic Preservation Act (NHPA), the Archaeological Resources Protection Act, the American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act (NAGPRA), and appropriate Navy Instructions. The Navy also abides by a Programmatic Agreement (PA) with the Nevada State Historic Preservation Office (SHPO), Bureau of Land Management (BLM), and the Advisory Council on Historic Preservation that requires the identification, evaluation, and treatment of historic properties on lands managed by NAS Fallon to ensure protection of cultural resources and coordination between the Navy and the Nevada SHPO (Naval Air Station Fallon et al. 2011). The PA contains stipulations that address

cultural resource staffing, coordination and information exchange with the SHPO, standard procedures, special procedures, public participation, dispute resolution, training of nonprofessional staff, reports and monitoring, reviews, amendments, suspension, termination, execution, and implementation. In addition, the Navy abides by a Memorandum of Understanding (MOU) concerning Native American human skeletal remains and associated artifacts signed in 1991 by NAS Fallon, the Fallon Paiute-Shoshone Tribe, the Nevada SHPO, the USFWS, and the Nevada State Museum (Naval Air Station Fallon et al. 1991).

An Integrated Cultural Resources Management Plan (ICRMP) was completed in 2013. The document provides guidance to staff at NAS Fallon to ensure that all laws, regulations, policies, and directives related to cultural resources are appropriately followed while fulfilling the installation's mission. The integrated cultural resources management plan also provides standard operating procedures for routine actions that may affect cultural resources (U.S. Department of the Navy 2013).

Any inadvertent discovery of sensitive archaeological materials on the FRTC Study Area would be handled in accordance with the Navy's BMPs, which include provisions for stopping work and notifying the appropriate parties. If human remains are inadvertently discovered, then the procedures established under the NAGPRA and OPNAVINST 11170.2 series, *Navy Responsibilities Regarding Undocumented Human Burials*, would be followed.

5.10.2 PROPOSED MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES

5.10.2.1 Proposed Best Management Practices

BMPs discussed in Section 3.9.1.2 (Regulatory Framework and Management Practices) would continue to be implemented under Alternative 1 or 2, if selected. Cultural resources would continue to be managed in accordance with the NHPA, the Archaeological Resources Protection Act, the American Indian Religious Freedom Act, NAGPRA, and appropriate Navy Instructions. The PA with the Nevada SHPO, BLM, and the Advisory Council on Historic Preservation; the MOU with the Fallon Paiute-Shoshone Tribe, the Nevada SHPO, the USFWS, and the Nevada State Museum; and the ICRMP would continue to be implemented. Any inadvertent discovery of sensitive archaeological materials on the FRTC Study Area would be handled in accordance with the Navy's BMPs, which include provisions for stopping work and notifying the appropriate parties. If human remains are inadvertently discovered, then the procedures established under the NAGPRA and OPNAVINST 11170.2 series, *Navy Responsibilities Regarding Undocumented Human Burials*, would be followed.

5.10.2.2 Proposed Monitoring

The need for additional monitoring beyond that included in current and proposed BMPs is pending completion of consultation with SHPO.

5.10.2.3 Proposed Mitigation Measures

The need for mitigation measures beyond that included in current and proposed BMPs is pending completion of consultation with SHPO.

5.11 PUBLIC HEALTH AND SAFETY

5.11.1 CURRENT REQUIREMENTS AND BEST MANAGEMENT PRACTICES

Specific and documented procedures are in place to ensure that nonparticipants are not endangered by training actions. It is recommended that training units include safety and medically trained personnel.

The presence of fences and signs around bombing areas and the use of strict SOPs helps to protect the public from potentially hazardous training activities. Monitoring of training events serves to identify potential public health and safety risks and avoid them.

5.11.2 PROPOSED BEST MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES

5.11.2.1 Proposed Best Management Practices

Current measures in place to ensure that nonparticipants are not endangered by actions at the FRTC would continue. SOPs and range clearance procedures are in place to ensure that training areas are clear of nonparticipants before an activity commences. The following BMPs would continue to be implemented to reduce hazards associated with unexploded ordnance: (1) post signs warning of areas where unexploded ordnance clearance has not been confirmed and (2) restrict movement of personnel using the training range to designated areas known to be free of unexploded ordnance, (3) maintain the Range Sustainability Environmental Program Assessment discussed in Section 3.10.2.6 (Range Sustainability Environmental Program Assessment), and (4) continue Operational Range Clearance activities which remove unexploded ordnance and other materials to reduce munitions constituent loading. No additional BMPs are warranted.

5.11.2.2 Proposed Monitoring

The Navy has a program in place designed to assess environmental impacts of training operations and to implement measures to protect the environment when needed (see Section 3.10.2.6 [Range Sustainability Environmental Program Assessment]). No additional measures are warranted.

5.11.2.3 Proposed Mitigation Measures

No mitigation measures for other resources that affect public health and safety (e.g., noise, air quality) were proposed for the action alternatives. No additional mitigation measures for public health and safety are warranted. If needed, protective measures can be implemented at any point during that process to ensure public safety, sustain range operations, and maintain environmental compliance (see Section 3.10.2, Affected Environment).