Environmental Impact Statement

Fallon Range Training Complex Modernization

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3.8 Air Quality

Air pollution is a threat to human health and harmful to the environment (U.S. Environmental Protection Agency, 2009). Air pollution damages trees, crops, other plants, lakes, and animals. In addition to damaging the natural environment, air pollution damages the exteriors of buildings, monuments, and statues. It creates haze or smog that reduces visibility in national parks and cities and interferes with aviation. To improve air quality and reduce air pollution, Congress passed the Clean Air Act (CAA) in 1963, and its amendments in 1970 and 1990, which set regulatory limits on air pollutants and help to ensure basic health and environmental protection from air pollution.

Air quality is defined by atmospheric concentrations of specific air pollutants—pollutants the United States (U.S.) Environmental Protection Agency (EPA) determined may affect the health or welfare of the public. The six major air pollutants of concern, called "criteria pollutants," are carbon monoxide, sulfur dioxide, nitrogen dioxide, ozone, particulate matter, and lead. Particulate matter is further categorized as particulates less than or equal to 10 microns in diameter and fine particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$). The CAA requires that the EPA establish National Ambient Air Quality Standards (NAAQS) for these criteria pollutants. These standards set specific concentration limits for criteria pollutants in the outdoor air. The concentration limits were developed because the criteria pollutants are common in outdoor air, considered harmful to public health and the environment, and come from numerous and diverse sources. The intent of these concentration limits is to aid in protecting public health and the environment. Areas with air pollution problems typically have one or more criteria pollutants consistently present at levels that exceed the NAAQS. These areas are designated as nonattainment for the NAAQS.

Criteria air pollutants are classified as either primary or secondary pollutants based on how they are formed in the atmosphere. Primary air pollutants are emitted directly into the atmosphere from the source of the pollutant and retain their chemical form. Examples of primary pollutants are the smoke produced by burning wood and volatile organic compounds emitted by industrial solvents. Secondary air pollutants are those formed through atmospheric chemical reactions that usually involve primary air pollutants (or pollutant precursors) and normal constituents of the atmosphere. Ozone, a major component of photochemical smog, is a secondary air pollutant. Ozone precursors, nitrogen oxides, and volatile organic compounds chemically react in the atmosphere in the presence of sunlight to form ground-level ozone. Nitrogen oxides consist of nitric oxide and nitrogen dioxide.

Finally, some criteria air pollutants are a combination of primary and secondary pollutants. Particulate matter less than or equal to 10 microns in diameter (PM_{10}) and $PM_{2.5}$ are generated as primary pollutants by various mechanical processes (e.g., abrasion, erosion, mixing, or atomization) or combustion processes. They are generated as secondary pollutants through chemical reactions or through the condensation of gaseous pollutants (e.g., nitrogen oxides, sulfur oxides, and volatile organic compounds) into fine aerosols.

In addition to the six criteria pollutants, the EPA has designated 187 substances as hazardous air pollutants (HAPs) under the federal CAA. HAPs, also known as toxic air pollutants or air toxics, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects (Nevada Division of Environmental Protection, 2016). NAAQS are not established for these pollutants; however, the EPA developed rules that limit emissions of HAPs from specific industrial sources. These emissions control standards are known as "maximum achievable control technologies" and "generally achievable control technologies." They are intended to achieve the maximum degree of reduction in emissions of the HAPs, taking into consideration the cost of emissions control, non-air-quality health and environmental

impacts, and energy requirements. These emissions are typically one or more orders of magnitude smaller than concurrent emissions of criteria air pollutants, and only become a concern when large amounts of fuel, explosives, or other materials are consumed within a localized area and short time span. HAPs are discussed qualitatively in relation to the number and concentration of the sources emitting these pollutants during construction or training activities.

Mobile sources operating due to the proposed action would be functioning intermittently over a large area and would produce negligible ambient hazardous air pollutants in a localized area not located near any publicly accessible areas. For these reasons, this analysis does not further evaluate hazardous air pollutants.

Air pollutant emissions are reported as the rate (by weight or volume) at which specific compounds are emitted into the atmosphere by a source and are often expressed using the following units of measurement: pounds per hour, pounds per day, or tons per year. Typical units for emission factors for a source or source activity are pound per thousand gallons of fuel burned, pound per ton of material processed, and grams per vehicle-mile of travel.

Ambient air quality is reported as the atmospheric concentrations of specific air pollutants at a particular time and location. The units of measure are expressed as a mass per unit volume (e.g., micrograms per cubic meter of air) or as a volume fraction (e.g., parts per million [ppm] by volume). The pollutant emissions rate, local meteorology, and atmospheric chemistry determine the ambient air pollution concentrations measured at a particular location. Wind speed and direction, the vertical temperature gradient of the atmosphere, and precipitation patterns affect the dispersal, dilution, and removal of air pollutant emissions from the atmosphere.

3.8.1 Methodology

The methodology for analyzing potential impacts considers the region of influence, regulatory framework, approach to analysis, and public scoping concerns.

3.8.1.1 Region of Influence

For air quality planning purposes, Nevada has three jurisdictions (Figure 3.8-1, which shows the Fallon Range Training Complex [FRTC] extent and also shows expansion areas where construction may occur) defined in 40 Code of Federal Regulations (CFR) 81 that independently manage their own air programs as designated by statute. However, only two of them are relevant to the Proposed Action. The FRTC is located mostly in Churchill County, which is one of the 15 rural counties that fall under the Nevada Intrastate Air Quality Control region. The region of influence also includes portions of Nye, Eureka, Mineral, Pershing, and Lander counties. Since all of the bombing ranges are all within the same air basin and managed by the same air programs, this section will analyze all four areas together. However, the noncontiguous Reno Military Operations Area (MOA) portion of the FRTC region of influence lies partially within Washoe County, which is within the Northwest Nevada Intrastate Air Quality Control Region.

3.8.1.2 Regulatory Framework

3.8.1.2.1 Mobile Sources

HAPs emitted from mobile sources are called Mobile Source Air Toxics (MSATs). MSATs are compounds emitted from highway vehicles and non-road equipment known or suspected to cause cancer or other serious health and environmental effects. In 2001, the EPA issued its first MSAT Rule. In 2007, the EPA issued a second MSAT rule, which identified several engine emission certification standards that must be

implemented (40 CFR parts 59, 80, 85, and 86; Federal Register [FR] Volume 72, No. 37, pp. 8427–8570, 2007). Unlike the criteria pollutants, there are no NAAQS for benzene and other HAPs. The primary control methodologies for these pollutants for mobile sources involve reducing their content in fuel and altering the engine operating characteristics to reduce the volume of pollutant generated during combustion.

3.8.1.2.2 General Conformity

The EPA General Conformity Rule (40 CFR 93 Subpart B) applies to only those federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. Direct emissions are those emissions caused by the federal action and emitted while the action is underway, whereas indirect emissions are emissions that are caused by the federal action, but which can occur at a later time or in a different location from the action itself and are reasonably foreseeable. A conformity applicability analysis is the first step of a conformity evaluation and assesses if a federal action must be supported by a conformity determination. The emissions thresholds that determine whether a conformity analysis is applicable are called *de minimis* levels. *De minimis* levels (in tons per year) vary by pollutant and also depend on the severity of the nonattainment status for the air quality management area in question. The federal agency typically quantifies reasonably foreseeable direct and indirect emissions that are projected to result due to implementation of the federal action and compares these emissions against the *de minimis* thresholds. If the results of the applicability analysis indicate that the total emissions would not exceed the *de minimis* emissions thresholds, then the conformity evaluation process is completed. *De minimis* threshold emissions are presented in Table 3.8-1.

