Environmental Assessment

IMPLEMENTATION OF EXPLOSIVES EFFECTS DEMONSTRATION TRAINING

FEDERAL LAW ENFORCEMENT TRAINING CENTER OFFICE OF ARTESIA OPERATIONS (FLETC OAO)

Prepared for:
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Federal Law Enforcement Training Centers
Office of Artesia Operations
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DRAFT

May 2020

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FINDING OF NO SIGNIFICANT IMPACT

IMPLEMENTATION OF EXPLOSIVES EFFECTS DEMONSTRATION TRAINING

FEDERAL LAW ENFORCEMENT TRAINING CENTER

OFFICE OF ARTESIA OPERATIONS

ARESTIA, EDDY COUNTY, NEW MEXICO

In accordance with the National Environmental Policy Act of 1969, as amended, this Draft Environmental Assessment (DEA) dated **28 May 2020**, has been prepared for the **Federal Law Enforcement Training Center (FLETC), Office of Artesia Operations (OAO), Artesia, Eddy County, New Mexico, to address the proposed Implementation of Explosives Effects Demonstration Training**. This DEA fulfills the requirement of NEPA; the Department of Homeland Security (DHS), Directive 023-01 *Implementation of the National Environmental Policy Act* (Revision 01); and FLETC Directive 75-07 *National Environmental Policy Act Compliance* (August 9, 2017).

This DEA evaluates the Proposed Action (Preferred Alternative) and the No Action Alternative. Under the Proposed Action, FLETC OAO would implement an Improvised Explosives Detonation Effects Demonstration Sequence (herein referred to as IED Demo) as part of its current training curriculum in accordance with the Explosives Safety Program of the FLETC Safety Manual. The Proposed Action is needed to meet Federal law enforcement training standards for the sight and sound recognition of explosive devices, and to improve the overall readiness and capabilities of Federal personnel, with on-site field detonations in the project area. The recommended IED Demo training action would include:

<u>IED Demo Training</u>

- The proposed training frequency would be 15 class sessions per year. Training activities would occur within a designated area of the FLETC OAO West Campus Driver Training Facility (DTF) near the existing firearms complex, in a heavily disturbed area. The total area needed for the proposed training would be approximately one acre, although actual disturbance would be less than one acre. The area would be maintained flat and clear of any vegetation to reduce fire risk, with a bleacher observation area set at an existing observation tower for class participant safety in accordance with the Bureau of Alcohol, Tobacco, and Firearms (ATF) safety standards.

- Each proposed training session would involve detonation of up to 11 different IEDs of increasing strength, ranging from small "open-burn" detonations of safety fuse up to five-pound charge explosive detonations. All but two of the proposed detonation would be suspended charges, with post-detonation forensic review training and clean-up immediately after each session.

- FLETC would install eleven 10-foot by 10-foot concrete pads, which is where the proposed detonations would occur. The pads would be placed within 20-foot by 20-foot cleared areas for containment of associated residue. Smaller open-burn demonstrations would be conducted near the bleacher observation area, and larger IED demonstrations would be located at firing points with increasing distances from the observation area.

In addition to the recommended IED Demo action, a "No Action" alternative was evaluated. For all alternatives, the potential effects were evaluated, as appropriate. A summary assessment of the potential effects of the recommended action are listed in Table 1:

Table 1: Summary of Potential Effects of the Recommended Action

	Insignificant effects	Insignificant effects as a result of mitigation*	Resource unaffected by action
Climate / Climate Change	☐	☐	☒
Geology / Soils	☐	☐	☒
Prime and Unique Farmland	☐	☐	☒
Water Resources	☐	☐	☒
Aesthetics	☐	☐	☒
Air Quality	☐	☐	☒
Noise	☒	☐	☐
Hazardous, Toxic, and Radioactive Waste	☐	☐	☒
Vegetation	☐	☐	☒
Noxious / Invasive Species	☐	☐	☒
Wildlife	☐	☐	☒
Special Status Species / Migratory Birds	☐	☐	☒
Cultural / Historic Resources	☐	☐	☒
Tribal Trust Resources	☐	☐	☒
Land Use	☐	☐	☒
Socioeconomics	☐	☐	☒
Environmental Justice	☐	☐	☒
Human Health and Safety	☒	☐	☐

*No compensatory mitigation is required as part of the recommended plan.

Public and agency review of the DEA and FONSI was completed on **_TBD__.** All comments submitted during the public review period were addressed in the Final DEA and FONSI.

Pursuant to section 7 of the Endangered Species Act of 1973, as amended, it has been determined that the recommended plan will have no effect on federally listed species or their designated critical habitat.

Pursuant to Section 106 of the National Historic Preservation Act, it has been determined that there would be "No Properties Affected" by the proposed undertaking or on the historic and cultural resources of the region. The State Historic Preservation Office has concurred with these determinations.

Pursuant to the Clean Water Act of 1972, as amended, The proposed IED Demo training would not affect the quality of water in Artesia, nor any waters of the U.S., as there are no permanent flowing surface waters subject to the provisions of Section 401 or Section 404 of the Clean Water Act, nor would a Department of the Army authorization be required. The Proposed Action would occur outside of the floodplain and would not significantly alter any use or natural feature of the area. Therefore, the recommended action is consistent with Executive Order 11988 (Floodplain Management). The proposed work complies with Executive Order 11990 (Protection of Wetlands) as no jurisdictional wetlands occur within the project area.

All applicable environmental laws have been considered and coordination with appropriate agencies and officials has been completed. **No other issues were raised relative to other environmental laws and/or Executive Orders.**

Based on the findings of the EA and after careful review of the potential environmental impacts of the Proposed Action, I have determined that there would be no significant impacts on the quality of the human or natural environment, wither individually or cumulatively. Therefore, preparation of an Environmental Impact Statement is not required.

_____ _____

Date

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LIST OF ACRONYMS USED

APE	Area of Potential Effect
ASTM	American Society for Testing and Materials
ATF	Bureau of Alcohol, Tobacco, and Firearms
BIA	Bureau of Indian Affairs
CPR CoP	Climate Preparedness and Reslience Community of Practice
DHS	Department of Homeland Security
DTF	Driver Training Facility
EA	Environmental Assessment
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FAM	Federal Air Marshal
FFDO	Federal Flight Deck Officer
FLETC OAO	Federal Law Enforcement Training Center, Office of Artesia Operations
FWS	U.S. Fish and Wildlife Service
HTRW	Hazardous, Toxic, and Radioactive Waste
IED	Improvised Explosive Device
IPA	Indian Police Academy
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMED	New Mexico Environment Department
NMEMNRD	New Mexico Energy, Minerals, and Natural Resources Department
NMDGF	New Mexico Department of Game and Fish
NMOSE	New Mexico Office of the State Engineer
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Registry of Historic Places
PSDP	NMED Prevention of Significant Deterioration Program
REC	Recognizable Environmental Conditions
SHPO	State Historic Preservation Office
SWPPP	Storm Water Pollution Prevention Plan
TCP	Traditional Cultural Property
THPO	Tribal Historic Preservation Office
USACE	U.S. Army Corps of Engineers
USBP	U.S. Border Patrol
USDT	U.S. Department of the Treasury
WOTUS	Waters of the United States

1. INTRODUCTION

The Federal Law Enforcement Training Center (FLETC), Office of Artesia Operations (OAO), is a secured facility located in Artesia, New Mexico, and is one of three FLETC residential training sites in the U.S. FLETC's mission is to train all those who protect the homeland, and therefore, its training audience also includes state, local, and tribal departments throughout the U.S. Additionally, FLETC's impact extends outside our Nation's borders through international training and capacity-building activities.

Currently, the 3,620-acre FLETC OAO installation includes a full range of facilities for conducting basic and advanced law enforcement training. Basic support facilities include numerous classrooms building, fitness centers, firearms complex (with indoor and outdoor ranges), practical exercise sites, and the Driver Training Facility (DTF). FLETC OAO is the location of training for various Federal programs including Federal Flight Deck Officer (FFDO), Federal Air Marshal (FAM), United States Border Patrol (USBP), the Bureau of Indian Affairs (BIA) and Indian Police Academy (IPA), United States Fish and Wildlife Service (USFWS), United States Department of Agriculture (USDA), and the Bureau of Land Management (BLM).

1.1 Project Purpose and Need

FLETC OAO proposes to implement an Improvised Explosives Detonation Effects Demonstration Sequence (herein referred to as IED Demo) as part of its curriculum for the purpose of meeting Federal law enforcement training standards for the sight and sound recognition of explosive devices, and to improve the overall readiness and capabilities of Federal personnel. The explosive demonstration must be conducted in conjunction with the associated training program's curriculum. The specific FLETC multi-agency training program requiring the explosive demonstration is currently conducted at the Artesia, NM, and Glynco, GA, Training Delivery Points (TDP's). As such, the requirement is for each site to utilize and instruct from an identical training curriculum. The IED Demo training would allow Federal law enforcement officers the ability to recognize and react to the distinguishable sights, sounds, and signatures of explosive devices detonated in the field, in the execution of their duties, and in order to take immediate action to save lives and preserve valuable resources.

1.2 Project Location

FLETC OAO is situated adjacent to the City of Artesia, NM, on 3,620 acres of the Orchard Park Terrace of the Pecos River, between Roswell and Carlsbad (Figure 1), at an elevation between 3,500 and 3,530 feet, and relatively flat to slightly rolling terrain. The southeastern portion of FLETC OAO is developed and contains classrooms, student housing, administrative offices, and fitness centers; the remaining portion of the installation is used for basic and advanced law enforcement training. Surrounding land uses include industrial/commercial and agricultural, as well as government and city-owned undeveloped areas and the Artesia Municipal Airport.

The proposed IED Demo training would be conducted in a designated site within the FLETC OAO West Campus DTF, neighboring the firearms complex, approximately four miles northwest of Artesia (Figures 1 and 2) on lands that have been extensively modified by agricultural and development activities, including grading, plowing, terracing, and installation of concrete irrigation ditches. The proposed project area sits within Section 4, Township 17 South, Range 25 East, New Mexico Principal Baseline and Meridian, as indicated on the Artesia NW, NM, 7.5-minute U.S. Geological Survey (USGS) Quadrangle Map.

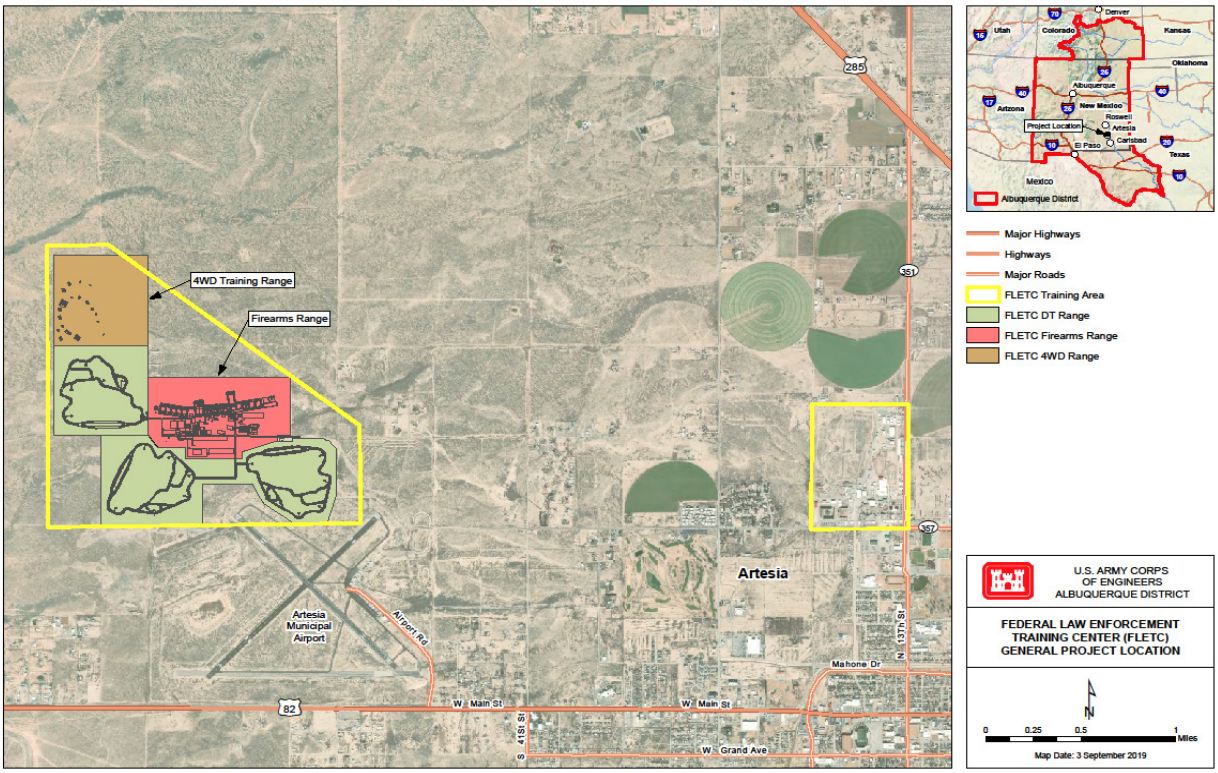

Figure 1: General location of FLETC OAO, Artesia, NM.

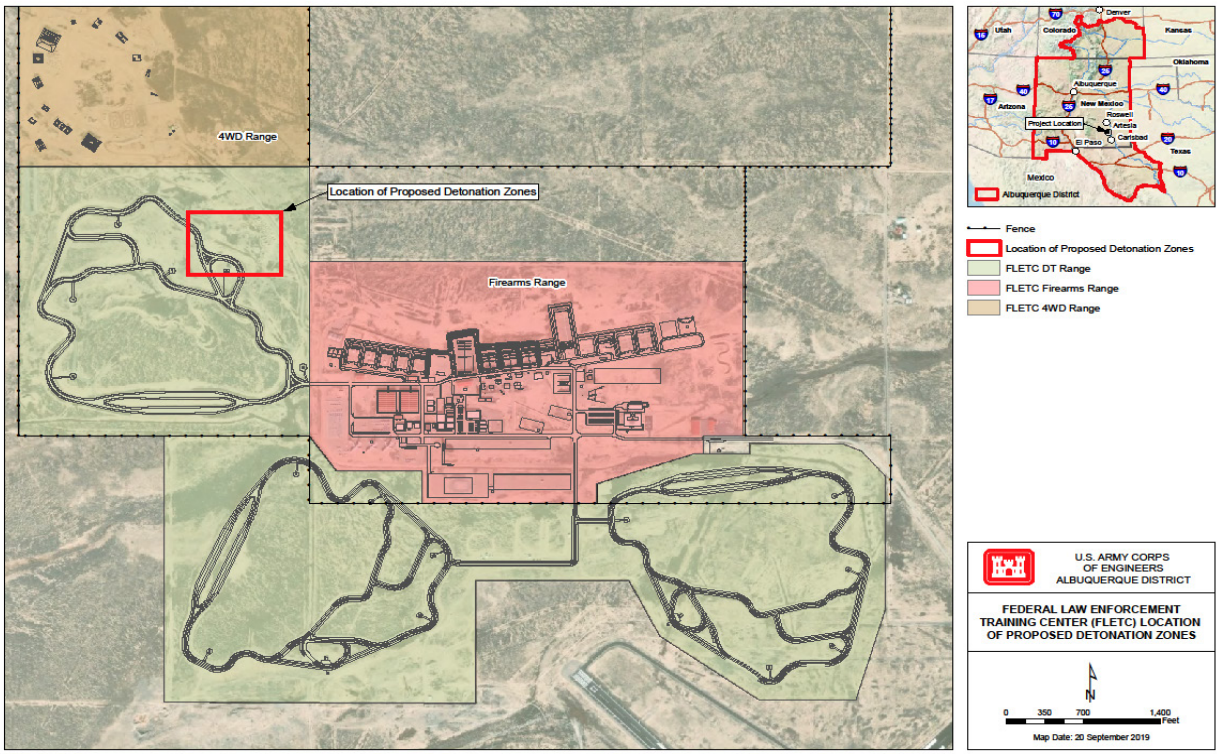

Figure 2: Proposed training location within FLETC OAO.

1.3 Authority

This Draft EA was prepared on behalf of FLETC OAO consistent with the following authorities as provided by Congress:

- The Economy Act of 1932, as amended (*31 U.S.C. §1535*), authorizes agencies to enter into agreements to obtain supplies or services from another agency.

1.4 Compliance with Applicable Laws, Policies, and Plans

This Draft EA was prepared on behalf of FLETC OAO in compliance with all Federal, State, and local requirements, and in accordance with stakeholders within the project area.

1.4.1 Federal Requirements

This Draft EA was prepared on behalf of FLETC OAO in compliance with all applicable Federal Statutes, regulations, and Executive Orders (EO), as amended, including, but not limited to, the following:

Agency guidance includes:

- DHS Directive 023-01 Implementation of the National Environmental Policy Act (Revision 01)
- FLETC Policy 75-07 National Environmental Policy Act Compliance
- DHS Instruction Manual 023-01-001-01, Rev. 01, Implementation of the National Environmental Policy Act

Federal laws include:

- Migratory Bird Treaty Act of 1918 (16 U.S.C. §703 *et seq.*)
- Fish and Wildlife Coordination Act of 1934 (48 Stat. 401; 16 USC §661 *et. seq.*)
- Clean Water Act of 1977 (33 U.S.C. §1251 *et seq.*)
- Watershed Protection and Flood Prevention Act of 1954 (16 U.S.C. §1001 *et seq.*)
- Bald and Golden Eagle Protection Act (16 U.S.C. §668-668d, 54 Stat. 250)
- National Historic Preservation Act of 1966 (54 U.S.C. §300101 *et seq.*)
- National Environmental Policy Act of 1969 (42 U.S.C §4321 *et seq.*)
- Clean Air Act of 1972 (42 U.S.C. §7401 *et seq.*)
- Noise Control Act of 1972 (42 U.S.C. §4901 *et seq.*)
- Endangered Species Act of 1973 (16 U.S.C. §1531 *et seq.*)
- Federal Noxious Weed Act of 1975 (7 U.S.C. §2814)
- Resource Conservation and Recovery Act of 1976 (42 U.S.C. §6901 *et seq.*)
- American Indian Religious Freedom Act of 1978 (42 U.S.C. §1996)
- Archaeological Resources Protection Act of 1979 (16 U.S.C. §470)
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. §9601 *et seq.*)
- Farmland Protection Policy Act of 1981 (7 U.S.C. §4201 *et seq.*)
- Pollution Prevention Act of 1990 (42 U.S.C. §13101 *et seq.*)
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. § 3001 *et seq.*)
- Energy Independence and Security Act of 2007 (P.L. 110-140, Sec. 438, 121 Stat. 1492, 1620)

Federal regulations and guidance includes:

- Protection of Historic and Cultural Properties (36 CFR 800 *et seq*.)
- CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Part 1500 *et seq*.)

EOs include:

- EO 11593: Protection and Enhancement of the Cultural Environment, 1971
- EO 11988: Floodplain Management, 1977
- EO 11990: Protection of Wetlands, 1977
- EO 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 1994
- EO 13045: Protection of Children from Environmental Health Risks and Safety Risks, 1997
- EO 13112: Invasive Species, 1999
- EO 13834: Efficient Federal Operations, 2018

1.5 Permits, Licenses, and Regulatory Compliance

Neither a National Pollution Discharge Elimination System (NPDES) Construction General Permit (CGP), nor a Stormwater Pollution Prevention Plan (SWPPP) would be required for the Proposed Action due to the re-disturbance of less than one-acre. The Proposed Action would also not impact wetlands or other Waters of the United States (WOTUS) and therefore would not require a permit(s) under sections 404 and 401 of the Clean Water Act (CWA).