Table 3.8-1: General Conformity *de minimis* Levels

Pollutant	Area Type	tpy
Ozone (VOC or NO_x)	Other areas outside an ozone transport region	100
Carbon monoxide, SO_2 and NO_2	All nonattainment and maintenance	100
PM_{10}	Moderate nonattainment and maintenance	100
$PM_{2.5}$ Direct emissions, SO_2, NO_x (unless determined not to be a significant precursor), VOC, or ammonia (if determined to be significant precursors)	All nonattainment and maintenance	100
Lead (Pb)	All nonattainment and maintenance	25

Notes: VOC = volatile organic compound, NO_x = nitrogen oxide, SO_2 = sulfur dioxide, NO_2 = Nitrogen dioxide, $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter, PM_{10} = particulate matter less than or equal to 10 microns in diameter, tpy = tons per year. VOC and NO_x are precursors to ozone and therefore share a *de minimis* threshold.
Source: U.S. Environmental Protection Agency (2017a)

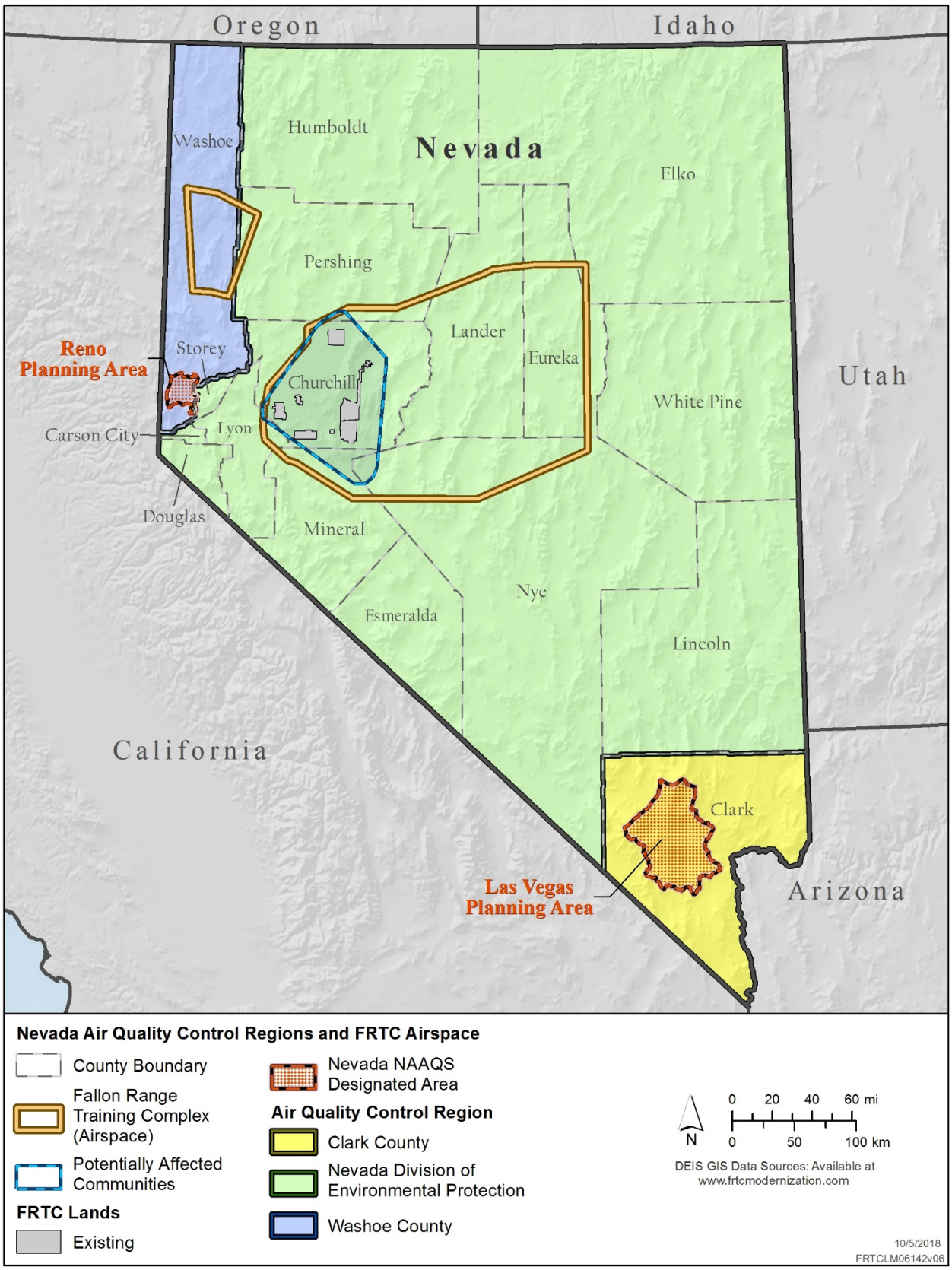

Figure 3.8-1: Nevada Air Quality Control Regions and FRTC Airspace

3.8.1.2.3 Permitting

The CAA Preconstruction Permit program is called New Source Review and is designed to ensure no new or reconstructed modified emission source will have a significant adverse impact on air quality. The New Source Review program has three different types of permits that apply to various stationary sources. Major New Source Review permits are required for large stationary sources that would be constructed or installed within attainment areas. Major non-attainment New Source Review permits are required for large stationary sources that would be constructed in non-attainment areas. Finally, there is the Minor New Source Review permit, which applies to small stationary sources. The program is typically implemented by State or local regulatory agencies, which may impose stricter requirements than the EPA's federal program requirements. It is divided into two types of preconstruction permits, based on the attainment status of the area. Navy facilities must apply for and obtain required permits for air emission sources prior to the project beginning construction. Any stationary sources associated with the Proposed Action would be minor sources and therefore would require a Minor New Source Review permit prior to construction or installation.

3.8.1.2.4 Fugitive Dust

The Western Regional Air Partnership Dust Emissions Joint Forum adopted a definition of fugitive dust on October 21, 2004 (Western Governors' Association, 2006). Fugitive dust was defined as dust that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. A similar definition is contained in Nevada Administrative Code section 445B.075 for this solid airborne particulate matter. Fugitive dust can be generated from agricultural tilling, construction, materials handling, paved travel surfaces, unpaved travel surfaces, minerals products industry, abrasive blasting, livestock husbandry, and wind erosion of exposed areas. Fugitive dust can become a contributor to nonattainment of the NAAQS for PM_{10} or $PM_{2.5}$. $PM_{2.5}$ emissions are typically less than PM_{10} emissions for fugitive dust sources published in Section 13 of AP-42. Nevada Administrative Code Rule 445B.22037 regulates the emission of fugitive dust on a state level.

3.8.1.2.5 Greenhouse Gases

Greenhouse gases (GHGs) are compounds that contribute to the greenhouse effect—a natural phenomenon in which gases trap heat in the lowest layer of the earth's atmosphere (surface-troposphere system), causing heating (radiative forcing) at the surface of the earth. The primary long-lived (lasting more than a few years) GHGs directly emitted by human activities are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride. Carbon dioxide, methane, and nitrous oxide occur naturally in the atmosphere. These gases influence global climate by trapping heat in the atmosphere that would otherwise escape to space. The heating effect of these gases is considered the probable cause of the global warming observed over the last 50 years (U.S. Environmental Protection Agency, 2009). Global warming and climate change affects many aspects of the environment. Not all effects of GHGs are related to climate. For example, elevated concentrations of carbon dioxide can lead to ocean acidification and stimulate terrestrial plant growth, and methane emissions can contribute to higher ozone levels.

The administrator of the EPA determined that GHGs in combination endanger both the public health and the public welfare of current and future generations. The EPA specifically identified carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride as GHGs (U.S. Environmental Protection Agency, 2009) (74 FR 66496).