2. ALTERNATIVES CONSIDERED

Two alternatives are considered for this NEPA analysis: the Proposed Action and the No Action. The Proposed Action (Training Alternative) evaluates the potential environmental impacts, if any, resulting from the implementation of the proposed IED Demo training within the existing FLETC OAO West Campus DTF. Pursuant to Council on Environmental Quality (CEQ) regulations (40 CFR § 1508.9[a][3]), the EA also considers the potential environmental impacts resulting from alternatives considered but rejected from detailed analysis, including the No-Action Alternative, which serves as a baseline against which potential impacts are compared.

2.1 Training Alternative (Preferred)

FLETC OAO proposes to implement an IED Demo (Improvised Explosive Device Explosive Effects Demonstration Sequence) training, which must be conducted in conjunction with the associated training program's existing curriculum currently conducted at the FLETC TDPs in Artesia, NM, and Glynco, GA. To improve the overall readiness and capabilities of Federal personnel, the course would expose students to the sights and sounds of explosive devices they may encounter in the line of duty.

The Proposed Action would take place within the FLETC OAO West Campus DTF, neighboring the firearms complex (Figure 2), and involve detonation of 11 different charges of increasing strength ranging from a small "open-burn" of safety fuse up to a 1.5-pound explosive charge (Table 1). Each detonation point would include a 20-foot by 20-foot area, cleared and maintained free of all vegetation, and graded level. Charges would then be detonated within a 10-foot by 10-foot concrete pad to be installed within each cleared area (Figure 3). Smaller "open-burn" detonations would be conducted near the observation area set-up near an existing West Campus DTF observation tower, while larger charges would be detonated at various points, incrementally distanced from the observation area, in accordance with the FLETC OAO Explosives Safety Program of the FLETC Safety Manual and Explosives Training Range Standard Operating Procedures (SOPs).

FLETC proposes up to 15 IED Demo training sessions annually (4% of the year), depending on the demand from Federal agencies, conducted periodically throughout the calendar year, and would typically involve 24 to 48 students and four FLETC instructors. Normal range operating hours would be 7:30am to 6:00pm, Monday through Friday. Each IED Demo training session would be completed within a single day utilizing the following procedure:

- The range would be set-up mid-morning by range personnel with no students present. All 11 charges would be readied during the same range operation. It is anticipated that range set-up would take between two and four hours.
- Following range set-up, students would muster at the observation area, and the IED Demo training would be conducted over a two-hour period. All 11 charges would be detonated consecutively, with no personnel entering the range area until the sequence has been completed.
- Following detonation of all charges and determination that the range is "safe" by range operators, the students would visit each of the detonation points for forensic training exercises and site clean-up. It is anticipated that the exercise would be completed by early evening.
- All recoverable material would be removed from the range before close of the training day, containerized, and evaluated for proper disposal as exploded ordinance or hazardous waste.

With the exception of the "open-burn" demonstrations (Demo No. 1 and No. 2) which would be conducted near the observation area (Figure 3), all charges would be suspended above-ground during detonation (Table 1). Suspended charges would be placed on a cable between two poles at each point, approximately two-feet above the ground. The suspended charges would be located above 10-foot by 10-foot concrete pads for containment and clean-up of potential residue.

Table 1: IED Explosive Effects Demonstration Sequence Summary.

Demo Number	Detonation Location	Distance from Observ. Area (ft)	Charge Type	Detonation Scenario	Materials
1	Bleacher Area	10	Safety Fuse	On Ground	1-ft safety fuse, One pull-string igniter
2	Point 1	80	Low-explosive Open Burn	On Ground in Burn Pan	1-lb black powder, 1-lb smokeless powder, One electric match, 1-oz smokeless powder bag
3	Point 2	150	Blasting Cap in Paint Can	Suspended	1 electric/shock-tube blasting cap, One paint can
4	Point 3	150	Pentolite	Suspended	One 1/3-lb booster, 1-ft detonating cord, 1 electric/shock-tube blasting cap
5	Point 4	250	Tannerite	Suspended	1-lb Tannerite target, One 10-g booster, 1 electric/shock-tube blasting cap
6	Point 5	250	RDX Sheet	Suspended	8-oz RDX sheet, One 10-g booster, 1 electric/shock-tube blasting cap
7	Point 6	250	Sensitized Toilet Paper	Suspended	One roll toilet paper, 8-oz nitromethane, 1 electric/shock-tube blasting cap
8	Point 7	300	Emulsion Dynamite	Suspended	Two 1.25 x 8 cartridges, 1 electric/shock-tube blasting cap
9	Point 8	300	Binary	Suspended	Two 1.25 x 8 binary, 1 electric/shock-tube blasting cap
10	Point 9	300	C4	Suspended	1.25-lbs C4, One 10-g booster, 1 electric/shock-tube blasting cap
11	Point 10	300	Low-explosive Confined	Suspended	1.5-lbs smokeless powder, 1 electric/shock-tube blasting cap

2.1.1 Access

No borrow material is planned and access to the demonstration area of the project will be via existing West Campus access roads currently in-use.

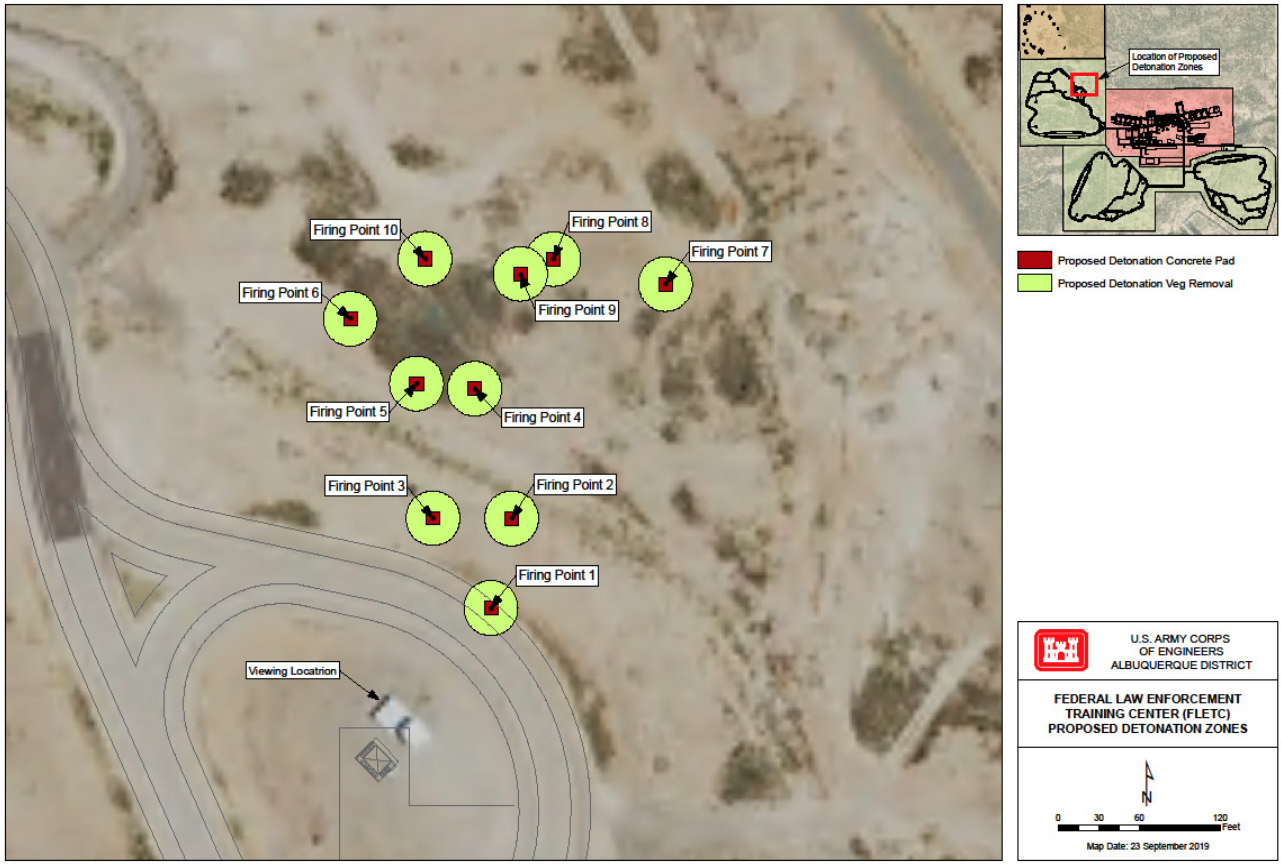

Figure 3: Proposed IED Demo training detonation points.

2.2 No Action Alternative

Under the No Action Alternative, FLETC OAO would not conduct the proposed IED Demo training. Adequate environments to support mission readiness at the installation would not be constructed. The No Action Alternative would not fulfill the project purpose and need as similar curriculum and facilities are not available in the region for the training of Federal law enforcement agents; as a result, the FLETC OAO facility could not support the identified Federal training need.

3. AFFECTED ENVIRONMENT and FORESEEABLE EFFECTS

This section describes the baseline conditions of resources present within the Proposed Action area at the FLETC OAO West Campus DTF, including the existing biological and physical environment, as well as socioeconomic and cultural conditions. This section also discusses the potential environmental consequences of the Proposed Action and No Action alternatives.

Potential consequences for this Proposed Action are qualified in one of four ways: significant, moderate, negligible, and no-impact. Based on CEQ guidelines as described in 40CFR 1500-1508, significant impacts are effects that are most substantial and should receive the greatest scrutiny during the decision-making process. Moderate impacts do not meet the aforementioned criteria to be classified as significant but result in change that is easily detected. Negligible impacts result in little to no effect on the existing environment and are not easily detected.

3.1 Physical Environment

FLETC OAO is located northwest of the City of Artesia in Eddy County, NM. This area falls within the Lower Pecos Valley Subsection of the Pecos Valley Section of the Great Plains Physiographic Province (USGS 2019). The Proposed Action site is situated approximately seven miles west of the Pecos River at an elevation of approximately 3,500 feet, with relatively flat to slightly rolling terrain (USGS 2018). This site is located on lands that have been extensively modified by agricultural and development activities including grading, plowing, terracing, and installation of concrete irrigation ditches.

3.1.1 Climate and Climate Change

Existing Environment

The climate in the vicinity of the Proposed Action site is semi-arid to arid with a growing season between the months of April to October. Average daily temperatures in January are 40 degrees Fahrenheit, and July temperatures average 79.5 degrees Fahrenheit. The mean annual temperature is 60 degrees Fahrenheit. Precipitation falls mainly during the spring and summer and averages 12 to 13 inches per year (NOAA 2018). The prevailing winds in the region are generally from the southeast in summer and west in winter and are usually moderate, although relatively strong winds often accompany occasional frontal activity during late winter and spring months (WRCC 2020).

The climate of Artesia is semi-arid, with average annual precipitation totaling 12.95 inches (WRCC 2020). Precipitation in the study area is strongly unimodal, peaking during the July-September months, with the highest average monthly precipitation in August at 1.95 inches. This pattern reflects the importance of summer and early fall monsoon precipitation and the general paucity of precipitation at other times of the year. Monsoon precipitation comes in the form of convective storms and is relatively localized. There is large intra-annual and inter-annual variation in the amount and intensity of monsoonal precipitation.

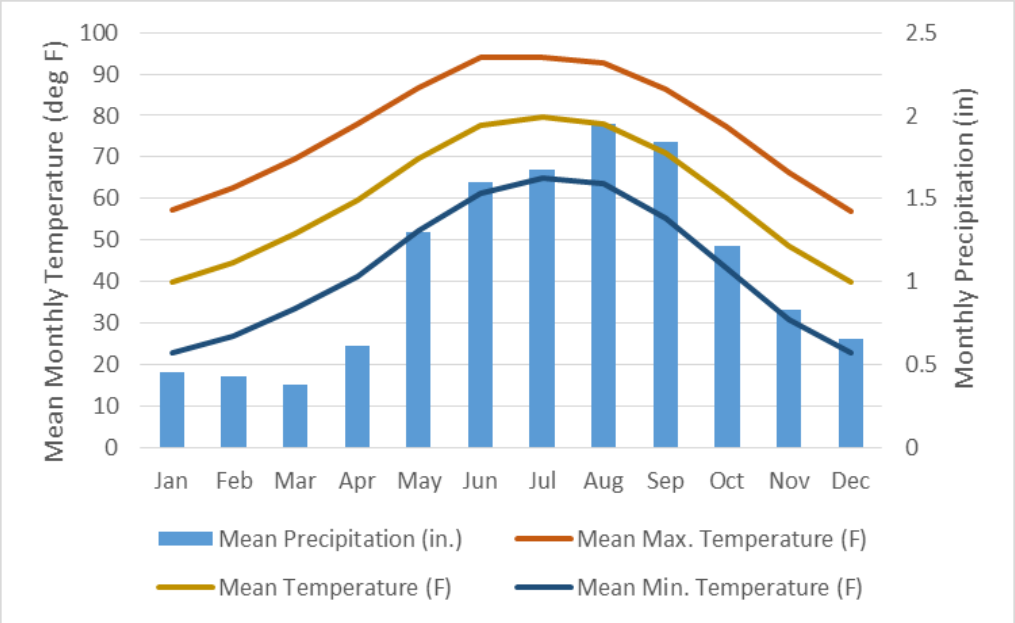

Figure 4: Current climate in the vicinity of Artesia (NWS COOP Station Artesia 6S, New Mexico (WRCC 2020)).

Changes in temperature have already been observed for the Southwestern U.S. consistent with model projections of future warming: average annual maximum and minimum temperatures have both increased 1.61°F since the first half of the 20th Century (Vose et al. 2017). Cold extremes have become less severe while the frequency of intense heat waves (4-day, 1-in-5 year events) has increased.

Precipitation in southeastern New Mexico has been largely unchanged over the 20th Century (Easterling et al. 2017). There has been a small shift in seasonality, with more precipitation falling in the winter months and less in the spring, but no systematic changes for the summer and fall months. Precipitation intensity has increased slightly.[1]

Climate change is anticipated to impact the Proposed Action area primarily through temperature increases, which are projected to rise by 3.7°F to 4.8°F by mid-Century (2036-2065) and 4.9°F to 8.7°F by late Century (2071-2100), with larger increases in temperature extremes (Vose et al. 2017):

- Change in coldest day of the year: 6.13°F.
- Change in coldest 5-day 1-in-10 year event: 10.20°F.
- Change in warmest day of the year: 5.85°F.
- Change in warmest 5-day 1–in-10 year event: 11.17°F.

[1] There are only ephemeral ungaged watersheds in the project area. The nearest gage, Pecos River near Artesia (USGS 08396500) is on a highly regulated portion of the Pecos River and does not represent hydrologic conditions in the vicinity of the Proposed Action. Therefore, the analysis of trends and nonstationarity in annual maximum peak flows required under ECB 2018-14 was not conducted.

Temperature increases are likely to drive evaporation increases. There is strong model agreement in the direction and magnitude of projected temperature change.

Changes in precipitation are less certain, although winter precipitation is likely to decrease. Some models predict precipitation decreases of three to nine percent in all seasons. However, summer precipitation may increase in intensity, resulting in stronger, wetter storms interspersed with longer dry periods. Hurricanes are likely to increase in strength and moisture content. During late summer, larger, more-persistent hurricanes may provide additional moisture in the monsoon source regions. These changes may increase flood risk in the Rio Grande Closed Basins / Tularosa Basin.

Climate models project a small reduction in precipitation in the future in southeastern NM, with changes in seasonal precipitation assessed as small compared to natural variation (Easterling et al. 2017). Moderately heavy precipitation (1-day, 5% ACE) events are anticipated to increase in magnitude by 10 to 12 percent mid-Century and 12 to 20 percent by late Century.

If overall precipitation is likely to change little, and more of it falls during intense convective storms, then it means the number of storm events must decrease and the periods between them increase. Consequently, soil moisture is anticipated to decline in all seasons (Wehner et al. 2017).

Applied for this assessment, the USACE Climate Preparedness and Resilience Community of Practice (CPR CoP) Climate Hydrology Assessment Tool (https://maps.crrel.usace.army.mil/projects/rcc/portal.html) indicates a small but statistically significant increase in annual maximum monthly flows over the 21st Century relative to current conditions in Hydrologic Unit (HUC) 1306 Upper Pecos Basin as a whole (WYflows = (2.9038 * WY-911.331, R2 = 0.052, p-value = 0.0229478). The CPR CoP Vulnerability Tool suggests a potential increase in flood risk for the Upper Pecos Basin, with future flood events increasing relative to the historic 10 percent ACE event. These findings are consistent with the expected change in precipitation to potentially fewer but heavier precipitation events.

Training Alternative

The small footprint and negligible natural resource use of the Proposed Action Alternative would result in no impacts on existing climate due to construction activities and use.

Projected changes in temperature may have the following impacts on use of the Proposed Action by the sponsor:

- Increase in the number of training days where temperatures are above a reasonable threshold for outdoor activity in the summer months.
- Reduction in the number of days where temperatures are below a reasonable threshold for outdoor activity in the winter months.
- Increased erosion in the vicinity of the Proposed Action due to greater precipitation intensity during the monsoon season.
- Increased wildfire danger from use of the facilities created by the Proposed Action due to reductions in soil moisture (and therefore in vegetation moisture, which increases flammability).

No Action Alternative

The No Action Alternative would result in no impacts on existing climate, while the projected changes in temperature will still occur.

3.1.2 Geology and Soils

Existing Environment

Geology of the area is characterized by the presence of the Orchard Park Terrace of the Pecos River. This gravel-capped pediment represents an intermediate erosional episode of the Pecos River, and represents one of five cyclical erosional surfaces recognized in the Pecos Valley (Morgan and Sayre 1942). Most of the irrigation activity in the Roswell Basin is done on a six to ten mile strip of the Orchard Park Terrace. Rock outcropping in the Pecos Basin, in general, range in age from recent to Permian; the major portion of the bedrock underlying the Pecos lowland dates to the Triassic, Permian, and Quaternary periods. Castile anhydrite, Salado halite, and the Rustler limestone of the Ochoa Permian series are the formations that have most influenced topography (Morgan and Sayre 1942; Thornbury 1967).

Soils in the vicinity of FLETC OAO are dominated by the *Reagan-Upton association*, which consists of deep to shallow soils on gently undulating plains and in the broader valleys of the hills and mountains, mainly west of the Pecos River and north of the Black River. Both *Reagan* and *Upton* soils formed mainly in loamy alluvium washed from limestone uplands (NRCS 2019).

Specifically, the soils associated with the Proposed Action area are dominated by the *Reagan-Upton association, 0 to 9 percent slopes* (RE), and the *Reagan loam, 0 to 3 percent slopes* (RA), well-drained, non-hydric, very slightly to moderately saline map units, derived from alluvium and/or eolian deposits with Land Capability Class (LCC) of 2e if irrigated, and 6e non-irrigated. The Ecological System for each is defined as as Loamy R070DY153NM and Shallow R042XC025NM, respectively (NRCS 2019). While classified as Farmland of statewide importance, the Proposed Action area has been heavily disturbed by prior authorized uses so as to negate such classification at the specific site.

Training Alternative

The Proposed Action would have no impact on the area's overall physical and geologic condition, including prime farmland, as there would only be minor localized changes. The proposed IED Demo training would take place within the existing heavily pre-disturbed West Campus DTF, with total soil disturbance of less than 0.2 acres.

No Action Alternative

The in the No Action Alternative would result in no impacts to the physical and geologic condition.

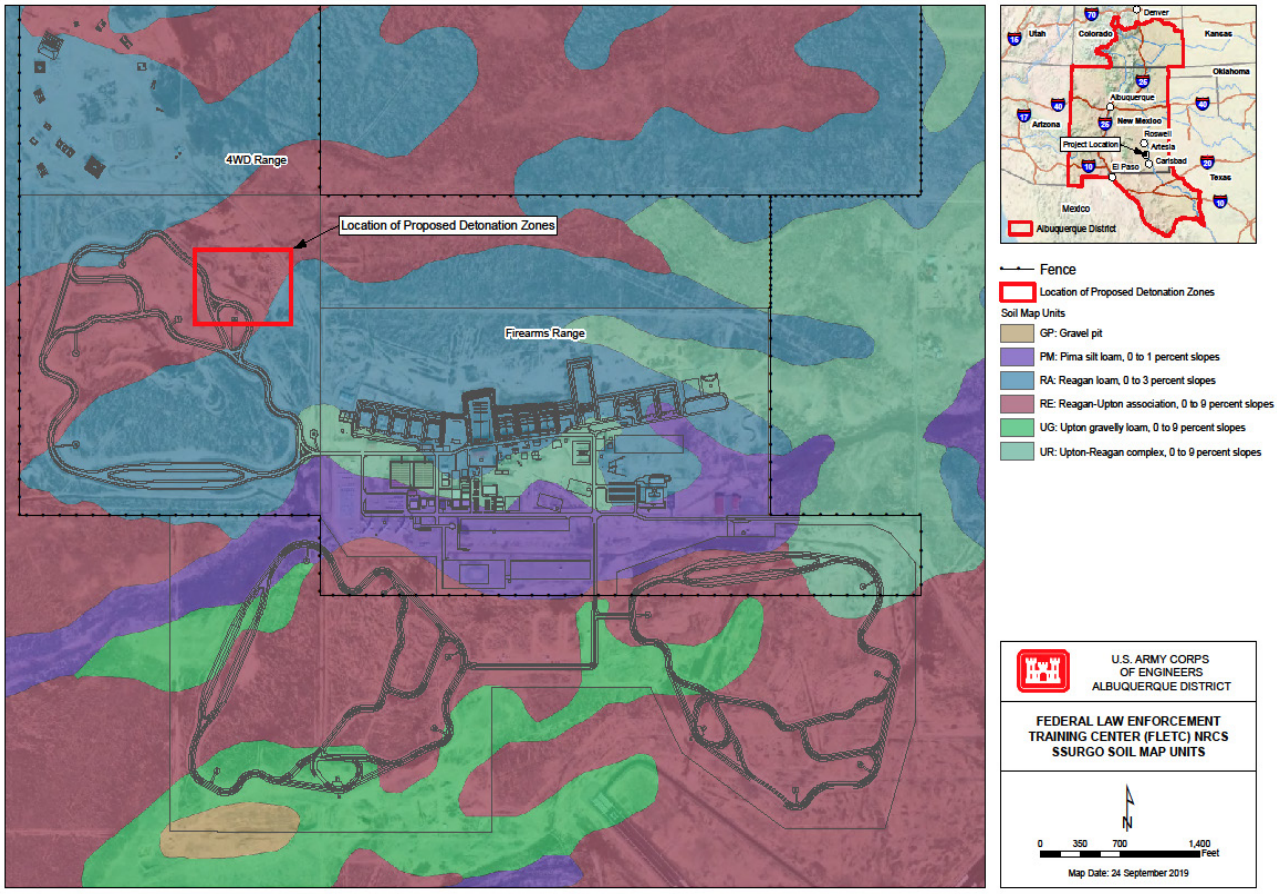

Figure 5: Proposed IED Demo training area soils map.

3.1.3 Water Resources

Existing Environment

There are no permanent flowing surface waters, no surface bodies of water, nor any wetlands identified by the National Wetlands Inventory (NWI), nor during the site visit, within the Proposed Action area (USFWS 2019). Drainage of the overall West Campus DTF is largely overland, and there are no major or minor arroyos or named drainages present (FLETC 1989). The Proposed Action area is located approximately three miles north of Eagle Creek and six miles south of Cottonwood Creek. These waterways drain to the Pecos River, which is approximately seven miles east of the area.

The sole source of stormwater is rainwater in the general Proposed Action area, which runs off impervious surfaces (i.e. existing roadways) surrounding the perimeter of the site and into drainage culverts. Due to the site's distance from WOTUS and infrequency of local rain events, stormwater runoff generally infiltrates the ground prior to entering surface waterbodies, and existing culverts are therefore not regulated as stormwater outfalls. There is not a continuous connection between site drainage and other channels leading to WOTUS.

Training Alternative

The Proposed Action would have no impacts on wetlands or surface bodies of water, as none exist within the Proposed Action site (FLETC 1989). Therefore, the proposed project would fully comply with EO 11988 and EO 11990.

The Proposed Action would have no impact to stormwater based on the potential for stormwater runoff to occur during construction. There would be a net increase in impervious surface of 0.03-acres. The proposed project construction would not affect the quality of water in Artesia, nor any WOTUS, as there are no permanent flowing surface waters. Standard Best Management Practices (BMPs) to prevent on-and off-site erosion would be incorporated in contract specifications; therefore, no significant impacts are expected. Too, as the proposed project area disturbance totals less than one-acre, NPDES general permit guidance would not apply, nor would a SWPPP be required.

No Action Alternative

The No-Action Alternative would result in no impacts to water resources, including water quality or stormwater in Artesia, nor to any WOTUS, wetlands, or floodplains.

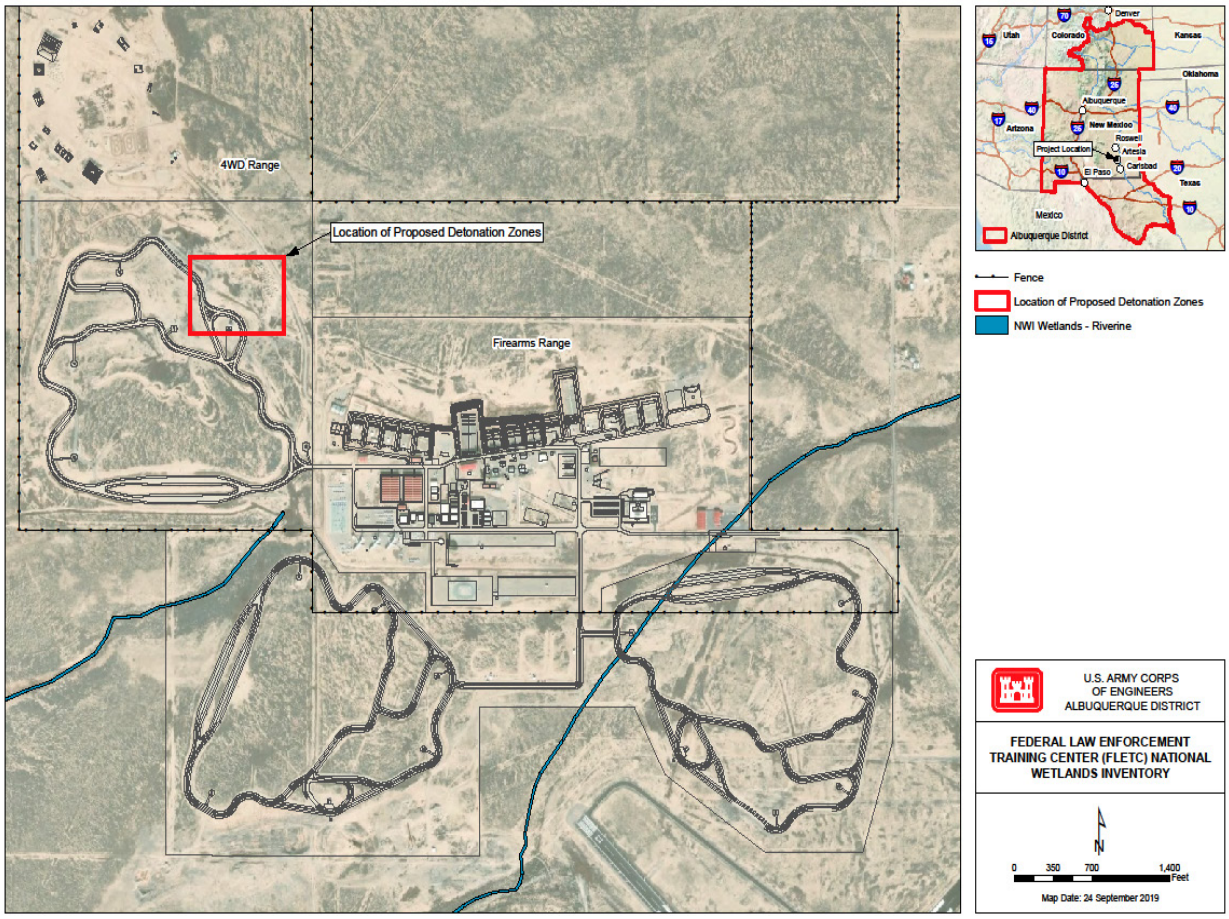

Figure 6: Proposed IED Demo training area National Wetlands Inventory wetlands map.

3.2 Aesthetics, Air Quality, and Noise

3.2.1 Aesthetics

Existing Environment

The evaluation of visual qualities is a value judgment and is subjective, differing according to the perception of each individual. Aesthetically, the Proposed Action area predominantly consists of flat terrain that has been substantially disturbed by human activities. The visual landscape is comprised of sparse grasses, cacti, shrubs, and compacted soils. Man-made features include an asphalt-paved driver training range encompassing the perimeter of the Proposed Action area and corrugated metal culverts in the northern, southern, and southwestern corners, which contribute substantially to the overall visual aesthetics. Natural sources of sound within the Proposed Action area are produced by weather, such as wind and rain, and intermittent wildlife. The predominant sources of sound are associated with current West Campus DTF and adjacent firearms complex operations.

Figure 7: Existing site condition of Proposed Action area.

Training Alternative

Due to the previously-disturbed nature of the Proposed Action area and current area usage as a DTF, the minor changes to visual resources associated with pad construction for the detonation points would have no impact on area aesthetics.

No Action Alternative

The No Action Alternative would result in no impact on area aesthetics.

3.2.2 Air Quality

Existing Environment

The Clean Air Act (CAA) authorizes the EPA to establish National Ambient Air Quality Standards (NAAQS) in order to protect public health and welfare and regulate the emission of hazardous air pollutants (40 CFR part 50). The Proposed Action area is located in the EPA/NMED designated Air Quality Control Region 156 Southwestern Mountains – Augustine Plains. Based on a review of information made available by the EPA Green Book (2019) and the NMED Air Quality Bureau, Eddy County and the Proposed Action area are both in attainment for air quality for pollutants of concern (NMED 2019).

Training Alternative

During implementation of the Proposed Action, negligible short-term effects on air quality are anticipated and would generally be related to emissions during the brief pad construction period (equipment and temporary disturbance of soils (i.e. dust)). Additionally, the limited size, type, and timing of the rapid sequence IED Demo training detonations would occur over less than half of one day for less than 15 days (4%) per year. As such, the emissions related to the Proposed Action are anticipated to have negligible short-term effects on air quality. However, emissions would not be considered significant and would not affect NAAQS attainment status for Eddy County (NMED Air Quality Bureau 2019). No long-term impacts are anticipated to local or regional air quality.

No Action Alternative

The No Action Alternative would result in no impact to local or regional air quality.

3.2.3 Noise

The ear has the remarkable ability to handle an enormous range of sound levels. In order to express levels of sound meaningfully in numbers that are more manageable, a logarithmic decibel (dB) scale is used rather than a linear one. Sudden, brief impulse sounds are often given in dB, though most noise levels are given in dBA, which are decibels adjusted to reflect the ear's response to different frequencies of sound.

The U.S. Army Public Health Center (USAPHC), a U.S. Army Medical Department organization, developed Complaint Risk Guidelines (Army Regulation 200-1) which indicate that noise under 110 dB would be virtually inaudible outside of the project area, and those between 115-130 dB *may* be inaudible, depending on ambient noise (e.g. cars, wind, wildlife) (Table 2).

Table 2: Army Complaint Risk Guidelines (Army Regulation 200-1, U.S. Army 2007).

Perceptibility*	dB Peak	Risk of Receiving Noise Complaints
Audible	< 115	Low
Noticeable, Distinct	115-130	Moderate
Very Loud, May Startle	> 130	High

*Perceptibility is subjective. These classifications are based on how a typical person might describe the event.

Existing Environment

Major sources of intermittent noise in the general Proposed Action area are attributed to automobile traffic and to the Artesia Municipal Airport, City of Artesia, and FLETC OAO facilities and activities. Natural sources of noise at the Proposed Action site are limited to weather, such as wind and rain, and intermittent wildlife. The predominant sources of noise are associated with current West Campus DTF operations and

the neighboring firearms complex, which are available during normal weekday business hours. Additionally, noise occurs regularly from the overhead air traffic affiliated with the Artesia Municipal Airport, located adjacent to the southern limits of the FLETC OAO.

A shot analysis was conducted by HazAir, Inc. (2020) (Appendix A), to determine possible noise impacts associated with the proposed IED Demo training detonations. Final calculations were primarily made using BNOISE2 software, and calculations performed result in peak unweighted decibels. Distances calculated are those commonly used to determine likelihood of public complaints due to impulsive noise (Table 2).

BNOISE software was utilized to estimate noise levels for most detonations but is limited to the materials contained within the software so surrogate materials were utilized when necessary. All calculations should be considered represent 'worst-case' scenarios with the following inputs:

- Terrain – Flat (worst-case assumption)
- Elevation – 1,031 meters (Artesia, NM[2])
- Weather – BN3.2 Emulation
- Noise Metric – PK 15 (peak level in unfavorable weather conditions)
- Noise Metric – PK 50 (peak level in neutral weather conditions)

The current FLETC OAO firearms complex includes 450 firing points in both indoor and outdoor ranges, as well as three live-fire shoot houses, three non-lethal shoot house airplanes, mat rooms, classrooms, cover courses, skeet range, and judgmental pistol shooting simulators. Predominantly, the firearms complex outdoor range use is focused on law enforcement pistols firing .040 LE rounds. While several rifles are also used at the outdoor range, noise produced from most – if not all – of them is less than that of a 180-grain .44 Magnum round.

As the firearms complex outdoor range operates near daily, it is subject to a wide variety of weather conditions, both favorable and unfavorable[3]. For this analysis we chose a PK 50 approximation of 115.2 dB at 100 meters (7) since this should be representative of the average day. This value is for a single gunshot, however, and needed to be adjusted to account for several personnel at once.

Training Alternative

The Proposed Action would result in long-term, periodic, minor impacts on noise. The IED demo training held over less than half a day up to 15 times per year could potentially produce peak, unweighted impact noise levels in excess of 130 dB outside the perimeter of the FLETC compound, potentially affecting neighboring homes located within a half-mile radius of the FLETC facility. As with aircraft engines at takeoff (140 dB) from the adjacent Artesia Airport, impact noise exceeding 130 dB may also be felt by individuals and shake or vibrate homes and other personal property.

A shot analysis was conducted by HazAir, Inc. (2020) (Appendix A), to determine possible noise impacts associated with the proposed IED Demo training detonations. Final calculations were primarily made using

[2] https://www.latlong.net/place/artesia-nm-usa-19177.html

[3] Based on the role of weather and the location of the testing, a sunny to partly cloudy day (cloud coverage ≤ 65%) with low sustained winds (≤ 30 mph, or 0-6 on the Beaufort3 scale) would be considered a 'neutral weather' scenario. Similarly, a very cloudy day (>65% cloud coverage) with precipitation likely and with high winds (30+ mph, or 7+ on the Beaufort3 scale), especially those heading generally eastward (i.e. towards the center of population of Artesia), would be considered an 'unfavorable weather' scenario.

BNOISE2 software, and calculations performed result in peak unweighted decibels. Distances calculated are those commonly used to determine likelihood of public complaints due to impulsive noise (Table 2).

The bulk of Artesia (including majority of residences, businesses, schools, medical facilities, and churches) is located well outside the 115 dB PK 15 line, where there is a low risk of noise complaints. At that distance (~1.8 miles from the Proposed Action site) most shots would be faint or inaudible, unless unfavorable weather conditions were present, and would be unlikely to result in public complaints. Shots #4 through #11 would be louder than any single impact noise at the existing firearms range, though continuous operations at the firearms complex and Artesia Municipal Airport may be more noticeable to neighboring homes.

The HazAir, Inc., shot analysis of estimated peak noise contours (Tables 3 and 4; and Figures 7 and 8) include the following:

- *Areas within the 130 dB and greater Pk15 contour, where there is a high risk of noise complaints*: This contour covers only FLETC property; no non-FLETC facilities, including residences, businesses, schools, medical facilities, or churches, fall within this contour under either neutral or unfavorable weather conditions.
- *Areas within the 115-130 Pk15 contour band, where there is a medium risk of noise complaints*: the predominance of the housing is in the Artesia area.

The expected impulse noise exposure from the proposed IED Demo training at FLETC OAO would be short in duration, and for those people occupying spaces within the 115 dB Pk15 contour area, the noise event would be "occasionally" noticeable. A comparison of Table 3, Figure 7 and Table 4, Figure 8 readily shows that noise contours in neutral conditions are more than halved compared to unfavorable conditions. Detonations will be scheduled to occur during "favorable to neutral" weather conditions to mitigate noise impacts to the maximum extent practicable.

No Action Alternative

The No Action Alternative would result in no impacts different from existing conditions, which include the FLETC OAO West Campus DTF and firearms complex, and adjacent Artesia Municipal Airport.

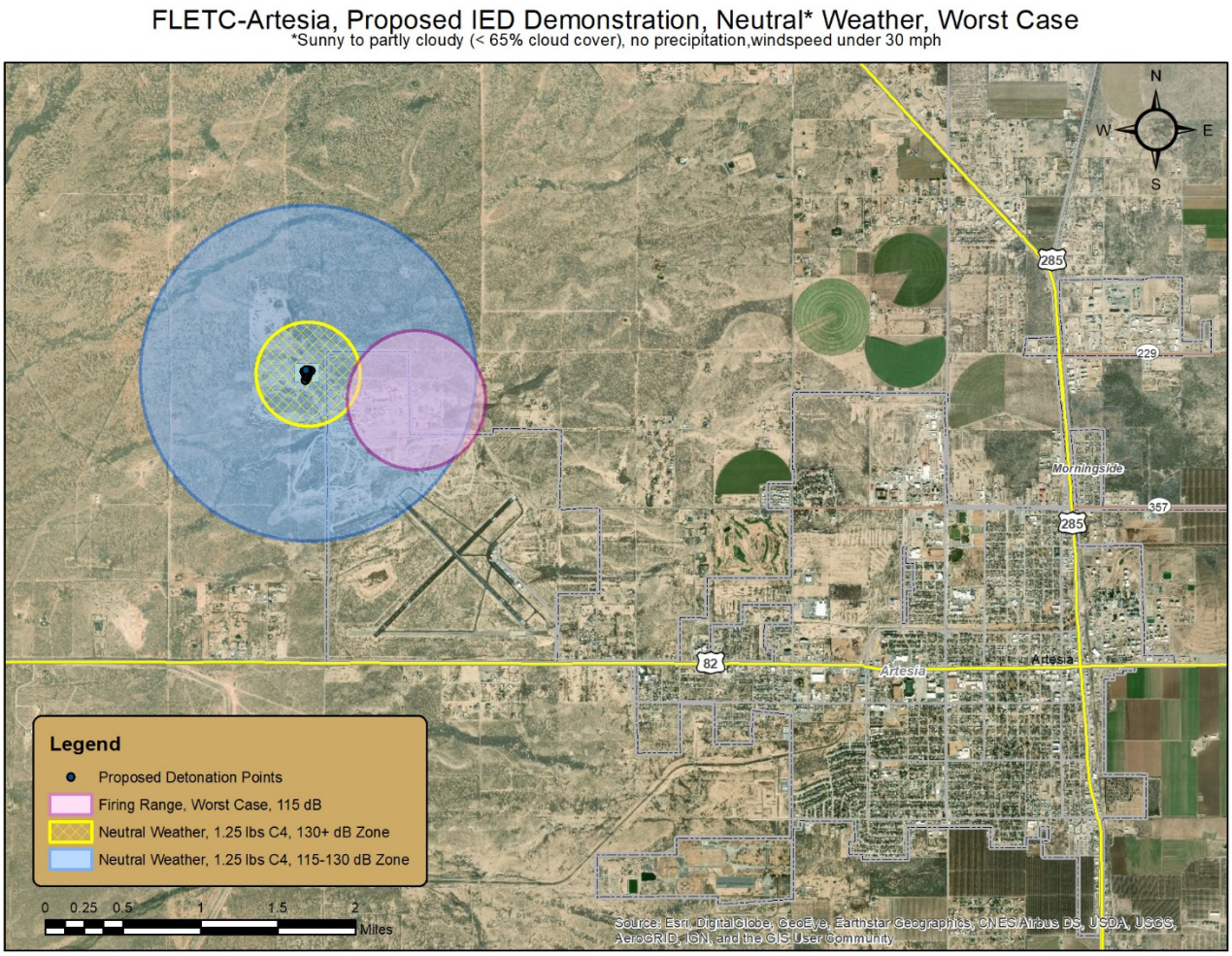

Figure 8: Proposed FLETC OAO IED Demo Training Peak Impact Noise Analysis: Neutral weather, worst case.