To estimate global warming potential, the United States quantifies GHG emissions using 100-year timeframe values. All global warming potentials are expressed relative to a reference gas, carbon dioxide, which is assigned a global warming potential equal to one. Six other primary GHGs have global warming potentials of 25 for methane, 298 for nitrous oxide, 124–14,800 for hydrofluorocarbons, 7,390 to greater than 17,340 for perfluorocarbons, 17,200 for nitrogen trifluoride, and up to 22,800 for sulfur hexafluoride. To estimate the carbon dioxide equivalency of a non-carbon dioxide GHG, the appropriate global warming potential of that gas is multiplied by the amount of the gas emitted. All seven GHGs are multiplied by their global warming potential and the results added to calculate the total equivalent emissions of carbon dioxide. The dominant GHG emitted is carbon dioxide, mostly from fossil fuel combustion (85.4 percent) (U.S. Environmental Protection Agency, 2017b). Weighted by global warming potential, methane is the second-largest component of emissions, followed by nitrous oxide. Global warming potential-weighted emissions are presented in terms of equivalent emissions of carbon dioxide, using units of metric tonnes.

Activities under the Proposed Action and alternatives are anticipated to release GHGs to the atmosphere from combustion emissions from stationary and mobile sources, including but not limited to employee commuting and construction vehicles. These emissions are quantified primarily using methods elaborated upon in the Inventory of *U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2015* for the proposed modernization activities in the region of influence, and Table 3.8-6 presents the estimates (U.S. Environmental Protection Agency, 2017b).

3.8.1.3 Approach to Analysis

This Environmental Impact Statement (EIS) calculates only criteria air pollutants generated by any new activities (construction activities related to range infrastructure development). The existing ranges and expansion areas are predominantly located in Churchill County but also take place in small portions of Lyon, Mineral, Pershing, and Nye counties. Counties underlying the airspace that do not contain portions of the ranges or their expansion areas would not experience new sources of emissions. While HAPs are expected to be produced, this EIS only qualitatively analyses their impacts. The Proposed Action and Alternatives would involve the potential relocation of State Routes 839 (Alternatives 1 and 2) and State Route 361 (Alternative 3) for safety reasons, as well as the potential relocation of a section of the Paiute Pipeline. Site-specific National Environmental Policy Act (NEPA) analysis of these relocations will be required prior to implementation of any alternative selected in the Record of Decision for this EIS. The Navy will support any NEPA efforts required for these site-specific analyses. Therefore, while potential construction of new road segments or pipeline would potentially increase air emissions during construction, the qualitative analysis of the specific activities would be performed in the follow-on site-specific NEPA, and not in this EIS. If road construction activities would be performed within tribal lands, further coordination would be required with EPA Region IX, which would occur during the site-specific NEPA analysis for the notional relocation corridors.

The impact analysis for air quality considers possible changes in ambient air quality that could result from the Proposed Action. As stated in Chapter 2 (Description of Proposed Action and Alternatives), the Proposed Action would use the entire modernized FRTC to conduct aviation and ground training of the same general types and at the same tempos as analyzed in Alternative 2 of the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement* (U.S. Department of the Navy, 2015). Therefore, this analysis considers the levels of activities and associated air emissions from the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement* to be the environmental baseline emissions. The significance of air

quality impacts is assessed by comparing new emissions (emissions that are unique to the Proposed Action), which is primarily comprised of construction emissions, that would be expected under the Proposed Action against the *de minimis* thresholds. The *de minimis* thresholds are only being used as a screening threshold to help illustrate the impacts that the Proposed Action could have on the ambient air quality. *De minimis* thresholds are not directly applicable to the analysis since the area is in attainment of NAAQS. However, they are useful as a point of comparison for showing to what extent the impact an activity would have.

The air quality stressors vary in intensity, frequency, duration, and location within the region of influence. The stressors applicable to air quality in the region of influence are analyzed below and include the following:

- Criteria Air Pollutants: In this analysis, criteria air pollutant emissions estimates were calculated for ground vehicles and equipment used in construction and range infrastructure development. For each alternative, emissions estimates were developed by construction activity within each range. Supporting Study: Air Quality Tables (available at https://frtcmodernization.com) provides details of the emission estimates.

Combat search and rescue activities and electronic warfare countermeasures generate emissions of chaff, a form of particulate not regulated under the federal Clean Air Act as a criteria air pollutant. A 1997 Air Force study evaluated the environmental effect and air quality impacts of chaff (U.S. Department of the Air Force, 1997) and concluded that most chaff fibers maintain their integrity after ejection. Any fibers that do fracture during ejection do not release particulate matter. A 2004 study at Naval Air Station (NAS) Fallon found that the release of 50,000 cartridges of chaff per year over 10,000 square miles would result in an annual average PM_{10} or $PM_{2.5}$ concentration of 0.018 microgram per cubic meter ($\mu g/m^3$) (U.S. Department of the Navy, 2004). That was far below the then-NAAQS standard of 50 $\mu g/m^3$ for PM_{10} and 15 $\mu g/m^3$ for $PM_{2.5}$ over a one-year averaging time (Agency for Toxic Substances and Disease Registry, 2003). Currently, $PM_{2.5}$ has the only annual standards, a primary of 12.0 $\mu g/m^3$ and a secondary of 15.0 $\mu g/m^3$. Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. When the EPA eliminated the PM_{10} annual as part of the NAAQS update, EPA either retained or established 24-hour standards for $PM_{2.5}$ and PM_{10} of 35 $\mu g/m^3$ and 150 $\mu g/m^3$, respectively. As the levels presented in the 2004 study fall below the updated standards, and chaff usage does not change from levels presented in the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement*, this EIS does not further evaluate chaff.

3.8.1.4 Public Scoping Concerns

The Toiyabe Chapter of the Sierra Club, EPA, Basin Watch, and several members of the public raised several issues during scoping for this EIS including general effects to air quality, most notably fugitive dust from ordnance delivery, as well as air contamination from aircraft, especially carbon dioxide emissions. The EPA requested that the EIS contain the ambient air conditions (baseline or existing conditions), the NAAQS, criteria pollutant nonattainment areas, and potential air quality impacts of the project (including cumulative and indirect impacts) for each alternative. For further information regarding comments received during the public scoping process, please refer to Appendix D (Public Involvement).

3.8.2 Affected Environment

As described above, only two areas in Nevada are classified as nonattainment areas. Figure 3.8-1 shows that these two areas do not overlap with the FRTC region of influence. Accordingly, the FRTC region of influence is not within any nonattainment or maintenance area for criteria pollutants. Since the region of influence is within an attainment area for all criteria pollutants, the General Conformity Rule does not apply to this action.

The most recent air emissions inventory data that are available for Nevada (U.S. Environmental Protection Agency, 2014) are set forth in Table 3.8-2. It should also be noted that the existing ranges and range expansions are mostly in Churchill County and barely touch the other counties of Lyon, Mineral, Pershing, and Nye.