Table 3: Proposed FLETC OAO IED Demo Training Peak Impact Noise Analysis: 115dB and 130dB, PK 50, Neutral Weather.

Shot #	Location	Scenario	BNOISE2 Input	115 dB (feet)	130 dB (feet)
1	10-ft from Bleachers	1-ft safety fuse (burn, ground)	n/a – not explosive	n/a	n/a
2	Firing Point #1	1-lb black powder, 1-lb smokeless powder (burn, ground)	n/a – not explosive	n/a	n/a
3	Firing Point #2	One #8 blasting cap Detonation, suspended	n/a – SARNAM 12-ga shotgun[1]	170	30
4	Firing Point #3	1/3-lb Pentolite Detonation, suspended	0.35-lb Pentolite	3,810	1,310

5	Firing Point #4	1-lb Tannerite Detonation, suspended	0.55-lb TNT[2]	3,970	1,350
6	Firing Point #5	0.5-lb RDX Detonation, suspended	0.55-lb RDX-Cyclonite	4,590	1,480
7	Firing Point #6	0.5-lb nitromethane Detonation, suspended	0.55-lb nitromethane	3,940	1,350
8	Firing Point #7	Two sticks Dynamite AN Detonation, suspended	1.1-lb Dynamite (60% nitroglycerin)[3]	3,940	1,310
9	Firing Point #8	Two sticks Kinestik Detonation, suspended	0.88-lb TNT[4]	4,560	1,480
10	Firing Point #9	1.25-lbs C-4 Detonation, suspended	One stick of M112 C-4	5,710	1,770
11	Firing Point #10	1.5-lbs smokeless powder Detonation, suspended	1.1-lbs TNT[5]	4,920	1,540
n/a	Firing Range	SARNAM extrapolation of fifty .44 Magnum pistols fired simultaneously in the same location	n/a	2,360	430
n/a	Firing Range	SARNAM extrapolation of one hundred .44 Magnum pistols fired simultaneously in the same location	n/a	3,350	590

1. Blasting cap noise data could not be sourced directly, however several references indicate the noise is comparable to that of a shotgun. **2.** USAPHC indicated 1-lb of Tannerite has a relative equivalency (RE) of 0.55-lb TNT. **3.** 60% nitroglycerin was an assumed worst-case concentration. **4.** Kinestik = ANNM (Ammonium Nitrate + Nitromethane [60/40, typically]). Some mixtures of ANNM approach the efficiency of ANNMAl (Ammonium nitrate, nitromethane, and trace amounts of aluminum, carbon, and TETA (Triethylenetetramine)). ANNMAl has a TNT RE of 0.87. Since neither ANNM nor ANNMAl are in BNOISE2, 0.88-lb of TNT was utilized as a surrogate. **5**. Smokeless powder in this application has a TNT RE of approximately 0.6, which would mean 0.9-lb of TNT approximates 1.5-lbs of smokeless powder. While 0.88-lb is an option (see Shot #9 results) 1.1-lbs was used as a 'worst-case'.

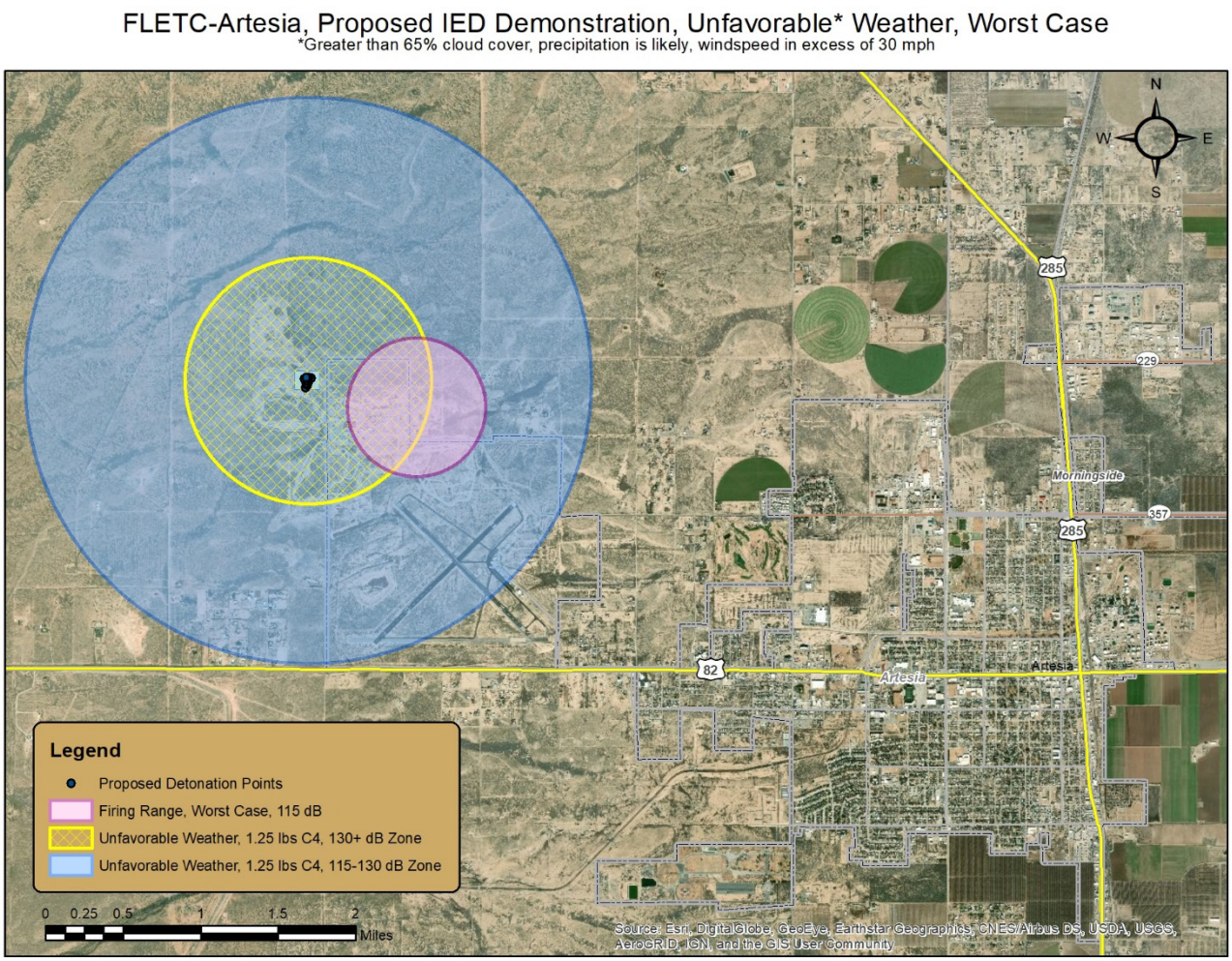

Figure 9: Proposed FLETC OAO IED Demo Training Peak Impact Noise Analysis: Unfavorable weather, worst case.

Table 4: Proposed FLETC OAO IED Demo Training Peak Impact Noise Analysis: 115dB and 130dB, PK 15, Unfavorable Weather (HazAir, Inc., 2020).

Shot #	Location	Scenario	BNOISE2 Input	115 dB (feet)	130 dB (feet)
1	10-ft from Bleachers	1-ft safety fuse (burn, ground)	n/a – not explosive	n/a	n/a
2	Firing Point #1	1-lb black powder, 1-lb smokeless powder (burn, ground)	n/a – not explosive	n/a	n/a
3	Firing Point #2	One #8 blasting cap Detonation, suspended	n/a – SARNAM 12-ga shotgun[1]	310	60
4	Firing Point #3	1/3-lb Pentolite Detonation, suspended	0.35-lb Pentolite	7,350	2,950
5	Firing Point #4	1-lb Tannerite Detonation, suspended	0.55-lb TNT[2]	7,510	3,050

6	Firing Point #5	0.5-lb RDX Detonation, suspended	0.55-lb RDX-Cyclonite	8,200	3,410
7	Firing Point #6	0.5-lb nitromethane Detonation, suspended	0.55-lb nitromethane	7,550	3,020
8	Firing Point #7	Two sticks Dynamite AN Detonation, suspended	1.1-lbs Dynamite (60% nitroglycerin)[3]	7,550	3,050
9	Firing Point #8	Two sticks Kinestik Detonation, suspended	0.88-lb TNT[4]	8,230	3,380
10	Firing Point #9	1.25-lbs C-4 Detonation, suspended	One stick of M112 C-4	9,650	4,200
11	Firing Point #10	1.5-lbs smokeless powder Detonation, suspended	1.1-lbs TNT[5]	8,600	3,610

1. Blasting cap noise data could not be sourced directly, however several references indicate the noise is comparable to that of a shotgun. **2.** USAPHC indicated 1-lb of Tannerite has a relative equivalency (RE) of 0.55-lb TNT **3.** 60% nitroglycerin was an assumed worst-case concentration. **4.** Kinestik = ANNM (Ammonium Nitrate + Nitromethane [60/40, typically]). Some mixtures of ANNM approach the efficiency of ANNMAl (Ammonium nitrate, nitromethane, and trace amounts of Aluminum, Carbon, and TETA (Triethylenetetramine)). ANNMAl has a TNT RE of 0.87. Since neither ANNM nor ANNMAl are in BNOISE2, 0.88-lb of TNT was utilized as a surrogate. **5**. Smokeless powder in this application has a TNT RE of approximately 0.6, which would mean 0.9-lb of TNT approximates 1.5-lbs of smokeless powder. While 0.88-lb is an option (see Shot #9 results) 1.1-lbs was used as a 'worst-case'.

3.3 Hazardous, Toxic, and Radioactive Waste Environment

3.3.1 Hazardous, Toxic, and Radioactive Waste

Existing Environment

A Phase I Environmental Site Assessment (ASTM E2247 – 16**)** documents the historic and current conditions as the typical environmental concerns on rural properties. The goal of the phase I established by this practice is to identify recognized environmental conditions. The term recognized environmental conditions means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. *De minimis* conditions are not recognized environmental conditions.

A complete Phase I was not performed in support of the project. However, a site visit was completed to obtain information indicating the likelihood of identifying recognized environmental conditions of the property, in accordance with ASTM E2247 – 16. A site visit was conducted with FLETC staff on June 25, 2019, at the proposed training facility. During the visit the property was evaluated in accordance with section 9.5.1 (ASTM E2247 – 16; Appendix A). Areas of environmental interest were assessed and found to be of *de minimis* sources of concern. Along with a brief of the training operations, documentation included a list of explosives that would be used during the training and how many individual detonations would occur during a training event (Table 1). Training events would have 11 detonations and FLETC plans on multiple training events a year depending on student training load.

Training Alternative

All explosives detonations except two (black powder burn) will be suspended two to three feet in the air for detonation. The detonation points will be on concrete pads that will minimize soil disruption and will be easier to maintain. No HTRW releases are expected from the Proposed Action, therefore no impacts are anticipated as long as compliance with FLETC standards and recommendations are in place.

Recommendations:

- Ensure new training process is included in the FLETC Supplement to the DHS Occupational Safety and Health Manual Chapter 23-Explosive Safety Program.
- Ensure processes for misfire or instances where explosives were not completely consumed is documented in a process document.
- Document baseline soil chemical composition during an initial monitoring event to assess prior to training, in coordination with NMED.
- Develop and incorporate a soil monitoring plan to document chemical releases into the environment.

No Action Alternative

The No Action Alternative would result in no HTRW impact to the environment.

3.4 Biological Resources

3.4.1 Vegetation

Existing Environment

FLETC OAO is located in the Southwest Semi-desert Grasslands floristic community. Desert grasses are the dominant flora in this region and include black grama (*Bouteloua eriopoda*), western wheatgrass (*Pascopyrum smithii*), New Mexico feathergrass (*Hesperostipa neomexicana*), and several species of three-awn (*Aristida spp.*). Sporadic, interspersed shrubs and cacti are also present in this region and include mesquite (*Prosopis glandulosa* and *Prosopis velutina*), broom snakeweed (*Gutierrzia sarothrae*), burroweed (*Isocoma tenuisecta*), cat claw acacia (*Mimosa dysocarpa*), creosote bush (*Larea tridentata*), prickly pear (*Opuntia spp.*), and hedgehog cactus (*Echinocereus spp.*) (NPS 2010).

During the site visit conducted with FLETC staff on June 25, 2019, the Proposed Action site was found to be heavily disturbed and comprised mainly of bare ground and gravel. Vegetation observed during the site visit was limited to small, isolated patches of perennial desert grasses, shrubs, and cacti found to be somewhat characteristic of the biotic community discussed above (Figures 10-12).

Figure 10: Proposed action area looking west towards DTF and bleacher/observation area.

Figure 11: Proposed action area looking east from DTF and proposed observation area.

Figure 12: Proposed action area looking east from DTF and proposed observation area.

Training Alternative

The construction of detonation pads associated with the Proposed Action would remove approximately 0.2 acres of sparse, localized vegetation and, therefore, would have no impact on area vegetation communities.

No Action Alternative

The Not Action Alternative would result in no impact on area vegetation communities.

3.4.2 Invasive Plant Species and Noxious Weeds

Existing Environment

As per the NM Department of Agriculture's *New Mexico Noxious Weed List* (updated October 2016; Appendix B), there were no noxious weed species observed in the project area during the site visit conducted with FLETC staff on June 25, 2019.

Training Alternative

The Proposed Action Alternative would have no impact on area invasive plants and noxious weeds.

No Action Alternative

The No Action Alternative would result in no impact on area invasive plants and noxious weeds.

3.4.3 Wildlife

Existing Environment

Due to the location of FLETC OAO within an urban to semi-rural area, its heavily-disturbed nature and lack of suitable habitat and natural food sources, and the fact that the entire area has been fenced, the Proposed Action site does not readily support continuous habitation or migration by large wildlife species. This was confirmed during a site visit to the Proposed Action site conducted with FLETC staff on June 25, 2019.

A low to moderate prey density for raptors occurs within or near the proposed training area. Mammals that may occur within FLETC OAO West Campus include the desert cottontail rabbit (*Sylvilagus nuttalii*), ground squirrels, and black-tailed jackrabbit (*Lepus californicus*). Birds that may periodically occur at the site are limited to the red-tailed hawk (*Buteo jamaicensis*), ferruginus hawk (*Buteo regalis*), American robin (*Turdus migratorius*), mockingbird (*Mimus polyglottos*), and house sparrow (*Passer domesticus*) (USACE 1998).

Training Alternative

Due to the lack of suitable habitat for wildlife species within the Proposed Action site, the Proposed Action is anticipated to have no long-term impacts to wildlife resources. Negligible short-term impacts to wildlife are anticipated and would be limited to temporary displacement of nearby species during the construction process and during training (up to 15 days per year) due to increased noise and human presence.

No Action Alternative

The No Action Alternative would result in no impact to wildlife.

3.4.4 Special Status Species

Existing Environment

Under Section 7 of the Endangered Species Act of 1973 (ESA), as amended, Federal project proponents are required to consult with the USFWS if one or more listed species may be affected by an action. In accordance, informal consultation for the proposed FLETC OAO project was initiated with the USFWS on August 14, 2019, and updated on April 7, 2020; *Consultation Code 02ENNM00-2019-SLI-1252* (Appendix B).

Based on a review of the 13 Federally- and State-listed special status species with the potential to occur in the area, the USFWS iPaC on-line assessment tool determined "**There are no critical habitats within your project area under this offices jurisdiction. There are no migratory birds of concern within the vicinity of your project area** (Table 5, USFWS iPaC 2020, Appendix B)." Additionally, no Federally-listed Threatened, Endangered, or Proposed species were observed during the Proposed Action site visit conducted with FLETC staff on June 25, 2019.

Training Alternative

A "No Effect" determination would be appropriate for the proposed project regarding its potential impacts to species listed under the ESA. Although these species (Table 5) are known to exist in Eddy County, NM, they are not likely to occur within the Proposed Action area as there is no suitable habitat, nor was presence of any of these species observed during the site visit. Therefore, the Proposed Action would have no impact on area special status species.

No Action Alternative

The No-Action Alternative would result in no impact to area special status species.

Table 5: Special Status Species Listed for Eddy County, NM, that have the Potential to Occur in the Vicinity of the Proposed Project Area (USFWS iPaC 2020, NMGF BISON-M 2019, NMRPTC 2019).

Scientific Name	Common Name	Federal Status	State Status	Potential to Occur
Birds				
Empidonax traillii extimus	Southwestern Willow Flycatcher	E	E	0
Falco femoralis septentrionalis	Northern Aplomado Falcon	EXPN	E	0
Sterna antillarum	Least Tern	E	E	0
Strix occidentalis lucida	Mexican Spotted Owl	T	--	0
Charadrius melodus	Piping Plover	T	T	0
Plants				
Eriogonum gypsophilum	Gypsum Wild-buckwheat	T	E	0
Coryphantha sneedii var. leei	Lee Pincushion Cactus	T	--	0
Coryphantha sneedii var. sneedii	Sneed Pincushion Cactus	E	--	0
Echinocereus fendleri var. kuenzleri	Kuenzler Hedgehog Cactus	T	E	0
Cirsium wrightii	Wright's Marsh Thistle	C	E	0
Fishes				
Notropis simus pecosensis	Pecos Bluntnose Shiner	T	E	0
Gambusia nobilis	Pecos Gambusia	E	E	0
Clams				
Popenaias popeii	Texas Hornshell	E	E	0

Status Key (as prepared by the Service)**:** E= Endangered, T= Threatened, C= Candidate, SC= Species of Concern, P= Proposed for listing, EXPN= Non-Essential Experimental Population. Only Endangered and Threatened species are protected by the ESA.

3.5 Cultural Resources

Implementation of proposed Federal actions must comply with the National Historic Preservation Act (NHPA) of 1966 (16 U.S.C § 470 et seq., as amended). Under the NHPA, consideration of historic preservation issues is to be integrated into the early stages of project planning by federal agencies. Under Section of 106 of the NHPA, a federal agency is required to account for the effects of proposed actions on any district, site, building, structure, or object that is included or eligible for inclusion in the National Register of Historic Places (NRHP), prior to the expenditure of funds on the action. Section 110 of the NHPA requires the identification and evaluation of any historic properties on federal property that meet the eligibility criteria of the NRHP. The New Mexico Historic Preservation Division (NMHPD) serves as the

New Mexico State Historic Preservation Office (SHPO). Federal agencies are responsible for assessing whether proposed projects will impact historic or archaeological resources. Federal agencies consult with the SHPO on their NRHP eligibility and effect determinations and seek concurrence or resolution of adverse effects.