Table 3.8-2: Annual Baseline (2014) Criteria and Precursor Air Pollutant Emissions for Nevada

Geographic Area	Criteria and Precursor Air Pollutant Emissions in Tons/Year					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Churchill County	6,027.2	1,354.4	1,522.4	48.6	5,654.5	977.7
Lyon County	8,489.0	2,692.6	2,122.1	144.6	14,524.9	2,098.9
Mineral County	1,780.3	306.6	473.7	10.1	1,160.8	270.1
Nye County	16,493.2	1,373.7	3,921.7	174.9078	28,926.6	4,436.0
Pershing County	3,326.1	1,955.2	657.1	47.8	4,800.3	765.3
Totals for Affected Counties	36,116	7,682.5	8,697.1	425.88	55,067	8,548.1

Notes: CO = carbon monoxide, NO_x = nitrogen oxides, SO_x = sulfur oxides, PM_{10} = suspended particulate matter less than or equal to 10 micrometers in diameter, $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 micrometers in diameter, VOC = volatile organic compounds.
Source: U.S. Environmental Protection Agency (2014)

3.8.2.1 Existing Air Pollutant Emissions from Fallon Range Training Complex Activities

Training-related air pollutant emissions within the FRTC region of influence primarily originate from mobile sources, with the main source being fixed-wing aircraft overflights in the Special Use Airspace (SUA). These emissions are shown in Table 3.8-3. Training activities account for approximately 0.3 percent of carbon monoxide emissions, 8 percent of nitrogen oxide emissions, 0.1 percent of volatile organic compound emissions, 20 percent of sulfur oxide emissions, 0.3 percent of PM_{10} emissions, and 2 percent of $PM_{2.5}$ emissions within affected counties. NAS Fallon has 11 different burn variances from Nevada Bureau of Air Pollution Control, four of which apply to FRTC. These allow burning for activities such as weed management, fire training, training exercises, and disposal of materials such as wood and cardboard (associated with training). Training exercises could induce burning from explosions. Although target areas would be constructed to not burn, there is potential for areas around target areas to burn. Any fires started by training activities would be managed by the Navy.

3.8.2.1.1 Criteria Pollutants

Table 3.8-3 lists criteria air pollutant and precursor emissions in the FRTC region of influence from the Preferred Alternative of the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada*

Final Environmental Impact Statement. These emission levels are considered the environmental baseline to which emissions associated with the Proposed Action will be compared to determine the net change in emissions.

Other sources of criteria pollutant emissions include those emanating from munitions detonation and vehicles used in ground training activities. Based on the nature of the detonation process and the very low emission rates that have been published (AP-42, Chapter 15) in studies of munitions firing and open detonations, emission quantities from munitions use are very small. As stated in the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement*, criteria pollutant emissions associated with munitions were negligible and would not noticeably contribute to the overall emission levels that were predicted in the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement* (see Section 3.2.3.1, No Action Alternative, of the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement*). Ground vehicle emissions were also predicted to not have a noticeable contribution to overall emissions levels in the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement*, because vehicle use during range activities is very limited in comparison to aircraft use. Therefore, these sources of emissions were not quantified for the environmental baseline.

Table 3.8-3: Baseline Criteria and Precursor Air Pollutant Emissions for Training within the FRTC Region of Influence

Emissions Source	Criteria and Precursor Air Pollutant Emissions in Tons/Year					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Fixed-Wing Aircraft	95	593	8	82	184	184
Rotary Aircraft	9	10	1	3	6	6
Unmanned Aircraft Systems	< 1	< 1	< 1	< 1	< 1	< 1
Total =	**105**	**603**	**9**	**85**	**190**	**190**

Notes: CO = carbon monoxide, NO_x = nitrogen oxides, PM_{10} = suspended particulate matter less than or equal to 10 micrometers in diameter, $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 micrometers in diameter, SO_x = sulfur oxides, VOC = volatile organic compounds. Includes estimated criteria and precursor air pollutant emissions for all flight activities below the default mixing height (3,000 feet above ground level).

3.8.2.1.2 Hazardous Air Pollutants

Hazardous air pollutants are emitted by processes associated with Navy training activities presented in the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement*, including fuel combustion. Trace amounts of hazardous air pollutants are emitted by combustion sources participating in training activities, including aircraft, ordnance, and military vehicles and equipment. In this action, the hazardous air pollutant emissions would be short term in nature and even more dispersed than what was presented in the *2015 Military Readiness Activities of Fallon Range Training Complex, Nevada Final Environmental Impact Statement*, meaning the potential for HAP exposure is very small. In addition, the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement* explained that hazardous air pollutant emissions are intermittent and distributed over the entire FRTC region of influence. While sensitive receptors exist within this area, they are not exposed to any measurable amounts of hazardous air

pollutants due to the large area of distribution, the small amounts that are produced, and because their concentrations are further reduced by atmospheric mixing and other dispersion processes.

3.8.2.1.3 Fugitive Dust

The potential for fugitive dust exists from training activities within the FRTC, including ground-based activities (e.g., convoy operations [increase of three activities], tactical ground mobility operations [increase of one activity], ground LASER targeting, combat search and rescue, air-to-ground bombing, and dismounted fire and maneuver). As presented in the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement,* ground LASER targeting training by ground-based military equipment in the Dixie Valley Training Area (DVTA), Shoal Site, B-16, B-17 and B-19 generates fugitive dust. During combat search and rescue training, helicopters and ground-based military equipment create fugitive dust. Bombing activities would eject loose dust into the air from explosions. Finally, during dismounted fire and maneuver training, ground-based military equipment and dismounted personnel in B-17 generate fugitive dust. Fugitive dust emissions ($PM_{2.5}$ and PM_{10}) during training are localized and temporary (short term), only existing during the event itself.

Ground-based activities uses all-terrain vehicles, pickup trucks, high-mobility multipurpose wheeled vehicles, and mine-resistant ambush-protected vehicles. Operation of military vehicles on range generates dust during dry conditions. Adhering to standard operating procedures contained in Navy doctrine and stated below helps minimize the dust:

- Vehicles shall be operated only on established roads.
- Vehicles shall adhere to posted speed limits and drive at safe speeds commensurate with conditions.

In addition, conditions are evaluated before starting a large-scale ground training event to determine if additional dust abatement measures, such as watering high-use areas or other measures in the *NAS Fallon Dust Control Plan* (U.S. Department of the Navy, 2004), are warranted. The need for additional dust abatement measures is determined on a case-by-case basis during pre-exercise planning with input from the NAS Fallon Environmental Division. Factors considered in determining the need for additional dust abatement include the locations and duration of the exercise; the number of vehicles involved in the exercise; soil moisture conditions prior to the exercise; and predicted precipitation, wind speed, and wind direction during the exercise.

3.8.2.2 Climate Change

Climate change refers to any significant change in the measures of climate lasting for an extended period. Climate change includes major changes in temperature, precipitation, or wind patterns, among other effects, that occur over several decades or longer.

Emissions of GHGs are considered to have a potential impact on global climate. Global surface temperatures have increased by an average of about 1.3 degrees Fahrenheit during the last century (Solomon et al., 2007). Most of the observed temperature increase since the mid-20th century is correlated with increasing amounts of GHGs emitted by human activities such as combustion of fossil fuels and deforestation (Solomon et al., 2007). The annual contribution to GHG emissions from the United States is 6,587 million metric tons of carbon dioxide equivalent (CO_2e) (U.S. Environmental Protection Agency, 2017b). The state of Nevada on average will produce approximately 40 million metric tons of CO_2e per year (Nevada Division of Environmental Protection, 2016).

On the issue of global climate change, however, no adopted federal plans, policies, regulations, or laws are yet in place mandating reductions in GHG emissions. The climate change research community has not yet developed tools specifically intended to evaluate or quantify end-point impacts attributable to the emissions of GHGs from a single source. In particular, due to the uncertainties involving the assessment of such emissions regionally and locally, the very minor incremental contribution of the Proposed Action to climate change cannot be determined given the current state of the science and assessment methodology. Therefore, the contribution of the Proposed Action to the global issue of climate change uses GHG emissions as an indicator.

The potential effects of proposed GHG emissions are by nature global and may result in cumulative impacts, as individual sources of GHG emissions are generally not going to be large enough to have any noticeable effect on climate change. While Nevada produces approximately 40 million metric tons of CO_2e on an annual basis (Nevada Division of Environmental Protection, 2016), the counties that underlie the airspace are merely a small fraction (12.4 percent [4,960,000 metric tons]) of the state's contribution to global GHG emissions. Therefore, GHG emissions are calculated and compared against emissions of the counties underneath the airspace. Chapter 4 (Cumulative Impacts) discusses the impact of proposed GHG emissions in the context of cumulative impacts and compares them against the current emissions inventory from regional projects that emit GHGs.