3.5.1 Summary of Cultural Resources Inventory

Existing Environment

A search of the NRHP and the New Mexico State Register of Cultural Properties databases conducted in August of 2019 indicated there are no known or listed historic structures within the Proposed Action area or vicinity. Based on the prior earth disturbances within the Proposed Action area, and the lack of NRHP and State registered cultural properties, it was concluded that it is unlikely that the Proposed Action would impact archaeological or historical resources. This determination was submitted to the NMHPD for their review and concurrence on January 28, 2020. On February 7, 2020, the NMHPD concurred that there are no historic properties in the project area, and the project would have no effect on historic properties (Appendix C).

Training Alternative

Based on correspondence with the NMDHP, no historic properties are present within the area of potential effect. Therefore, the Proposed Action would have no effect on historic properties.

No Action Alternative

Implementation of this project would have no effect on historic properties.

3.6 Land Use, Socioeconomics, Environmental Justice, and Human Health and Safety

3.6.1 Land Use

Existing Environment

The proposed IED Demo training action area is situated within the existing West Campus DTF as part of the 3,620-acre FLETC OAO installation, which includes a full range of facilities for conducting basic and advanced law enforcement training.

Training Alternative

As the Proposed Action would take place entirely within the FLETC OAO West Campus DTF adjacent to the existing firing range, there would be no impact to existing land use.

No Action Alternative

The No Action Alternative would result in no impact to existing land use.

3.6.2 Socioeconomics

Existing Environment

The Proposed Action area is located in Artesia, Eddy County, NM. Eddy County includes Carlsbad Caverns National Park, the Waste Isolation Pilot Plant, and New Mexico State University-Carlsbad (119 degrees awarded in 2016). In 2017, Eddy County had a population of 56,793 people with a median age of 35.9 and a median household income of $60,703. Between 2016 and 2017, the County population grew from 56,369

to 56,793 (0.752% increase), and its median household income grew from $59,625 to $60,703 (1.81% increase) (Data USA 2017).

In 2017, Artesia had a population of 11,301 people with a median age of 34.6 and a median household income of $49,132, which is less than the median annual income of $60,336 across the entire U.S. Between 2016 and 2017, the population of Artesia grew from 11,817 to 11,842 (0.212% increase), and its median household income declined from $49,516 to $49,132 (-0.776% decrease). In 2017, the median age of all people in Artesia was 34.6 up from 33 in 2016 showing an aging population trend (Data USA 2017).

The median property value in Artesia is $151,300, and the homeownership rate is 65.1 percent. The economy of Artesia employs nearly 5,000 people, the largest industries being Mining, Quarrying, and Oil & Gas Extraction (890 people), Retail Trade (525 people), and Public Administration (432 people), and the highest paying industries are Professional, Scientific, & Technical Services ($72,955), Educational Services ($65,665), and Mining, Quarrying, and Oil & Gas Extraction ($64,118) (Data USA 2017).

Currently, FLETC OAO and the City of Artesia have significant economic interaction. Individuals in the Artesia area are hired to complete grounds-keeping and general maintenance tasks necessary within the FLETC OAO compound. Additionally, personnel using and residing in the FLETC OAO compound beneficially impact the City of Artesia's retail trade industry through daily monetary transactions within the community.

Training Alternative

While FLETC OAO is tied strongly to the City of Artesia, the Proposed Action would have no impact on area socioeconomics as the proposed IED demo training would only be the field exercise of an existing classroom-based curriculum, not an additional course. The IED Demo training would, however, continue to improve the ability of associated law enforcement trainees to serve their respective communities.

No Action Alternative

The No Action Alternative would result in no impact to the socioeconomic environment.

3.6.3 Environmental Justice

Existing Environment

Consideration of environmental justice concerns includes compilation of race and ethnicity data and the poverty status of populations. Minority populations, as defined by the U.S. Census Bureau (USCB 2018), are significant in both areas: Eddy County is comprised of 48.5 percent White, 47.5 percent Hispanic or Latino, and 1.41 percent Black or African American residents, and 95.8 percent are U.S. citizens. The population of Artesia is 48 percent Hispanic or Latino, 47.1 percent White, and 2.3 percent American Indian & Alaska Native, and 97.3 percent are U.S. citizens. NM is 48 percent Hispanic and 10.5 percent Native American, which is higher than the U.S. as a whole (USCB 2018).

The median household income in Eddy County grew from $59,625 to $60,703 (1.81% increase); while the median household income in Artesia was $49,132, which is less than the median annual income of $60,336 across the entire U.S. Of the Eddy County residents who were born U.S. citizens, 14.9 percent had income levels below the poverty line within the past year, while 20.5 percent of residents of Artesia had income levels below the poverty line within the past year (https://www.welfareinfo.org/poverty-rate/new-mexico/eddy-county); both were higher than the U.S., as a whole (13.5%), though just lower than NM, as a whole (20.4%) (https://www.welfareinfo.org/poverty-rate/new-mexico/artesia) (USCB 2018).

Training Alternative

As discussed above, environmental justice populations are present within the Proposed Action area, but would not be affected. Since the Proposed Action would occur entirely within the existing FLETC OAO facility and there would be no significant effects to the socioeconomic environment (Section 3.5.1), there would be no disproportionately high or adverse human health and environmental impacts on minority and low-income population, and would have no impact on environmental justice as defined by EO 12898.

No Action Alternative

The No Action Alternative would have no impact on minority and low-income populations, or environmental justice.

3.6.4 Human Health and Safety

Existing Environment

Specialized health services in the City of Artesia are provided by Artesia General Hospital, with 49 beds, and the San Pedro Nursing and Rehabilitation Center, with 65 beds. Artesia General Hospital is staffed by 23 physicians and surgeons and 18 advanced practice clinicians. Fire and emergency services are handled by the Artesia Fire Department, which is comprised of two fire stations and staffed by 30 firefighters. The Artesia Police Department employs 28 officers, which include sworn officers, community service officers, and animal control officers. FLETC OAO West Campus instructors and trainees are generally proficient in law enforcement and first response techniques.

Training Alternative

The Proposed Action would result in an increased training capacity of law enforcement personnel, which would positively impact the knowledge, skills, and abilities of the various participating agencies. Therefore, the Proposed Action would result in a minor, beneficial impact to human health and safety, overall.

No Action Alternative

The No Action Alternative would result in no impact to human health and safety.

3.7 Cumulative Effects

NEPA defines cumulative effects as "…the impact on the environment which results from the incremental impact of the action when added to other, past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions."

Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taken place over a period of time (40 CFR § 1508.7). CEQ guidance in considering cumulative impacts requires defining the scope of the other past, present, and future actions and their relationships with the Proposed Action.

The Proposed Action encompasses less than one-percent (0.01%) of the total area within the FLETC OAO West Campus DTF, and is located on lands extensively modified by development activities, including a DTF and firearms complex. There would be no incrementally noticeable adverse environmental impacts to the City of Artesia or Eddy County area. Foreseeable future actions within, and in, the vicinity of the

Proposed Action site involve continued, infrequent use and maintenance to meet FLETC needs; the potential impacts of these future actions remain consistent with the impacts considered under this training proposal.

No significant or minor cumulative impacts to climate, topography, geology and soils, biological resources, cultural resources, air quality, noise, land use and zoning, visual resources, or hazardous materials and waste, water resources, or public health and safety (fire response) are expected.

The No Action Alternative would have no incrementally noticeable adverse environmental impacts to the City of Artesia or the Eddy County area.

4. CONCLUSIONS

Based on the foregoing analysis, the Proposed Action IED Demo training at FLETC OAO West Campus DTF would have none to negligible short-term and long-term impacts to applicable resource areas. Further, it would result in no significant direct, indirect, short-term, long-term or cumulative consequences to environmental resources. Therefore, the Proposed Action would not require the preparation of an Environmental Impact Statement (EIS) and would warrant a Finding of No Significant Impact (FONSI).

While the No Action Alternative would have no impacts on the above resource areas, it would not meet the Purpose and Need addressed by the Proposed Action Alternative. As a result, FLETC OAOs existing curriculum would not include live field IED Demo training, and, therefore, would not meet the specific FLETC multi-agency training program requirements, nor provide adequate training to support mission readiness.

Since training Federal law enforcement personnel is imperative to supporting National security, and the Proposed Action Alternative would have negligible consequences to environmental resources, the IED Demo training is found to be necessary and appropriate.

The Proposed Action Alternative evaluated in this Draft EA addresses the method and potential effects for the explosives demonstration training and improvements. The proposed training and improvements are located within previously disturbed areas and adjacent to the roadways within the FLETC OAO training grounds. Impacts to the environment would be non-significant and short-term. The proposed project would not result in any moderate or significant short-term, long-term, or cumulative adverse effects. Therefore, the proposed project would not significantly affect the quality of the human environment and is recommended for implementation.

5. PREPARATION, CONSULTATION and COORDINATION

5.1 Preparation

This Draft EA was prepared on behalf of FLETC by USACE. Primary preparation personnel include:

- Mathew Earthman Project Manager
- Summer Schulz Biology and NEPA
- Jessica Gisler Archaeology
- Ariane Pinson Climate
- Matthew Segura Hazardous, Toxic, and Radioactive Waste
- Mike Hernandez Ordinance and Explosive Safety

5.2 Quality Control

This Draft EA has been reviewed for quality control purposes. Reviewers include:

- George MacDonell Archaeologist; Chief, Environmental Resources
- Dana Price Biologist, Environmental Resources
- FLETC Headquarters Staff

5.3 Consultation and Coordination

Agencies and entities that were contacted formally or informally in preparation of this Draft EA include:

- NM State Historic Preservation Office, Santa Fe, NM
- U.S. Fish and Wildlife Service, New Mexico Ecological Services Field Office, Albuquerque, NM
- U.S. Army Corps of Engineers, Albuquerque, NM

5.4 Public Involvement under NEPA

Coordination with the public and interested parties has taken place throughout the development of the project. The public will be provided a 15-day review period of this Draft EA.

5.5 Coordination with Other Federal, State, Regional, and Local Agencies

5.5.1 Tribal Consultation

Consistent with the Department of Defense's American Indian and Alaska Native Policy, signed by Secretary of Defense, William S. Cohen, on October 28, 1998, and based on the State of New Mexico Indian Affairs Department and Historic Preservation Division's 2019 Native American Consultation List, American Indian Tribes that have indicated they have concerns in this portion of Eddy County have been contacted regarding the proposed project. On behalf of FLETC OAO, a consultation letter to SHPO on January 30, 2020, regarding the potential effects of the project on any associated historic or archaeological resources.

Section 106 of the NHPA also requires consultation with interested Native American tribes. According to the NMHPD, there are four tribes with lands and jurisdiction in Eddy County, NM: Comanche Tribe of Oklahoma, Kiowa Tribe, Mescalero Apache Tribe, and Ysleta del Sur Pueblo. Coordination letters were

submitted to each tribe on January 30, 2020, to determine if they have concerns about any traditional cultural properties, sacred sites, or properties of religious or cultural significance that may be affected by the project. Table 6 below includes the name of each tribe, date the coordination letter was sent, and any comments received from the tribes. Responses received from the tribes are included in Appendix C.

Table 6: Tribal Consultation Correspondence.

Tribe	Date Letter Sent	Response Received & Comments
Comanche Nation of Oklahoma	January 30, 2020	Response received April 29, 2020. The Comanche Nation of Oklahoma does not have any comments nor does it request consultation on this proposed project.
Kiowa Tribe	January 30, 2020	No response received to date.
Mescalero Apache Tribe	January 30, 2020	No response received to date.
Ysleta del Sur Pueblo	January 30, 2020	Response received February 4, 2020. The Ysleta del Sur Pueblo does not have any comments nor does it request consultation on this proposed project.

5.5.2 Endangered Species Act Coordination

In accordance with Section 7 of the ESA, informal consultation was initiated with the USFWS on August 14, 2019, updated on April 7, 2020, *Consultation Code 02ENNM00-2019-SLI-1252*, and is on-going per review of this Draft EA.

5.6 Public Locations for Draft EA to be Available

Per the NM EO 2020-004 and EO 2020-022 as relate to the Covied-19 public health emergency declaration, the Artesia Public Library and other public meeting locations are closed indefinitely. As such, this Draft EA will be available for public review on-line at:

https://www.fletc.gov/national-environmental-policy-act

https://www.spa.usace.army.mil/Missions/Environmental/Environmental-Compliance-Documents/Environmental-Assessments-FONSI/

Paper copies will also available for review at: FLETC OAO, 1300 W Richey Avenue, Artesia, NM.

5.7 Mailing List for Draft EA

Field Supervisor-
U.S. Fish and Wildlife Service
Ecological Services
2105 Osuna Road NE
Albuquerque, NM 87113

Mr. Matt Wunder
Conservation Services Division
New Mexico Dept. of Game and Fish
P.O. Box 25112, Santa Fe, NM 87504

Mr. Robert Houston
Office of Planning and Coordination
Region 6
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200, Dallas, TX 75202-2733

Mr. David Roybal
District 2
New Mexico Environmental Dept.
P.O. Box 5469, Santa Fe, NM 87502

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7. APPENDICIES

APPENDIX A – Hazardous, Toxic, and Radioactive Waste

Demonstration Explosives List

Table 1: IED Explosive Effects Demonstration Sequence Summary

Demo Number	Demo Location	Distance from Observ Point (ft)	Scenario	Detonation Type	Materials
1	Bleacher Area	10	Safety fuse burn	Fuse Burn on Ground	1 ft safety fuse, 1 pull-string igniter
2	Firing Point 1	80	Low explosive open burn on burn pan	Open Burn on Ground within Burn Pan	1lb black powder, 1 lb smokeless powder, 1 electric match, 1 oz smokeless powder bag
3	Firing Point 2	150	Blasting cap in paint can	Suspended Explosive Detonation	1 electric/shock tube blasting cap, paint can
4	Firing Point 3	150	Pentolite detonation	Suspended Explosive Detonation	One 1/3 lbs booster, 1 ft detonating cord, 1 electric/shocktube blasting cap
5	Firing Point 4	250	Tannerite detonation	Suspended Explosive Detonation	1 lb Tannerite target, 1-10 g, booster, 1 electric/shocktube blasting cap
6	Firing Point 5	250	RDX Sheet detonation	Suspended Explosive Detonation	8 oz RDX sheet, 1-10g booster, 1 electric/shocktube blasting cap
7	Firing Point 6	250	Sensitized toilet paper detonation	Suspended Explosive Detonation	1 roll toilet paper, 8 oz nitromethane, 1 electric/shocktube blasting cap
8	Firing Point 7	300	Emulsion dynamite detonation	Suspended Explosive Detonation	Two 1 1/4 x 8 cartridges, 1 electric/shocktube blasting cap
9	Firing Point 8	300	Binary detonation	Suspended Explosive Detonation	Two 1 1/4 x 8 binary 1 electric/shocktube blasting cap
10	Firing Point 9	300	C4 Detonation	Suspended Explosive Detonation	1 1/4 lbs C4, one 10 g booster, 1 electric/shocktube blasting cap
11	Firing Point 10	300	Low explosive confined detonation	Suspended Explosive Detonation	1 1/2 lbs smokeless powder, 1 electric/shocktube blasting cap

FLETC Explosive Safety Program Guidance

Proposed Explosive
Training Facility
Federal Law Enforcement
Training Centers (FLETC)
Artesia, NM
Site Visit June 25,2019
Trip Report

CESPA-EC-GE 19 Feb 2020

MEMORANDUM FOR RECORD

SUBJECT: Blast Effects and Explosive Risk Assessment of FLETC Explosive Blast Effects Training Area

1. PURPOSE: To provide Department of Homeland Security FLETC with an explosive blast effects assessment.

2. GENERAL: The following activities were conducted:
   a. Site visit was conducted in Artesia, NM at the proposed training area along with a brief of the training operations including the type of explosives used. Visit included list of explosives (attached) that will be used during the training and how many individual detonations that will occur during a training event. Training event will have 10 detonations and FLETC plans on multiple training events a year depending on student training load.
   b. All explosives detonations except one (black powder burn)will be suspended 2-3 feet in the air for detonation. The detonation points will be on concrete pads that will minimize soil disruption and will be easier to maintain.

3. RECOMMENDATIONS:
   a. Ensure new training process is included in the "FLETC SUPPLEMENT to the DHS Occupational Safety and Health Manual Chapter23 EXPLOSIVE SAFETY PROGRAM"
   b. Ensure process for misfire or instances where explosives were not completely consumed is documented in process document

4. Point of contact for this subject is the undersigned, (505) 342-3471.

Michael Hernandez
GS-12, USACE
Ordnance & Explosive Safety Specialist

2 Attachments
1. Proposed explosive training Site Map
2. Proposed Explosive Items and Firing Points

Proposed Explosive Training Site Map

Proposed Explosive Items and Firing Points

IED Explosive Effects Demonstration Sequence, Scenario and Location Coordinates								
Shot Number	Demonstration Location	Distance	Scenario	Materials	Location Coordinates			Azimuth Tower to Target
					MGRS	Lat	Long	
1	Bleacher Area	10'	Safety fuse burn, **GROUND**	1 foot safety fuse, 1 pull-string igniter	13S ES 4827836892	32.86909	-104.48396	10
2	Firing Point 1	80'	**Burn Pad:** Low explosive open burn, **GROUND**	1 pound black powder, 1 pound smokeless powder, 1 electric match, 1 ounce smokeless powder bag	13S ES 4829736917	32.86931	-104.48375	25
3	Firing Point 2	150'	Blasting cap in paint can, **SUSPENDED**	1 electric/shock tube blasting cap, paint can	13S ES 4830236937	32.86949	-104.4837	25
4	Firing Point 3	150'	Pentolite detonation, **SUSPENDED**	One 1/3 pounds booster, 1 ft detonating cord, 1 electric/shocktube blasting cap	13S ES 4828436937	32.86949	-104.48389	0
5	Firing Point 4	250'	Tannerite detonation, **SUSPENDED**	1 pound Tannerite target, 1-10 gram, booster, 1 electric/shocktube blasting cap	13S ES 4829336966	32.86975	-104.48379	350
6	Firing Point 5	250'	RDX Sheet detonation, **SUSPENDED**	8 ounces RDX sheet, 1-10gram booster, 1 electric/shocktube blasting cap	13S ES 4828036967	32.86976	-104.48393	0
7	Firing Point 6	250'	Sensitized toilet paper detonation, **SUSPENDED**	1 roll toilet paper, 8 ounces nitromethane, 1 electric/shocktube blasting cap	13S ES 4826536981	32.86989,	-104.48409	10
8	Firing Point 7	300'	Emulsion dynamite detonation, **SUSPENDED**	Two 1 1/4 X 8 cartridges, 1 electric/shocktube blasting cap	13S ES 4833636989	32.86996	-104.48333	25
9	Firing Point 8	300'	Binary detonation, **SUSPENDED**	Two 1 1/4 x 8 binary 1 electric/shocktube blasting cap	13S ES 4831136995	32.87001	-104.4836	15
10	Firing Point 9	300'	C4 Detonation, **SUSPENDED**	1 1/4 pounds C4, one 10 gram booster, 1 electric/shocktube blasting cap	13S ES 4830336991	32.86998	-104.48368	5
11	Firing Point 10	300'	Low explosive confined detonation, **SUSPENDED**	1 1/2 pounds smokeless powder, 1 electric/shocktube blasting cap	13S ES 4828236994	32.87001	-104.48391	355

APPENDIX B – Environmental Resources

NM STATE UNIVERSITY

New Mexico Department of Agriculture
Office of the Director/Secretary
MSC 3189
New Mexico State University
P.O. Box 30005
Las Cruces, NM 88003-8005
575-646-3007

October 19, 2016

MEMORANDUM

TO: General Public

FROM: Director/Secretary Jeff Witte

SUBJECT: New Mexico Noxious Weed List Update

The Director of the New Mexico Department of Agriculture has selected the following plant species *(see attached New Mexico Noxious Weed List)* to be targeted as noxious weeds for control or eradication pursuant to the Noxious Weed Management Act of 1998.