3.8.3 Environmental Consequences

This section evaluates how and to what degree the activities described in Chapter 2 (Description of Proposed Action and Alternatives) potentially impact air quality within the region of influence. A summary of the potential impacts with implementation of the No Action Alternative or any of the three action alternatives (Alternatives 1, 2, and 3) is provided at the end of this section (see Section 3.8.3.6, Summary of Effects and Conclusions).

3.8.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. All training activities within FRTC that require ground ranges or restricted airspace would likely cease following the expiration of the land withdrawal in November 2021. The Navy could still perform some range activities that only require MOAs that are independent of the land withdrawal (e.g., non-firing air combat maneuvers, search and rescue, close air support). As such, the Navy would have to reevaluate the mission of NAS Fallon if this alternative were implemented.

3.8.3.1.1 Criteria Pollutants

Construction and infrastructure activities would not occur under this Alternative, and existing aircraft operations would likely decrease in relation to the environmental baseline. In addition, the opening of approximately 220,000 acres of land for public use could further disperse emissions generated by off-highway vehicles, and other vehicles used in connection with grazing, mining, recreation, and tourism. Therefore, implementation of the No Action Alternative would likely improve the ambient air quality of the region.

3.8.3.1.2 Greenhouse Gases

Implementation of the No Action Alterative would continue to contribute emissions of GHGs from the combustion of fossil fuels. However, construction and infrastructure activities would not occur under the No Action Alternative, and existing aircraft operations would also likely decrease in relation to the

environmental baseline GHG emission value. Therefore, implementation of the No Action Alternative would substantially contribute to regional GHG emissions.

3.8.3.2 Alternative 1: Modernization of the Fallon Range Training Complex

As described in Chapter 2 (Description of Proposed Action and Alternatives), Alternative 1 would include renewing the current withdrawal as well as withdrawing additional public land and acquiring non-federally owned land. The amount of training activities would not increase under this Alternative. Instead, it would redistribute training activities across the expanded area, which has no impact on the annual emission rate. Therefore, there would be no change from the environmental baseline for training activities. All construction/installation/perimeter fencing activities would be within the Nevada Intrastate Air Quality Control Region. Creation of new target areas include the placement of targets (e.g., conex boxes, plywood targets simulating missile placements), which already occurs under the environmental baseline. These activities would continue under the action alternatives, but in new locations as part of typical range operations. Since operational/long-term emissions would not change as a result of the Proposed Action, only temporary construction period emission and impacts are addressed in the follow subsections.

3.8.3.2.1 Bravo-16

Under Alternative 1, the Navy would construct a combat village (a collection of conex boxes arranged to mimic an urban landscape) on existing B-16 lands. The Navy would use an off-highway vehicle to deliver the conex boxes to the site and a soil compactor and grader to level the ground around each conex box beforehand.

The entirety of the lands requested for withdrawal would be fenced utilizing Bureau of Land Management (BLM)-approved four-strand fencing with six 20-feet double swinging gates installed to provide controlled access. Approximately 31 miles of fencing is anticipated to be required to completely enclose the land area requested for withdrawal and join with existing fences of B-16. A single crew using a skid steer loader, backhoe, dump truck, and fuel truck, will take approximately 140 days to construct this fence, with an estimated 1,200 feet installed per day. Emissions from this activity would be generated by combustion of fossil fuels and ground disturbance.

3.8.3.2.2 Bravo-17

The Navy would construct two target maintenance buildings (pre-engineered metal building, approximately 60 feet by 100 feet) on existing cleared and graded B-17 lands, near the existing entry gate on State Route 839. In addition to the administration building, the Navy would install two communication towers within the proposed expansion area, though their configuration and placement has yet to be determined. However, the communications towers would be solar powered, compatible with military training, and serviced via existing gravel road, which do not need to be developed.

All of the lands requested for withdrawal would be fenced utilizing BLM-approved four-strand fencing with eight 20-foot double swinging gates installed to provide controlled access. Approximately 75 miles of fencing is anticipated to be required to completely enclose the land area requested for withdrawal and join with existing fences of B-17. The final length of the fence would depend on topography and final routing around obstacles. Two crews would take approximately 330 days to install the fence, with an estimated 1,200 feet installed per day.

Infrastructure and Road Construction to Support Alternative 1

With the expansion of B-17, up to 30 miles of State Route 839 would no longer be available for public use. Under Alternative 1, three notional relocation corridors (Figure 2-1) would be potentially used for construction. While construction of any notional relocation corridor would increase air emissions associated with clearance, grading, and construction activities, this EIS does not quantify those emissions, as the Navy would perform site-specific NEPA action prior to any potential ultimate relocation of the corridor.

Under Alternative 1, the Navy would potentially relocate the Paiute Pipeline that runs through the southern area of the proposed B-17 expansion area. The Navy would perform site-specific NEPA action prior to any activities associated with relocating the pipeline, which would account for emissions produced by this action. Emissions that would potentially arise from the relocation of the corridor would be temporary and would not persist following completion of construction.

3.8.3.2.3 Bravo-20

Under Alternative 1, one target maintenance building would be installed (approximately 60 feet by 100 feet pre-engineered metal building) on existing B-20 lands. Additionally, the entirety of the lands requested for withdrawal would be fenced utilizing BLM-approved four-strand fencing with five 20-foot double swinging gates installed to provide controlled access. Approximately 90 miles of fencing is anticipated to be required to completely enclose the land area requested for withdrawal and join with existing fences of B-20. Two crews would take approximately six months to install the fence, with an estimated 1,200 feet of fence being installed per crew per day.

3.8.3.2.4 Dixie Valley Training Area

Under Alternative 1, the Navy would develop three new electronic warfare sites: North Job Peak, 11-Mile Canyon, and Fairview Low. Each site would be sited on a small flat parcel of land (up to 5 acres, though size of each electronic warfare site would be expected to be approximately 60 by 100 feet) to minimize amount of soil disturbance and grading activities. Each electronic warfare site would be fenced with 8-foot chain link fencing and a 16-foot swing gate, which would be the only semi-permanent structures on each site. Construction would be limited to the perimeter fencing. Roads would not be developed to each of the new electronic warfare sites, as existing trails and roads would be used to transport construction materials to the site as well as provide access for servicing.

3.8.3.2.5 Fallon Range Training Complex Special Use Airspace

Proposed airspace changes under Alternative 1 are primarily within the existing SUA of the FRTC. Section 2.3.2.5 (Special Use Airspace Modifications) describes airspace changes. Although the lowering of certain SUA floors (see Section 3.6, Airspace) would increase the amount of area where flights could go below 3,000 feet, which would presumably increase the amount of emissions under 3,000 feet, the percentage of time that these flights would actually be under 3,000 feet would not appreciably change. Since changes in the amount of criteria air pollutant and precursor emissions that would originate from changes in SUA would be negligible, and there are no construction activities proposed under Alternative 1 under the SUA (other than those discussed above for the potential State Route 839 and Paiute Pipeline relocations), emissions within the FRTC SUA would not appreciably change.

3.8.3.2.6 Criteria Pollutants

Total emissions were estimated from proposed construction activities defined in the above sections and are based on emission factors for specific equipment from the EPA's MOVES 2014b model. The list of equipment includes general construction equipment such as dump trucks, tractors, backhoes, and generator sets. Table 3.8-4 lists estimated annual criteria and precursor air pollutant emissions under all Alternatives. As discussed in the approach to analysis, General Conformity *de minimis* thresholds were used as a screening level to determine whether pollutant emissions associated with the Proposed Action would be significant. The increases in construction/infrastructure activities would result in a corresponding increase in criteria and precursor pollutant emissions, though emissions from activities under Alternative 1 would not exceed *de minimis* standards. All criteria air pollutants would temporarily increase under Alternative 1 while construction activities are ongoing but would not contribute significantly to changes in regional air quality, as their contributions to regional emissions are minimal and short term. Following construction, emissions associated with Alternative 1 would return to their normal levels. In addition, the revocation of roughly 600,000 acres would reduce the amount of off-highway vehicles being driven in the area, further bettering air quality within the ranges. However, these emissions would most likely be relocated to adjacent areas within the same air basin.

Table 3.8-4: Maximum Annual Criteria Air Pollutant Emissions from Construction Under Alternative 1

Emissions Source	Criteria and Precursor Air Pollutant Emissions in Tons					
	CO	NO_x	VOC	SO_x	PM_{10}*	$PM_{2.5}$*
B-16						
Installation of Perimeter Fencing	0.0324	0.0678	0.0170	0.0003	3.0534	0.0384
Combat Village Installation	0.0139	0.0602	0.005	0.00006	0.2698	0.0285
B-17						
Construction of two target maintenance buildings	0.0021	0.0034	0.0013	0.0000	0.0058	0.0008
Installation of Perimeter Fencing	0.0730	0.1540	0.0352	0.0005	6.2579	0.6329
B-20						
Construction of target maintenance building	0.0117	0.0018	0.0008	0.0001	0.0261	0.0020
Installation of Perimeter Fencing	0.0876	0.1848	0.0422	0.0006	7.4995	0.7585
DVTA						
Installation of Electronic Warfare sites	0.0004	0.0008	0.0002	0.0000	0.035	0.0035
Alternative 1 Total =	**0.2211**	**0.4728**	**0.1017**	**0.0102**	**17.1475**	**1.4646**
***De Minimis* Threshold or Level**	100	100	100	100	100	100
Exceeds *De minimis*?	**No**	**No**	**No**	**No**	**No**	**No**

Table 3.8-4: Maximum Annual Criteria Air Pollutant Emissions from Construction Under Alternative 1 (continued)

Emissions Source	Criteria and Precursor Air Pollutant Emissions in Tons					
	CO	NO_x	VOC	SO_x	PM_{10}*	$PM_{2.5}$*

Notes: CO = carbon monoxide, NO_x = nitrogen oxides, PM_{10} = suspended particulate matter less than or equal to 10 micrometers in diameter, $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 micrometers in diameter, SO_x = sulfur oxides, HC = total hydrocarbons.
*PM_{10} and $PM_{2.5}$ emissions include both general vehicle emissions and emissions generated in the form of fugitive dust.

3.8.3.2.7 Hazardous Air Pollutants

Processes associated with Alternative 1, including fuel combustion, emit hazardous air pollutants. Trace amounts of hazardous air pollutants are emitted by combustion sources participating in construction/demolition activities. As described in Section 3.8.2.1.2 (Hazardous Air Pollutants), the hazardous air pollutants emitted by training activities covered by the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement* were sufficiently small that they did not need to be quantified. Under Alternative 1, even fewer combustion sources for construction activities would be used than for ongoing training, meaning that construction activities would also emit even less hazardous air pollutants than training activities. Therefore, hazardous air pollutant emissions estimates were not calculated because the small amounts that would be emitted from construction activities would be temporary and trivial. Furthermore, the majority of hazardous air pollutants emissions would be intermittent and distributed within the air basin. Their concentrations would be further reduced by atmospheric mixing and other dispersion processes. After initial mixing, it is possible that hazardous pollutants would be measurable, but they would be in very low concentrations and would not affect the air quality in the air quality control regions.

3.8.3.2.8 Fugitive Dust

The potential for fugitive dust to be generated by construction activities that would cause ground disturbance under Alternative 1 would increase in comparison to the existing conditions. Table 3.8-5 lists estimated annual controlled PM_{10} and $PM_{2.5}$ emissions under Alternative 1, which indicates that while fugitive dust emissions from construction activities are low, they would still be considered an emission source and would require a Class II Surface Area Disturbance permit from the Nevada Department of Environmental Protection since emissions would be less than 100 tons per year for each criteria pollutant. Standard operating procedures as listed in the NAS Fallon Dust Control Plan would be implemented, which would reduce the potential for fugitive dust from construction. The primary strategy for dust control described in the NAS Fallon Dust Control Plans consists of a phased approach to acreage disturbances; Surface Area Disturbance activities (grading/leveling and shoulder-dragging) may be conducted in discrete phases rather than via disturbances of entire areas in one operation. Specific measures, using best practical methods available for dust suppression, would include, but would not be limited to, the following approaches and procedures:

- Water trucks may be used for water spraying.
- Traffic control measures, including vehicle speed controls (not to exceed 35 miles per hour) will be imposed. Restrictions on non-project vehicles may also be imposed in affected areas during Surface Area Disturbance activities.

- Whenever possible, Surface Area Disturbance activities shall be scheduled immediately following periods of precipitation. Operations may be suspended when winds (or other meteorological conditions) make fugitive dust control difficult.
- Any visible material tracked from Surface Area Disturbance locations onto adjoining paved roads shall be promptly removed.
- A designated on-base facility with wash racks and water hoses will be made available to clean equipment and machinery as needed.

Table 3.8-5: Potential Fugitive Dust from Construction Activities

Emissions Source	PM_{10} (tons/yr)	$PM_{2.5}$ (tons/yr)
B-16		
Installation of perimeter fencing	3.05	0.305
Combat Village Installation	0.268	0.0268
B-17		
Construction of two target maintenance buildings	0.0056	0.0006
Perimeter fencing	6.25	0.625
B-20		
Construction of target maintenance building	0.019	0.0019
Installation of perimeter fencing	7.49	0.749
DVTA		
Installation of Electronic Warfare sites	0.035	0.0035
Total =	**17.118**	**1.7118**

Notes: PM_{10} = particulate matter less than or equal to 10 micrometers in diameter, $PM_{2.5}$ = particulate matter less than or equal to 2.5 micrometers in diameter, DVTA = Dixie Valley Training Area. These emissions are included in Table 3.8-4.

Following construction activities, fugitive dust emissions are anticipated to decrease back to original levels. Additionally, since the withdrawal would close off several roads used by Off Highway Vehicles, the amount of ground disturbance sources would decrease, as would fugitive dust production in the area from Off Highway Vehicle users.

Fugitive dust from construction activities would have no significant impact on air quality under Alternative 1.

3.8.3.2.9 Greenhouse Gas Emissions

Implementation of Alternative 1 would contribute directly to emissions of GHGs from the combustion of fossil fuels. The Proposed Action's emissions have been compared with Nevada's statewide GHG emissions. Table 3.8-6 summarizes the annual GHG emissions associated with construction activities of Alternative 1. Construction and infrastructure activities would generate approximately 281 metric tons of CO_2e (Table 3.8-6), which is approximately 0.000007 percent of Nevada's annual CO_2e contribution.

These estimated annual GHG would be unlikely to have a significant impact on the regional air quality; however, cumulative GHG impacts are anticipated.

Table 3.8-6: Greenhouse Gas Emissions from Construction Activities Under Alternatives 1, 2, and 3

Emissions Source	GHG Emissions in Metric Tons[1]
	CO_2e
B-16	
Perimeter Fencing	37.05
Combat Village Installation	11.26
B-17	
Construction of two target maintenance buildings	19.28
Perimeter Fencing	89.64
B-20	
Construction of target maintenance building	15.90
Installation of Perimeter Fencing	107.57
DVTA	
Installation of Electronic Warfare sites	0.42
Total =	**281.12**
Affected County GHG Emissions	**4,960,000**
Percentage of Nevada's Emissions	**0.0057%**

[1] $CO_2e = (CO_2 * 1) + (CH_4 * 25) + (N_2O * 298)$.