Petitions to add new plant species to the state noxious weed list were solicited and received by the New Mexico Department of Agriculture (NMDA) from Cooperative Weed Management Areas, individuals, agencies, and organizations. The petitions were reviewed by the New Mexico Weed List Advisory Committee using ecological, distribution, impact, and legal status criteria within the State of New Mexico and adjoining states and countries. Based on their extensive knowledge and experience, experts from the New Mexico State University Plant Sciences Department added several species as well.

This list does not include every plant species with the potential to negatively impact the state's environment or economy. Landowners and land managers are encouraged to recognize plant species listed on the federal noxious weed list and other western states' noxious weed lists as potentially having negative impacts and to manage them accordingly.

New Mexico Noxious Weed List

Updated September 2016

Class A Species

Class A species are currently not present in New Mexico, or have limited distribution. Preventing new infestations of these species and eradicating existing infestations is the highest priority.

Common Name	Scientific Name
Alfombrilla	*Drymaria arenariodes*
Black henbane	*Hyoscyamus niger*
Brazillian egeria	*Egeria densa*
Camelthorn	*Alhagi psuedalhagi*
Canada thistle	*Cirsium arvense*
Dalmation toadflax	*Linaria dalmatica*
Diffuse knapweed	*Centaurea diffusa*
Dyer's woad	*Isatis tinctoria*
Giant salvinia	*Salvinia molesta*
Hoary cress	*Cardaria spp.*
Leafy spurge	*Euphorbia esula*
Oxeye daisy	*Leucanthemum vulgare*
Purple loosestrife	*Lythrum salicaria*
Purple starthistle	*Centaurea calcitrapa*
Ravenna grass	*Saccharum ravennae*
Scentless chamomile	*Matricaria perforata*
Scotch thistle	*Onopordum acanthium*
Spotted knapweed	*Centaurea biebersteinii*
Yellow starthistle	*Centaurea solstitialis*
Yellow toadflax	*Linaria vulgaris*

Class B Species

Class B Species are limited to portions of the state. In areas with severe infestations, management should be designed to contain the infestation and stop any further spread.

Common Name	Scientific Name
African rue	*Peganum harmala*
Bull thistle	*Cirsium vulgare*
Chicory	*Cichorium intybus*
Halogeton	*Halogeton glomeratus*
Malta starthistle	*Centaurea melitensis*
Perennial pepperweed	*Lepidium latifolium*
Poison hemlock	*Conium maculatum*

Quackgrass	*Elytrigia repens*
Russian knapweed	*Acroptilon repens*
Spiny cocklebur	*Xanthium spinosum*
Teasel	*Dipsacus fullonum*

Class C Species

Class C species are wide-spread in the state. Management decisions for these species should be determined at the local level, based on feasibility of control and level of infestation.

Common Name	Scientific Name
Cheatgrass	*Bromus tectorum*
Curlyleaf pondweed	*Potamogeton crispus*
Eurasian watermilfoil	*Myriophyllum spicatum*
Giant cane	*Arundo donax*
Hydrilla	*Hydrilla verticllata*
Jointed goatgrass	*Aegilops cylindrica*
Musk thistle	*Carduus nutans*
Parrotfeather	*Myriophyllum aquaticum*
Russian olive	*Elaeagnus angustifolia*
Saltcedar	*Tamarix spp.*
Siberian elm	*Ulmus pumila*
Tree of heaven	Ailanthus altissima

Watch List Species

Watch List species are species of concern in the state. These species have the potential to become problematic. More data is needed to determine if these species should be listed. When these species are encountered please document their location and contact appropriate authorities.

Common Name	Scientific Name
Crimson fountaingrass	*Pennisetum setaceum*
Meadow knapweed	*Centaurea pratensis*
Myrtle spurge	*Euphorbia myrsinites*
Pampas grass	*Cortaderia sellonana*
Sahara mustard	*Brassica tournefortii*
Syrian beancaper	*Zygophyllum fabago L.*
Wall rocket	*Diplotaxis tenuifolia*

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna Road Ne
Albuquerque, NM 87113-1001
Phone: (505) 346-2525 Fax: (505) 346-2542
http://www.fws.gov/southwest/es/NewMexico/
http://www.fws.gov/southwest/es/ES_Lists_Main2.html

In Reply Refer To: April 07, 2020
Consultation Code: 02ENNM00-2019-SLI-1252
Event Code: 02ENNM00-2020-E-01783
Project Name: FLETC IED Demo Training

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

Thank you for your recent request for information on federally listed species and important wildlife habitats that may occur in your project area. The U.S. Fish and Wildlife Service (Service) has responsibility for certain species of New Mexico wildlife under the Endangered Species Act (ESA) of 1973 as amended (16 USC 1531 et seq.), the Migratory Bird Treaty Act (MBTA) as amended (16 USC 701-715), and the Bald and Golden Eagle Protection Act (BGEPA) as amended (16 USC 668-668c). We are providing the following guidance to assist you in determining which federally imperiled species may or may not occur within your project area and to recommend some conservation measures that can be included in your project design.

FEDERALLY-LISTED SPECIES AND DESIGNATED CRITICAL HABITAT

Attached is a list of endangered, threatened, and proposed species that may occur in your project area. Your project area may not necessarily include all or any of these species. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service, to make "no effect" determinations. If you determine that your proposed action will have "no effect" on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally-listed threatened or endangered fish or wildlife species without the appropriate permit.

If you determine that your proposed action may affect federally-listed species, consultation with the Service will be necessary. Through the consultation process, we will analyze information contained in a biological assessment that you provide. If your proposed action is associated with Federal funding or permitting, consultation will occur with the Federal agency under section 7(a)(2) of the ESA. Otherwise, an incidental take permit pursuant to section 10(a)(1)(B) of the ESA (also known as a habitat conservation plan) is necessary to harm or harass federally listed threatened or endangered fish or wildlife species. In either case, there is no mechanism for authorizing incidental take "after-the-fact." For more information regarding formal consultation and HCPs, please see the Service's Consultation Handbook and Habitat Conservation Plans at www.fws.gov/endangered/esa-library/index.html#consultations.

The scope of federally listed species compliance not only includes direct effects, but also any interrelated or interdependent project activities (e.g., equipment staging areas, offsite borrow material areas, or utility relocations) and any indirect or cumulative effects that may occur in the action area. The action area includes all areas to be affected, not merely the immediate area involved in the action. Large projects may have effects outside the immediate area to species not listed here that should be addressed. If your action area has suitable habitat for any of the attached species, we recommend that species-specific surveys be conducted during the flowering season for plants and at the appropriate time for wildlife to evaluate any possible project-related impacts.

Candidate Species and Other Sensitive Species

A list of candidate and other sensitive species in your area is also attached. Candidate species and other sensitive species are species that have no legal protection under the ESA, although we recommend that candidate and other sensitive species be included in your surveys and considered for planning purposes. The Service monitors the status of these species. If significant declines occur, these species could potentially be listed. Therefore, actions that may contribute to their decline should be avoided.

Lists of sensitive species including State-listed endangered and threatened species are compiled by New Mexico state agencies. These lists, along with species information, can be found at the following websites:

Biota Information System of New Mexico (BISON-M): www.bison-m.org

New Mexico State Forestry. The New Mexico Endangered Plant Program: www.emnrd.state.nm.us/SFD/ForestMgt/Endangered.html

New Mexico Rare Plant Technical Council, New Mexico Rare Plants: nmrareplants.unm.edu

Natural Heritage New Mexico, online species database: nhnm.unm.edu

WETLANDS AND FLOODPLAINS

Under Executive Orders 11988 and 11990, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. These habitats should be conserved through avoidance, or mitigated to ensure that there would be no net loss of wetlands function and value.

We encourage you to use the National Wetland Inventory (NWI) maps in conjunction with ground-truthing to identify wetlands occurring in your project area. The Service's NWI program website, www.fws.gov/wetlands/Data/Mapper.html integrates digital map data with other resource information. We also recommend you contact the U.S. Army Corps of Engineers for permitting requirements under section 404 of the Clean Water Act if your proposed action could impact floodplains or wetlands.

MIGRATORY BIRDS

The MBTA prohibits the taking of migratory birds, nests, and eggs, except as permitted by the Service's Migratory Bird Office. To minimize the likelihood of adverse impacts to migratory birds, we recommend construction activities occur outside the general bird nesting season from March through August, or that areas proposed for construction during the nesting season be surveyed, and when occupied, avoided until the young have fledged.

We recommend review of Birds of Conservation Concern at website www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BCC.html to fully evaluate the effects to the birds at your site. This list identifies birds that are potentially threatened by disturbance and construction.

BALD AND GOLDEN EAGLES

The bald eagle (*Haliaeetus leucocephalus*) was delisted under the ESA on August 9, 2007. Both the bald eagle and golden eagle (*Aquila chrysaetos*) are still protected under the MBTA and BGEPA. The BGEPA affords both eagles protection in addition to that provided by the MBTA, in particular, by making it unlawful to "disturb" eagles. Under the BGEPA, the Service may issue limited permits to incidentally "take" eagles (e.g., injury, interfering with normal breeding, feeding, or sheltering behavior nest abandonment). For information on bald and golden eagle management guidelines, we recommend you review information provided at www.fws.gov/midwest/eagle/guidelines/bgepa.html.

On our web site www.fws.gov/southwest/es/NewMexico/SBC_intro.cfm, we have included conservation measures that can minimize impacts to federally listed and other sensitive species. These include measures for communication towers, power line safety for raptors, road and highway improvements, spring developments and livestock watering facilities, wastewater facilities, and trenching operations.

We also suggest you contact the New Mexico Department of Game and Fish, and the New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division for information regarding State fish, wildlife, and plants.

Thank you for your concern for endangered and threatened species and New Mexico's wildlife habitats. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area. For further consultation on your proposed activity, please call 505-346-2525 or email nmesfo@fws.gov and reference your Service Consultation Tracking Number.

Attachment(s):

- Official Species List
- Migratory Birds

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New Mexico Ecological Services Field Office
2105 Osuna Road Ne
Albuquerque, NM 87113-1001
(505) 346-2525

Project Summary

Consultation Code: 02ENNM00-2019-SLI-1252

Event Code: 02ENNM00-2020-E-01783

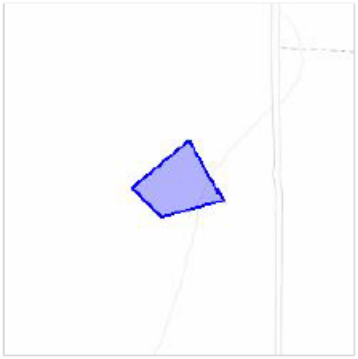
Project Name: FLETC IED Demo Training

Project Type: MILITARY OPERATIONS / MANEUVERS

Project Description: Federal IED demonstration training at heavily pre-disturbed area within the FLETC OAO, West Campus Driver Training Facility. 15 class session per year, demos lasting 1 day per session.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/32.869646088562334N104.48352773373502W



Counties: Eddy, NM

Endangered Species Act Species

There is a total of 13 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Least Tern *Sterna antillarum* Population: interior pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8505	Endangered
Mexican Spotted Owl *Strix occidentalis lucida* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8196	Threatened
Northern Aplomado Falcon *Falco femoralis septentrionalis* Population: U.S.A (AZ, NM) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1923	Experimental Population, Non-Essential
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered

Fishes

NAME	STATUS
Pecos Bluntnose Shiner *Notropis simus pecosensis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4362	Threatened
Pecos Gambusia *Gambusia nobilis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/460	Endangered

Clams

NAME	STATUS
Texas Hornshell *Popenaias popeii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/919	Endangered

Flowering Plants

NAME	STATUS
Gypsum Wild-buckwheat *Eriogonum gypsophilum* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7770	Threatened
Kuenzler Hedgehog Cactus *Echinocereus fendleri var. kuenzleri* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2859	Threatened
Lee Pincushion Cactus *Coryphantha sneedii var. leei* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2504	Threatened
Sneed Pincushion Cactus *Coryphantha sneedii var. sneedii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4706	Endangered
Wright's Marsh Thistle *Cirsium wrightii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8963	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

THERE ARE NO FWS MIGRATORY BIRDS OF CONCERN WITHIN THE VICINITY OF YOUR PROJECT AREA.

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.
Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Back

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Report County TES Table for

Otero

NEW MEXICO WILDLIFE OF CONCERN

For complete up-dated information on federal-listed species, including plants, see the US Fish & Wildlife Service website at http://ecos.fws.gov/ipac/wizard/chooseLocation!prepare.action. For information on state-listed plants, contact the NM Energy, Minerals and Natural Resources Department, Division of Forestry, or go to http://nmrareplants.unm.edu/. If your project is on Bureau of Land Management, contact the local BLM Field Office for information on species of particular concern. If your project is on a National Forest, contact the Forest Supervisor's office for species information. E = Endangered; T = Threatened; s = sensitive; SOC = Species of Concern; C = Candidate; Exp = Experimental non-essential population; P = Proposed

Export to Excel

Common Name	Scientific Name	NMGF	US FWS	Critical Habitat
Spotted Bat	Euderma maculatum	T		
Penasco Least Chipmunk	Neotamias minimus atristriatus	E	C	
Meadow Jumping Mouse	Zapus luteus luteus	E	E	Y
Brown Pelican	Pelecanus occidentalis	E		
Common Black Hawk	Buteogallus anthracinus	T		
Bald Eagle	Haliaeetus leucocephalus	T		
Aplomado Falcon	Falco femoralis	E	E	
Peregrine Falcon	Falco peregrinus	T		
Arctic Peregrine Falcon	Falco peregrinus tundrius	T		
Least Tern	Sternula antillarum	E	E	
Neotropic Cormorant	Phalacrocorax brasilianus	T		
Common Ground-dove	Columbina passerina	E		
Mexican Spotted Owl	Strix occidentalis lucida		T	Y
Broad-billed Hummingbird	Cynanthus latirostris	T		
White-eared Hummingbird	Hylocharis leucotis	T		
Elegant Trogon	Trogon elegans	E		
Southwestern Willow Flycatcher	Empidonax traillii extimus	E	E	Y
Bell's Vireo	Vireo bellii	T		
Gray Vireo	Vireo vicinior	T		
Yellow-eyed Junco	Junco phaeonotus	T		
Baird's Sparrow	Ammodramus bairdii	T		
Varied Bunting	Passerina versicolor	T		
Gray-banded Kingsnake	Lampropeltis alterna	E		
Mottled Rock Rattlesnake	Crotalus lepidus lepidus	T		
Sacramento Mountain Salamander	Aneides hardii	T		
White Sands Pupfish	Cyprinodon tularosa	T		

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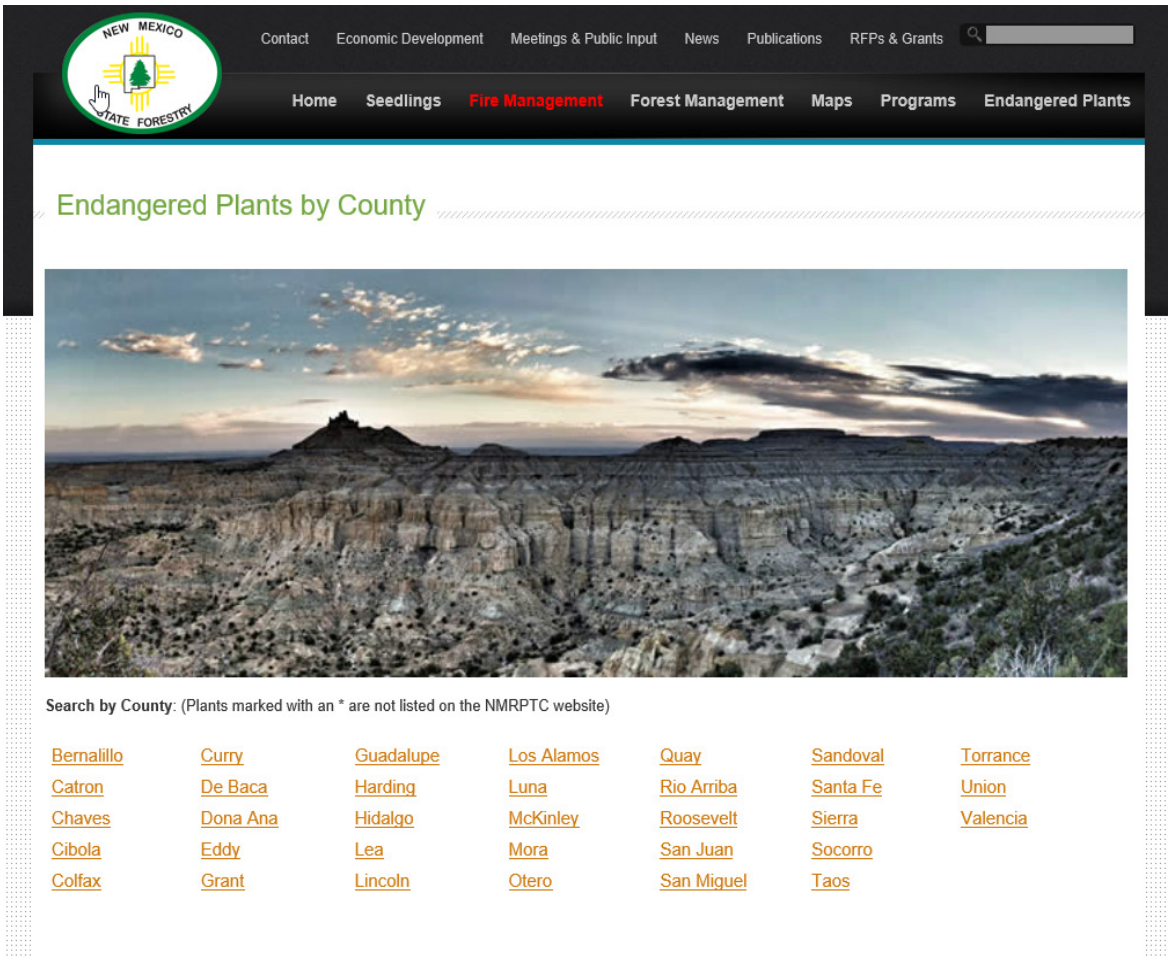


Eddy

1. *Amsonia tharpii*
2. *Cirsium wrightii*
3. *Coryphantha scheeri var. sheeri*
4. *Echinocereus fendleri var. kuenzleri*
5. *Eriogonum gypsophilum*
6. *Escobaria sneedii var. leei*
7. *Hexalectris nitida*

APPENDIX C – Cultural Resources

Existing Cultural Resource Surveys in the Project Area

NMCRIS No.	Year	Report Title	Acres	Results of Survey: Sites; Isolated Occurrences (IOs)
59746	1990	Cultural Resource Survey of 960 Acres as a Buffer Zone for the Federal Law Enforcement Training Center Firing Range, Artesia, Eddy County, New Mexico	960	No Sites or IOs located in the project area
86991	2004	A Class III Cultural Resource Inventory Report for the Thames 2-D Swath Lines T.16S, R.25E, Sections 1, 11, 12, 13, 14, 15, 21, 22, 23, 24, 29, 28, 27, 26, 31, 32, 22, 24, and 35; T.16S., R.26E Sections 6, 7, 19, and 30; T.17S., R. 24E Sections 1, 6, 5, 4, 3, 11, 12, 7, 8, 9, 15, 14, 13, 18, 17, 21, 22, 22, 23, 24, 28, 27, and 26 Eddy County, New Mexico	896	No Sites or IOs located in the project area

Figure 1. Vicinity Map. General Location of the Federal Law Enforcement Training Center, Office of Artesia Operations, Eddy County, New Mexico

Figure 2. FLETC IED Demo Training Course Project Area

Figure 2. FLETC IED Training Course Project Area

Miles
0 0.5 1

Kilometers
0 0.5 1

NAD 1983, UTM Zone 13N
1:24,000

Figure 3. FLETC IED Demo Training Course Firing Points

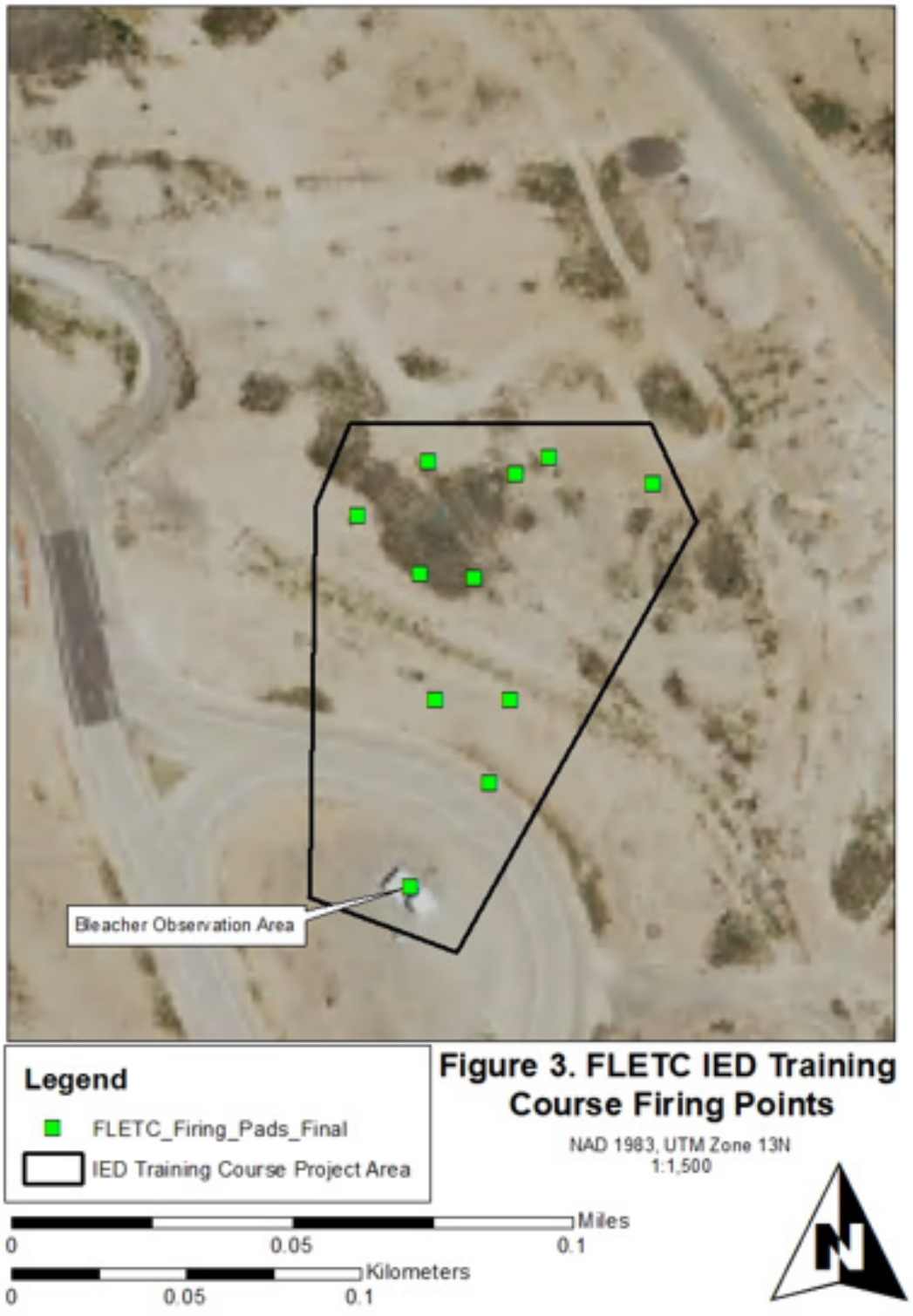


Figure 4. Previous Surveys in the Project Area

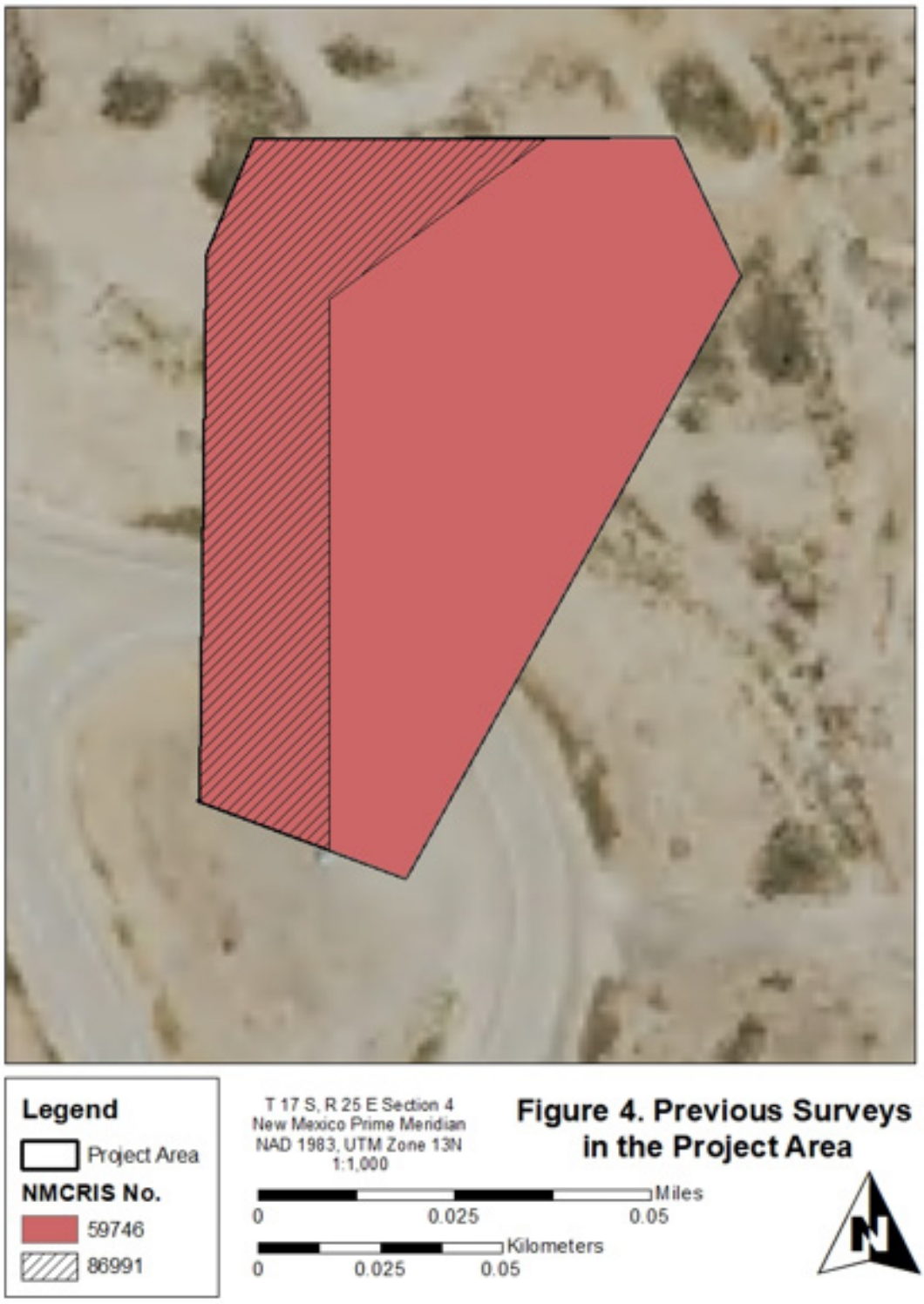
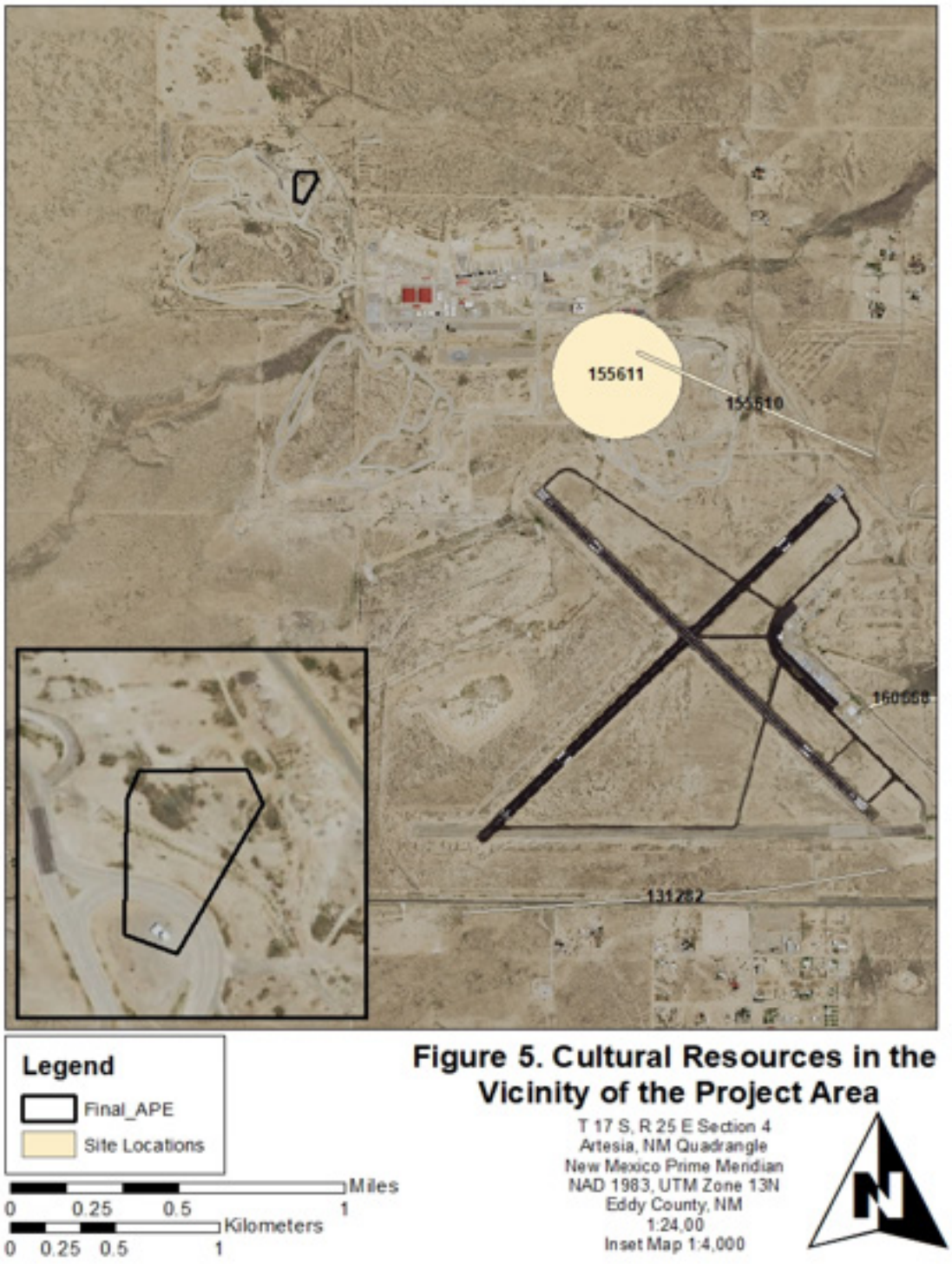


Figure 5. Cultural Resources in the Vicinity of the Project Area



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, ALBUQUERQUE DISTRICT
4101 JEFFERSON PLAZA NE
ALBUQUERQUE, NM 87109-3435

January 27, 2020

Planning, Project and Program Management Division
Planning Branch
Environmental Resources Section

Dr. Jeff Pappas
State Historic Preservation Officer
Historic Preservation Division
Bataan Memorial Building
407 Galisteo Street, Suite 236
Santa Fe, NM 87501

Dear Dr. Pappas:

Pursuant to 36 CFR 800, the U.S. Army Corps of Engineers (Corps), Albuquerque District, is seeking your concurrence in our determination of **no historic properties affected** for the proposed IED Demo training course at the Federal Law Enforcement Training Center, Office of Artesia Operations (FLETC OAO), located in Artesia, Eddy County, New Mexico (Figure 1). The Corps is conducting Section 106 consultation on behalf of the Department of Homeland Security (DHA), who is the lead agency for the proposed project. FLETC OAO is situated adjacent to the City of Artesia, NM, on 3,620 acres of the Orchard Park Terrace of the Pecos River. The proposed IED Demo training would be conducted at a designated site within the FLETC OAO West Campus Driver Training Facility (DTF) approximately four miles northwest of Artesia (Figure 2).

The IED Demo training would occur over 15 class sessions per year, within a designated area of the FLETC campus that has been previously heavily disturbed by agricultural and development activities including grading, plowing, terracing, and installation of concrete irrigation ditches. The project area will be kept clear of vegetation in order to reduce the fire risk. This will be accomplished using a backhoe to blade the project area. A bleacher observation area will be set up at an existing observation tower for class participant safety. The IED Demo training would involve detonation of up to 11 different IEDs of increasing strength, ranging from small "open-burn" detonations of a safety fuse up to five-pound charge explosive detonations. All but two of the detonations will be suspended charges, and all detonations will be cleaned up immediately after each training session.

The charges would be detonated over 10-foot by 10-foot concrete pads, to be installed within each of the 10 20-foot by 20-foot cleared areas, for containment of the associated residue. Smaller open-burn demonstrations would be conducted near the bleacher observation area, and larger IED demo detonations would be located at firing points with increasing distances from the observation area corresponding to their increased strength (Figure 3).

Pursuant to 36 CFR 800.4, the Area of Potential Effects (APE) includes an area of approximately 417-ft by 301-ft for a total of approximately 2 acres. The project is located in the E ½ of the NE ¼ of the NE ¼ of Section 4, Township 17 S, Range 24 E, of the New Mexico PM, as shown on the USGS 7.5- Minute quadrangle map: Artesia, NM (32104-G4; 1955. Photo-revised 1975). Existing roads within the FLETC West Campus will be used to access the project area.

Corps archaeologist Jessica Gisler conducted a review of the NMCRIS GIS database for the FLETC Project area on August 20, 2019. Two surveys have been conducted within the project area (Figure 4). NMCRIS Number 59746 was performed by the Chambers Group, Inc. in 1990. The survey covered 960 acres of private land that was considered a buffer zone for the FLETC firing range. This survey covered the entire project area and was performed to current survey standards. No cultural resources were found within the project area or the immediate vicinity. NMCRIS Number 86991 was performed by Southern New Mexico Archaeological Services, Inc. in 2004. The survey covered 896.6 acres for a 2-D Seismic Survey project. This survey was performed to current standards. No cultural resources were found within the project area or the immediate vicinity. No cultural resources have been located within the project area in either of the previous surveys (Figure 5).

Pursuant to 36 CFR 800.2, consulting parties in the Section 106 process identified for the proposed project includes the Corps and your office. Consistent with the Department of Defense's American Indian and Alaska Native Policy, signed by Secretary of Defense William S. Cohen on October 20, 1998, scoping letters were mailed to tribes having cultural resources concerns in Eddy County, including the Comanche Nation of Oklahoma, the Kiowa Tribe, the Mescalero Apache Tribe, and Ysleta del Sur Pueblo. No Traditional Cultural Properties and no Indian Trust Assets are known to occur within or adjacent to FLETC OAO.

Based upon the information above, the Corps is of the opinion that the proposed IED Demo training course would result in **no historic properties affected**. The Corps seeks your concurrence with our determination.

If you have questions or require additional information regarding the proposed IED Demo training course at FLETC, please contact Jessica Gisler, archaeologist, by e-mail at jessica.l.gisler@usace.army.mil, or myself at (505) 342-3281 or by email at george.h.macdonell@usace.army.mil.

Sincerely,

George H. MacDonell
Chief, Environmental Resources Section

Enclosures

Concur with recommendations as proposed.
2/7/2020
for NM State Historic Preservation Officer

Looks good. Albert Jessica.

Ysleta del Sur Pueblo
Tribal Council – Javier Loera (War Captain/Tribal Historic and Preservation Officer) E-mail jloera@ydsp-nsn.gov
117 South Old Pueblo Road * P.O. Box 17579 * El Paso, Texas 79917 * (915) 859-8053 * Cell (915) 497-3853

February 4, 2020

Mr. George H. MacDonell
Chief, Environmental Resources Section
Department of the Army
Corps of Engineers, Albuquerque District
4101 Jefferson Plaza NE
Albuquerque, NM 87109-3435

Dear Mr. MacDonell:

This letter is in response to the correspondence received in our office in which you provide the Ysleta del Sur Pueblo the opportunity to comment on the **U.S. Army Corps of Engineers (Corps), Albuquerque District's proposed project to create an IED Demo training course at the Federal Law Enforcement Training Center, Office of Artesia Operations (FLETC OAO), located in Artesia, Eddy County, New Mexico.**

The Ysleta del Sur Pueblo does not have any comments nor does it request consultation on this proposed project.

Thank you for allowing us the opportunity to comment on this proposed project.

Sincerely,

Javier Loera

Javier Loera
Tribal Council/Tribal Historic Office
for
Gov. E. Michael Silvas
Ysleta del Sur Pueblo

COMANCHE NATION

U.S. Army Corps of Engineers (CORPS), Albuquerque District
Attn: Ms. Jessica Gisler
4101 Jefferson Plaza NE
Texas 76102-0300

April 29, 2020

Re: U.S. Army Corps of Engineers, (Corps),Albuquerque District is pro posing a project to create an IED Demo training course at the Federal Law Enforcement Training Center

Dear Ms. Gisler:

In response to your request, the above reference project has been reviewed by staff of this office to identify areas that may potentially contain prehistoric or historic archeological materials. The location of your project has been cross referenced with the Comanche Nation site files, where an indication of ***"No Properties"*** have been identified. (IAW 36 CFR 800.4(d)(1)).

Please contact this office at (580) 595-9960/9618) if you require additional information on this project.

This review is performed in order to identify and preserve the Comanche Nation and State cultural heritage, in conjunction with the State Historic Preservation Office.

Regards

Comanche Nation Historic Preservation Office
Theodore E. Villicana , Technician
#6 SW "D" Avenue, Suite C
Lawton, OK. 73502

COMANCHE NATION P.O. BOX 908 / LAWTON, OK 73502
PHONE: 580-492-4988 TOLL FREE:1-877-492-4988

APPENDIX D – Noise Study Report

HazAir
EH&S Compliance and Emergency Management
701 N Green Valley Pkwy, Suite 200
Henderson, NV 89074
Phone: 702-941-1812 Fax: 888-411-9053

January 10, 2020

Federal Law Enforcement Training Center
Artesia, New Mexico
Contract No: W912PP-19-P-0039
HazAir Project No: 201077

Re: FLETC-Artesia IED Demonstration Noise Analysis

Mr. Earthman,

HazAir, Inc is pleased to provide this assessment of noise impacts for the Federal Law Enforcement Training Center (FLETC) in Artesia, NM. This report is being submitted as a deliverable to the U.S. Army Corps of Engineers IAW the Scope of Contract W912PP-19-P0039 as part of the FLETC-Artesia Environmental Assessment. For questions or comments about this report please feel free to reach out to me at (520) 664-5878 or via email at danny.taylor@hazair.com.

Danny S. Taylor, PMP
Project Manager
HazAir, Inc.

Shot Analysis

Final calculations were primarily made using BNOISE2 software, and calculations performed result in peak unweighted decibels. Distances calculated are those commonly used to determine likelihood of public complaints due to impulsive noise. The table below was provided by the U.S. Army Public Health Center (USAPHC) from the Army's *Complaint Risk Guidelines*. Keeping in mind that all values calculated are peak unweighted values, USAPHC also indicated that noise under 110 db would be virtually inaudible, and those between 115-130 db *may* be inaudible depending on ambient noise (e.g. cars, wind, wildlife).