Notes: CO_2 = carbon dioxide, CH_4 = methane, N_2O = nitrogen dioxide, CO_2e = carbon dioxide equivalent. DVTA = Dixie Valley Training Area. All actions would take up to one year for implementation, and would no longer contribute to air quality after completion of project.

3.8.3.2.10 Summary of Effects and Conclusions

The implementation of Alternative 1 would result in impacts to the ambient air quality from emissions produced during construction activities. The amount of emissions released across all ranges during the construction process would be well below the *de minimis* levels of 100 tons per year. In addition to the low amounts of emissions being released, construction activities would be distributed across a vast area and would not have lasting impacts. Therefore, it is expected that Alternative 1 would not have a significant impact on the ambient air quality and would be unlikely to affect the attainment status of the region.

3.8.3.3 Alternative 2: Modernization of the Fallon Range Training Complex and Managed Access

Under Alternative 2, the Navy would renew its current public land withdraw at the FRTC. The Navy would also withdraw and acquire additional land to be reserved for military use similar to Alternative 1. However, under Alternative 2, certain public uses within specified areas of B-16, B-17, and B-20 would be allowed when the ranges are not operational (i.e., typically weekends, holidays, and when undergoing scheduled maintenance) (refer to Table 2-5). Allowing certain activities would mean that some emissions, specifically those associated with hunting activities and geothermal activities, would be

pushed off the ranges under Alternative 1 but could continue to occur within the boundary of the ranges under Alternatives 2 and 3. However, this would not likely affect the emissions that would occur within the air basin since these activities would likely continue on adjacent lands if access were completely restricted.

3.8.3.3.1 Bravo-16

Changes regarding public access would not change the proposed distribution of military training activities within and above B-16 or the proposed construction activities. Alternative 2 would have the same impacts on air quality as Alternative 1.

3.8.3.3.2 Bravo-17

Changes regarding public access would not change the proposed distribution of military training activities within and above B-17 or the proposed construction activities. Alternative 2 would have the same impacts on air quality as Alternative 1.

3.8.3.3.3 Bravo-20

Changes regarding public access would not change the proposed distribution of military training activities within and above B-20 or the proposed construction activities. Alternative 2 would have the same impacts on air quality as Alternative 1.

3.8.3.3.4 Dixie Valley Training Area

Changes regarding public access would not change the proposed distribution of military training activities within the DVTA from Alternative 1 or the proposed construction activities. Alternative 2 would have the same impacts on air quality as Alternative 1.

3.8.3.3.5 Fallon Range Training Complex Special Use Airspace

Changes regarding public access would not change the proposed distribution of military training activities within the FRTC SUA from Alternative 1. Alternative 2 would have similar impacts on air quality as Alternative 1.

3.8.3.3.6 Criteria Pollutants

Table 3.8-4 lists estimated annual criteria and precursor air pollutant emissions under Alternative 1 (which would be the same under Alternative 2). The increases in construction activities would result in a corresponding increase in criteria and precursor pollutant emissions. All would increase under Alternative 2 compared to the existing conditions, but would not contribute significantly to changes in regional air quality.

3.8.3.3.7 Hazardous Air Pollutants

Similar to Alternative 1, HAPs produced during construction activities would be produced in very small quantities and would be sufficiently dispersed to be considered negligible. Allowing public access on the ranges for certain activities would not lead to increases in HAP production as compared to Alternative 1. Therefore, the implementation of Alternative 2 would not have a significant impact on the regional air quality.

3.8.3.3.8 Fugitive Dust

The potential for the generation of fugitive dust under Alternative 2 would be the same as in Alternative 1. Therefore, fugitive dust from construction activities would have no significant impact on air quality

under Alternative 2.

3.8.3.3.9 Greenhouse Gases

Implementation of Alternative 2 would produce the same amount of GHG emissions as Alternative 1. Therefore, implementation of Alternative 2 would not result in significant impacts on air quality.

3.8.3.3.10 Summary of Effects and Conclusions

The implementation of Alternative 2 would result in impacts to the ambient air quality from emissions produced during construction activities. The amount of emissions released across all ranges during the construction process would be well below the *de minimis* levels of 100 tons per year. In addition to the low amounts of emissions being released, construction activities would be distributed across a vast area and would not have lasting impacts. Although there are differences from Alternative 1 with regards to public access on the ranges, these differences would not change the impact conclusions presented under Alternative 1. Therefore, it is expected that Alternative 2 would not have a significant impact on the ambient air quality and would be unlikely to affect the attainment status of the region.

3.8.3.4 Alternative 3: Bravo-17 Shift and Managed Access (Preferred Alternative)

Alternative 3 is similar to Alternative 1 and Alternative 2, but B-17 would be moved further southeast and tilted. Unlike Alternative 1, the Navy would not withdraw land south of U.S. Route 50 as DVTA. Rather, the Navy proposes that Congress categorizes this area as a Special Land Management Overlay. This Special Land Management Overlay will define two areas (one east and one west of the B-17 range) as Military Electromagnetic Spectrum Special Use Zones. These two areas, which are public lands under the jurisdiction of BLM, will not be withdrawn by the Navy and would not directly be used for land-based military training or managed by the Navy. This alternative would have the same access restrictions and Controlled Access Program as Alternative 2.

3.8.3.4.1 Bravo-16

Changes regarding public access would not change the proposed distribution of military training activities within and above B-16 from Alternative 1 or the proposed construction activities. An area of 365 acres that lay south of Simpson Road on B-16 would not be withdrawn. This would reduce the amount of perimeter fencing that would need to be installed, thereby reducing the overall emissions. Implementation of Alternative 3 would have less impacts on air quality than Alternative 1.

3.8.3.4.2 Bravo-17

Under Alternative 3, B-17 would be shifted to the south and east and tilted (rather than the north-south orientation under Alternatives 1 and 2). While target areas would be moved under Alternative 3, the distribution and number of activities at B-17 would not change under Alternative 3. Therefore, Alternative 3 would have similar impacts on air quality as Alternative 1.

With the expansion, tilt, and shift of B-17, approximately 13 miles of State Route 361 would no longer be available for public use. Alternative 3 would involve the potential relocation of a 12 mile portion of State Route 361. Similar to the potential relocation of State Route 839, site-specific NEPA action would need to be conducted prior to any potential ultimate relocation of the highway, which would account for emissions produced by this action. However, emissions that would arise from the relocation of the corridor are expected to be temporary and would not likely persist following completion of construction. A different relocation corridor would also be involved as a potential future action under Alternative 3 for

approximately 18 miles of the Paiute Pipeline, but this analysis would be covered in a site-specific NEPA analysis prior to any action.

Although the B-17 range would consist of an alternative withdrawal boundary in relation to Alternatives 1 and 2, the construction activities that would occur on B-17 under Alternative 3 would be the approximately the same as those analyzed in the other Alternatives. The only difference would be the installation of an additional 3 miles of fence to enclose the alternative boundary. The additional 3 miles of fencing would result in an increase in emissions of about 1.5 percent for fence installation activities on all ranges. Therefore, criteria pollutant emissions and GHG emissions would be approximately the same as those presented in Alternative 1.

3.8.3.4.3 Bravo-20

Changes regarding public access would not change the proposed distribution of military training activities within and above B-20 or the proposed construction activities. An area of 360 acres that lay east of East County Road on B-20 would not be withdrawn as indicated in Alternative 1. This would reduce the amount of perimeter fencing that would need to be installed, thereby reducing the overall emissions. Implementation of Alternative 3 would have less impacts on air quality than Alternative 1.

3.8.3.4.4 Dixie Valley Training Area

Changes regarding public access would not change the proposed distribution of military training activities within the DVTA from Alternative 1 or the proposed construction activities.
Unlike Alternative 1, the Navy would not withdraw land south of U.S. Route 50 as DVTA. Although this would be a change in size of training area from Alternative 1, levels of training would not change. Therefore, Alternative 3 would have the same impacts on air quality as Alternative 1.

3.8.3.4.5 Fallon Range Training Complex Special Use Airspace

Changes regarding public access would not change the proposed distribution of military training activities within the majority of FRTC Special Use Airspace from Alternative 1. Alternative 3 would have similar impacts on air quality as Alternative 1.

3.8.3.4.6 Criteria Pollutants

Table 3.8-4 lists estimated annual criteria and precursor air pollutant emissions under Alternative 1 (which would be the same under Alternative 3). The proposed construction activities would result in a corresponding increase in criteria and precursor pollutant emissions under Alternative 3 compared to the environmental baseline but would not contribute significantly to changes in regional air quality.

3.8.3.4.7 Hazardous Air Pollutants

As described in Alternative 2, HAP emissions would not increase by allowing public access on the ranges. In addition, the installation of an additional three miles of fence as compared to the other alternatives would not result in a significant change in HAP emissions. Pollutants would continue to be temporary and highly dispersed. Therefore, implementation of Alternative 3 would not have a significant impact on regional air quality.

3.8.3.4.8 Fugitive Dust

The potential for the generation of fugitive dust under Alternative 3 would increase in comparison to the existing conditions. Following standard operating procedures and, where warranted, implementing best management practices, such as watering soils, would ensure that fugitive dust from construction does

not result in significant impacts on air quality. Fugitive dust from construction activities would have no significant impact on air quality under Alternative 3.

3.8.3.4.9 Greenhouse Gases

Implementation of Alternative 3 would produce the same amount of GHG emissions as Alternative 1. This limited amount of emissions would not have the potential to contribute to global warming to any discernible extent. Therefore, implementation of Alternative 3 would not result in significant impacts on air quality from GHG emissions.

3.8.3.4.10 Summary of Effects and Conclusions

The implementation of Alternative 3 would result in impacts to the ambient air quality from emissions produced during construction activities. Differences in fencing distance between Alternative 1 and Alternative 3 are miniscule and would not be expected to alter the expected emissions estimates. The amount of emissions released across all ranges during the construction process would be well below the *de minimis* levels of 100 tons per year. In addition to the low amounts of emissions being released, construction activities would be distributed across a vast area and would not have lasting impacts. Similar to Alternative 2, the differences in public access between Alternative 3 and Alternative 1 would not change the impact conclusions presented above. Therefore, it is expected that Alternative 3 would not have a significant impact on the ambient air quality and would be unlikely to affect the attainment status of the region.

3.8.3.5 Proposed Management Practices, Monitoring, and Mitigation

3.8.3.5.1 Proposed Management Practices

The primary proposed management practice is dust control. Strategies for dust control are described in the NAS Fallon Dust Control Plans and would continue to be implemented under the Action Alternatives. Specific measures, using best practical methods available for dust suppression, would include, but would not be limited to, the following approaches and procedures:

- Phasing of Surface Area Disturbance activities (grading/leveling and shoulder dragging) to reduce the amount of area that is disturbed at a single time.
- Water trucks may be used for water spraying.
- Whenever possible, Surface Area Disturbance activities shall be scheduled immediately following periods of precipitation. Operations may be suspended when winds (or other meteorological conditions) make fugitive dust control difficult.
- Equipment used by military units in the region of influence, including construction equipment, is properly maintained in accordance with applicable Navy requirements. Operating equipment meets federal and state emission standards, where applicable.
- 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 construction activities that occur on unpaved surfaces would minimize fugitive dust generation implementing traffic control measures, including vehicle speed controls (not to exceed 15 miles per hour). Restrictions on non-project vehicles may also be imposed in affected areas during Surface Area Disturbance activities.

- Any visible material tracked from Surface Area Disturbance locations onto adjoining paved roads shall be promptly removed.
- A designated on-base facility with wash racks and water hoses will be made available to clean equipment and machinery as needed.
- The need for additional dust abatement measures would be determined on a case-by-case basis during pre-construction planning with input from the NAS Fallon Environmental Division. Factors considered in determining the need for additional dust abatement include the locations and duration of the exercise; the number of vehicles involved in the exercise; soil moisture conditions prior to the exercise; and predicted precipitation, wind speed, and wind direction during the exercise.

3.8.3.5.2 Proposed Monitoring

No monitoring measures are warranted for air quality based on the analysis presented in Section 3.8.3 (Environmental Consequences).

3.8.3.5.3 Proposed Mitigation

No mitigating measures are warranted for the air quality based on the analysis presented in Section 3.8.3 (Environmental Consequences).

3.8.3.6 Summary of Effects and Conclusions

Table 3.8-7 summarizes the effects of the alternatives on air quality.

Table 3.8-7: Summary of Effects and Conclusions on Air Quality

Summary of Effects and National Environmental Policy Act Impact Determination	
No Action Alternative	
Summary	• Impacts on Criteria Air Pollutants, Hazardous Air Pollutants, and Fugitive Dust would be negligible. Changes to air quality would not be detectable and would be below or within historical or desired air quality conditions.
Impact Conclusion	Implementation of the No Action Alternative would not result in significant impacts on air quality.
Alternative 1	
Summary	• Small increase of Criteria Air Pollutants relative to baseline Nevada emissions and the Environmental Baseline. Measurable changes in air quality would be expected locally, but the attainment status in the Northwest Nevada Intrastate Air Quality Control Region and Nevada Intrastate Air Quality Control Region would not be affected. • Very small increase of Hazardous Air Pollutant Emissions relative to baseline Nevada emissions since they would be at least an order of magnitude smaller than levels of criteria air pollutants. • Small increases in fugitive dust from construction activities, though management practices would minimize the generation of dust. • Construction emissions are expected to be localized and temporary, minimizing the overall impact to ambient air quality. • Restricting public access on approximately 600,000 acres of land would most likely relocate emissions that would occur within the range boundaries from public activities to adjacent lands within the air basin.
Impact Conclusion	Implementation of Alternative 1 would not result in significant impacts on air quality.

Table 3.8-7: Summary of Effects and Conclusions on Air Quality (continued)

Summary of Effects and National Environmental Policy Act Impact Determination	
Alternative 2	
Summary	• Implementation of access allowances would not impact the level of Criteria Air Pollutants relative to baseline Nevada emissions and the Environmental Baseline. Measurable changes in air quality would be expected locally, but the attainment status in the Northwest Nevada Intrastate Air Quality Control Region and Nevada Intrastate Air Quality Control Region would not be affected. • Implementation of access allowances would not impact Hazardous Air Pollutant Emissions relative to baseline Nevada emissions. • Implementation of access allowances would not impact fugitive dust from construction activities, though management practices would minimize the generation of dust. • Construction emissions are expected to be localized and temporary, minimizing the overall impact to ambient air quality. Allowing public access on the ranges for certain activities would increase the amount of pollutants being released within the ranges from Alternative 1.
Impact Conclusion	Implementation of Alternative 2 would not result in significant impacts on air quality.
Alternative 3	
Summary	• Small increase of Criteria Air Pollutants relative to baseline Nevada emissions and the Environmental Baseline. Measurable changes in air quality would be expected locally, but the attainment status in the Northwest Nevada Intrastate Air Quality Control Region and Nevada Intrastate Air Quality Control Region would not be affected. • Small increase of Hazardous Air Pollutant Emissions relative to baseline Nevada emissions. • Small increases in fugitive dust from construction activities, though management practices would minimize the generation of dust. • Construction emissions are expected to be localized and temporary, minimizing the overall impact to ambient air quality. • An additional 3 miles of fence would need to be added under Alternative 3 as compared to the other alternatives. This would only constitute a minor difference and would not be a significant change.
Impact Conclusion	Implementation of Alternative 3 would not result in significant impacts on air quality.

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