Perceptibility*	dB Peak	Risk of Receiving Noise Complaints
May be Audible	< 115	Low
Noticeable, Distinct	115-130	Moderate
Very Loud, May Startle	> 130	High

*Perceptibility is subjective. These classifications are based on how a typical person might describe the event.

BNOISE software was utilized to estimate noise levels for most detonations but is limited to the materials contained within the software so surrogate materials were utilized when necessary. All calculations should be considered represent 'worst-case' scenarios with the following inputs:

- Terrain – Flat (worst-case assumption)
- Elevation – 1031 meters (Artesia, NM[1])
- Weather – BN3.2 Emulation
- Noise Metric – PK, 15 (peak level in unfavorable weather conditions)
- Noise Metric – PK, 50 (peak level in neutral weather conditions)

BNOISE2 utilizes set weights for explosives; when an exact weight was unavailable the next larger size was utilized (e.g. 1.1 pounds of Dynamite was assessed in place of one pound). All suspended detonations were set at 0.61 meters (two [2] feet) above ground level as indicated by the shots list provided by USACE[2]. Firing point coordinates were converted to UTM with Google Earth Pro for use within BNOISE2.

The receiver grid used is a 16x16 km square roughly centered on the training ground, biased slightly towards the neighboring town of Artesia. Grid mesh spacing for these runs was set at 20 x 20 meters as a balance between granularity and speed of the simulations. UTM zone correction was utilized after each simulation to ensure correct placement of each target, and NMPlot was set to show curves at 130 dB (red) and 115 dB (blue). Distance to each curve was measured within NMPlot from the point of detonation and converted from meters to feet. All final values are rounded.

BNOISE2 is not capable of running for 'small' explosives nor can it handle non-explosive sources of noise. For Shots #1 and #2, we would recommend simply labeling these as 'localized' or 'insignificant' as it is unlikely these sounds levels would be detectable outside a few hundred feet at most.

BNOISE2 is also not capable of calculating contours for a blasting cap (Shot #3) as the explosive weight is too small 0.0029 pounds vs. 0.0198 pound limit). No direct noise studies specific to blasting caps could be obtained from the US Army or US Air Force, however several references indicate a 12 gauge shotgun shell would be a conservative approximation since this configuration can also be used for detonating

[1] https://www.latlong.net/place/artesia-nm-usa-19177.html
[2] *2019-09 Firing Point Locations Coord Revised* (Microsoft Excel Spreadsheet)

explosives similar to those a blasting cap is used for. Using SARNAM, we settled on an unweighted impact noise of 114.4 dB (peak, one sigma) at 100 meters for the PK 15 approximation shown in Table 1. Similarly, an unweighted impact noise of 109.4 dB (peak, zero sigma) at 100 meters was used for the PK 50 approximation in Table 2. With this information, distances were extrapolated for specific noise levels of 130 dB and 115 dB using the below equation. The SARNAM output is shown in Figure 1.

Inverse square law: $\left\{L_{p2} = L_{p1} + 20log_{10}\left(\frac{r_1}{r_2}\right)\right\} \rightarrow \left\{r_2 = \frac{r_1}{10^{\left(\frac{L_{p2}-L_{p1}}{20}\right)}}\right\}$

OneShot Results

A-WEIGHTED EXPOSURE LEVEL, ASEL (dB)	C-WEIGHTED EXPOSURE LEVEL, CSEL (dB)	USER-WTD EXPOSURE LEVEL, USEL (dB)	UNWEIGHTED PEAK LEVEL, PK (dB)	PERCENT EXCEEDING (pct)	
86.2	91.0	92.1	124.4	0.13	(mu 3 sigma)
81.2	86.0	87.1	119.4	2.28	(mu 2 sigma)
76.2	81.0	82.1	114.4	15.87	(mu 1 sigma)
71.2	76.0	77.1	109.4	50.00	(mu 0 sigma)
66.2	71.0	72.1	104.4	84.13	(mu-1 sigma)
61.2	66.0	67.1	99.4	97.72	(mu-2 sigma)
75.2	80.0	81.1	113.4	<--SARNAM DOWN WIND	

1<--ACTIVITY TOTAL

1.00<--WTD EVENT TOTAL

Figure 1: SARNAM OneShot output for a single 12 gauge shotgun at 100 meters

Worst-case data from Tables 1 and 2 (C-4 detonation) are shown in Figures 3 and 4 at the end of this document, to demonstrate the extent of noise impacts. These graphic elements should be construed as estimates only and are highly dependent on the weather, as seen when comparing the figures. The blue area indicates potential impacts could range from 115-130dB, while yellow hatched area indicates potential impacts exceeding 130 dB. The purple region shows a conservative estimate for the current firing range for comparison, also ranging from 115-130 dB. Please note that weather effects for the firing range were not included in these calculations and what is shown should be a true 'worst case' scenario.

Table 1: IED Demo Peak Impact Noise Analysis for FLETC-Artesia (PK 15, Unfavorable Weather)

Shot #	Location	Scenario	BNOISE2 Input	115 dB (feet)	130 dB (feet)
1	10' From Bleachers	One (1) foot safety fuse (burn, ground)	n/a – not explosive	n/a	n/a
2	Firing Point #1	One (1) lb black powder, one (1) lb smokeless powder (burn, ground)	n/a – not explosive	n/a	n/a
3[1]	Firing Point #2	One (1) #8 blasting cap Detonation, suspended	n/a – SARNAM 12 ga. shotgun.[1]	310	60
4	Firing Point #3	1/3 lb Pentolite Detonation, suspended	0.35 pounds Pentolite	7,350	2,950
5[2]	Firing Point #4	One (1) lb Tannerite Detonation, suspended	0.55 pounds TNT[2]	7,510	3,050
6	Firing Point #5	0.5 lbs RDX Detonation, suspended	0.55 pounds RDX-Cyclonite	8,200	3,410
7	Firing Point #6	0.5 lbs nitromethane Detonation, suspended	0.55 pounds nitromethane	7,550	3,020
8[3]	Firing Point #7	Two (2) sticks Dynamite AN Detonation, suspended	1.1 pounds Dynamite (60% nitroglycerin)[3]	7,550	3,050
9[4]	Firing Point #8	Two (2) sticks Kinestik Detonation, suspended	0.88 pounds TNT[4]	8,230	3,380
10	Firing Point #9	1.25 lbs C-4 Detonation, suspended	One (1) stick M112 C-4	9,650	4,200
11[5]	Firing Point #10	1.5 lbs smokeless powder Detonation, suspended	1.1 pounds TNT[5]	8,600	3,610

1. Blasting cap noise data could not be sourced directly, however several references indicate the noise is comparable to that of a shotgun.
2. USAPHC indicated one pound of Tannerite has a relative equivalency (RE) of 0.55 pounds TNT
3. 60% nitroglycerin was an assumed worst-case concentration
4. Kinestik = ANNM (Ammonium Nitrate + Nitromethane [60/40, typically]). Some mixtures of ANNM approach the efficiency of ANNMAl (Ammonium nitrate, nitromethane, and trace amounts of Aluminum, Carbon, and TETA (Triethylenetetramine)). ANNMAl has a TNT RE of 0.87. Since neither ANNM nor ANNMAl are in BNOISE2, 0.88 pounds of TNT was utilized as a surrogate
5. Smokeless powder in this application has a TNT RE of approximately 0.6, which would mean 0.9 pounds of TNT approximates 1.5 pounds of smokeless powder. While 0.88 pounds is an option (results of which can be seen in Shot #9) 1.1 pounds was used as a 'worst-case'.

Table 2: IED Demo Peak Impact Noise Analysis for FLETC-Artesia (PK 50, Neutral Weather)

Shot #	Location	Scenario	BNOISE2 Input	115 dB (feet)	130 dB (feet)
1	10' From Bleachers	One (1) foot safety fuse (burn, ground)	n/a – not explosive	n/a	n/a
2	Firing Point #1	One (1) lb black powder, one (1) lb smokeless powder (burn, ground)	n/a – not explosive	n/a	n/a
3[1]	Firing Point #2	One (1) #8 blasting cap Detonation, suspended	n/a – SARNAM 12 ga. shotgun.[1]	170	30
4	Firing Point #3	1/3 lb Pentolite Detonation, suspended	0.35 pounds Pentolite	3,810	1,310
5[2]	Firing Point #4	One (1) lb Tannerite Detonation, suspended	0.55 pounds TNT[2]	3,970	1,350
6	Firing Point #5	0.5 lbs RDX Detonation, suspended	0.55 pounds RDX-Cyclonite	4,590	1,480
7	Firing Point #6	0.5 lbs nitromethane Detonation, suspended	0.55 pounds nitromethane	3,940	1,350
8[3]	Firing Point #7	Two (2) sticks Dynamite AN Detonation, suspended	1.1 pounds Dynamite (60% nitroglycerin)[3]	3,940	1,310
9[4]	Firing Point #8	Two (2) sticks Kinestik Detonation, suspended	0.88 pounds TNT[4]	4,560	1,480
10	Firing Point #9	1.25 lbs C-4 Detonation, suspended	One (1) stick M112 C-4	5,710	1,770
11[5]	Firing Point #10	1.5 lbs smokeless powder Detonation, suspended	1.1 pounds TNT[5]	4,920	1,540
n/a	Firing Range	SARNAM extrapolation of 50 .44 Magnum pistols fired simultaneously in the same location	n/a	2,360	430
n/a	Firing Range	SARNAM extrapolation of 100 .44 Magnum pistols fired simultaneously in the same location	n/a	3,350	590

1. Blasting cap noise data could not be sourced directly, however several references indicate the noise is comparable to that of a shotgun.
2. USAPHC indicated one pound of Tannerite has a relative equivalency (RE) of 0.55 pounds TNT
3. 60% nitroglycerin was an assumed worst-case concentration
4. Kinestik = ANNM (Ammonium Nitrate + Nitromethane [60/40, typically]). Some mixtures of ANNM approach the efficiency of ANNMAl (Ammonium nitrate, nitromethane, and trace amounts of aluminum, carbon, and TETA (Triethylenetetramine)). ANNMAl has a TNT RE of 0.87. Since neither ANNM nor ANNMAl are in BNOISE2, 0.88 pounds of TNT was utilized as a surrogate.
5. Smokeless powder in this application has a TNT RE of approximately 0.6, which would mean 0.9 pounds of TNT approximates 1.5 pounds of smokeless powder. While 0.88 pounds is an option (results of which can be seen in Shot #9) 1.1 pounds was used as a 'worst-case'.

Comparison to Firing Range

The current FLETC firing ranges support a wide range of small arms weapons, but predominantly range use is focused on law enforcement pistols firing .040 LE rounds. SARNAM does not have this data included as an option, however a .44 Magnum round would be a conservative approximation as it is at least 3 dB louder. Please note that while several rifles are also used at the range, noise produced from most – if not all – of them is less than that of a 180-grain .44 Magnum round. Please keep in mind the impulse noise of a bullet is different from that of an explosive and likely covers a different range of frequencies. However, for a rough comparison this should be a decent approximation.

As the firing range operates near daily it is subject to a wide variety of weather conditions, both favorable and unfavorable. For this analysis we chose a PK 50 approximation of 115.2 dB at 100 meters (Figure 2) since this should be representative of the average day. This value is for a single gunshot, however, and needed to be adjusted to account for several personnel at once using the below equation.

Noise amplification for 'n' sources: $L_{i,n} = 10 * \log_{10}\left(n * 10^{\left(\frac{L_i}{10}\right)}\right)$

In this case, both n=50 and n=100 were calculated and are shown in Table 2; all explosive shots outside the blasting cap exceed both Magnum extrapolations. The firing ranges are somewhat closer to the town of Artesia though not close enough to be much of a factor. Direct comparison beyond this analysis is difficult as the firing ranges are likely active for several hours out of the day and may be more noticeable outside the FLETC perimeter due to the duration of fire (i.e. a single powerful 'shot' is likely less noticeable than repeated lesser 'shots').

OneShot Results

A-WEIGHTED EXPOSURE LEVEL, ASEL (dB)	C-WEIGHTED EXPOSURE LEVEL, CSEL (dB)	USER-WTD EXPOSURE LEVEL, USEL (dB)	UNWEIGHTED PEAK LEVEL, PK (dB)	PERCENT EXCEEDING (pct)	
93.4	97.4	97.9	130.2	0.13	(mu 3 sigma)
88.4	92.4	92.9	125.2	2.28	(mu 2 sigma)
83.4	87.4	87.9	120.2	15.87	(mu 1 sigma)
78.4	82.4	82.9	115.2	50.00	(mu 0 sigma)
73.4	77.4	77.9	110.2	84.13	(mu-1 sigma)
68.4	72.4	72.9	105.2	97.72	(mu-2 sigma)
82.4	86.4	86.9	119.2	<--SARNAM DOWN WIND	

1<--ACTIVITY TOTAL

1.00<--WTD EVENT TOTAL

Figure 2: SARNAM OneShot output for a single .44 Magnum at 100 meters

The Role of Weather

As seen in the preceding sections, weather can play a significant role in sound wave propagation. Listed below are a few key notes to keep in mind[3,4]:

- Wind bends soundwaves by refraction, and also creates slight high or low pressure gradients (depending on direction of interest) that impact sound propagation. A listener standing downwind from a source of sound will be exposed to a higher output than a listener upwind of the same source at the same distance.
- A drop in humidity has been shown to attenuate sound
- A rise in temperature has been shown to attenuate sound
- Dense atmospheric air, such as that associated with storms and seen with dark clouds, can create an echo chamber of sorts. Sound propagates in all directions from a source, so on a clear day without significant changes in pressure it can travel into the sky somewhat unhindered – though other atmospheric pressure phenomena , clouds, and wind can certainly change that. During a storm or a pressure inversion (if located near appropriate topography) the noise that would typically travel 'up and out' is more readily reflected downward, amplifying sounds for the observer. This is often seen at airports, where neighbors may complain of jet noise on certain days but not others, and coastlines, where at some points several miles inland an observer can hear ocean waves at certain times.

Based on the above and the location of the testing, a sunny to partly cloudy day (cloud coverage ≤ 65%) with low sustained winds (≤ 30 mph, or 0-6 on the Beaufort[5] scale) would be considered a 'neutral weather' scenario. Similarly, a very cloudy day (>65% cloud coverage) with precipitation likely and with high winds (30+ mph, or 7+ on the Beaufort[6] scale), especially those heading generally eastward (i.e. towards the center of population of Artesia), would be considered an 'unfavorable weather' scenario.

[3] Uno Ingard, "A Review of the Influence of Meteorological Conditions on Sound Propagation", *Journal of the Acoustical Society of America, 25*
[4] Milan Drahos and Richard Drahos, "Influence of Meteorological Conditions on Propagation of Sound"
[5] Named after its creator Sir Francis Beaufort (1774-1857), the Beaufort wind scale equivalates wind speed to physical affects on the environment, such as tree or bodies of water, on a scale of 0 to 12 (0 = calm, 12 = hurricane). While often used for nautical purposes, the Beaufort scale is useful in most any environment as a casual observer can estimate wind speed based on observed variables in the field. In this case, a 6 on the Beaufort scale could be described as a strong breeze, sufficient to cause large branches of trees begin to sway.
[6] A 7 on the Beaufort scale is describe as a 'near gale' and puts whole trees into motion while causing inconvenience when walking against the wind. For further information please see the NOAA Weather Prediction Center: https://www.wpc.ncep.noaa.gov/html/beaufort.shtml.

Environmental Assessment Suggested Text and Mitigation Strategies

All input here is based solely on the range activities assessed above. Direct comparison of the values in this report to the noise study from December 1989 is not recommended as analysis methods have changed significantly over the past 30 years. Additionally, peak impact noise measurements (such as explosives and singular gunshots) are not the same thing as A-weighted background noises measured over time. Additionally, the scope of this analysis only includes the environmental impact and does not quantify noise exposures to instructors or students.

Chapter 4 (Environmental Consequences)

Proposed Action:

The Proposed Action would result in long-term, periodic, minor impacts on noise. The IED demonstration held up to 15 times per year could potentially produce peak, unweighted impact noise levels in excess of 130 dB outside the perimeter of the FLETC compound, potentially resulting in public irritation from neighboring homes. Impact noise exceeding 130 dB may also be felt by individuals and shake or vibrate homes and other personal property.

The bulk of Artesia, NM is located well outside the 115 dB PK 15 line; at that distance most shots would be faint or inaudible unless unfavorable weather conditions were present and would be unlikely to result in public irritation. Shots #4 through #11 would be louder than any single impact noise at the existing firing ranges, though continuous operations at the ranges may be more noticeable to neighboring homes (i.e. a single loud impact may be heard but questioned [*did you hear something?*] versus a continuous stream of lesser impact noises that could be confirmed through repetition [*I definitely hear something*]).

Impacts to neighboring homes would best be mitigated by performing the demonstration only during favorable to neutral weather conditions (i.e. clear sunny days with minimal wind). A comparison of Table 1 and 2 readily shows that noise contours in neutral conditions are more than halved compared to unfavorable conditions. Ensuring the public can be made aware of the demonstration by placing a public notice on the FLETC-Artesia website may also mitigate public concern.

Another mitigation strategy, albeit a potentially costly one, would be utilize a 'Giant Voice'-style mass notification system (or similar) to provide advance notice prior to each shot. However, care would need to be taken to ensure this system would not be more of a nuisance to surrounding neighbors than the demonstration itself.

No-action Alternative:

Under the no-action alternative FLETC would take no action, and the baseline noises at the FLETC compound would remain unchanged.

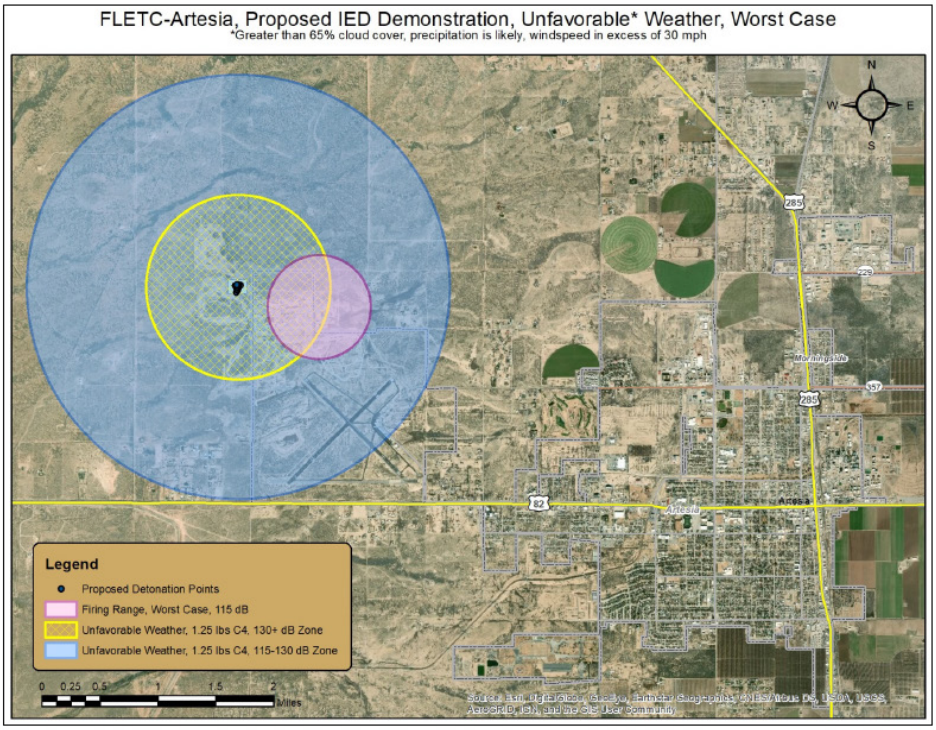


Figure 3: FLETC-Artesia, Proposed IED Demonstration, Unfavorable Weather, Worst Case IED

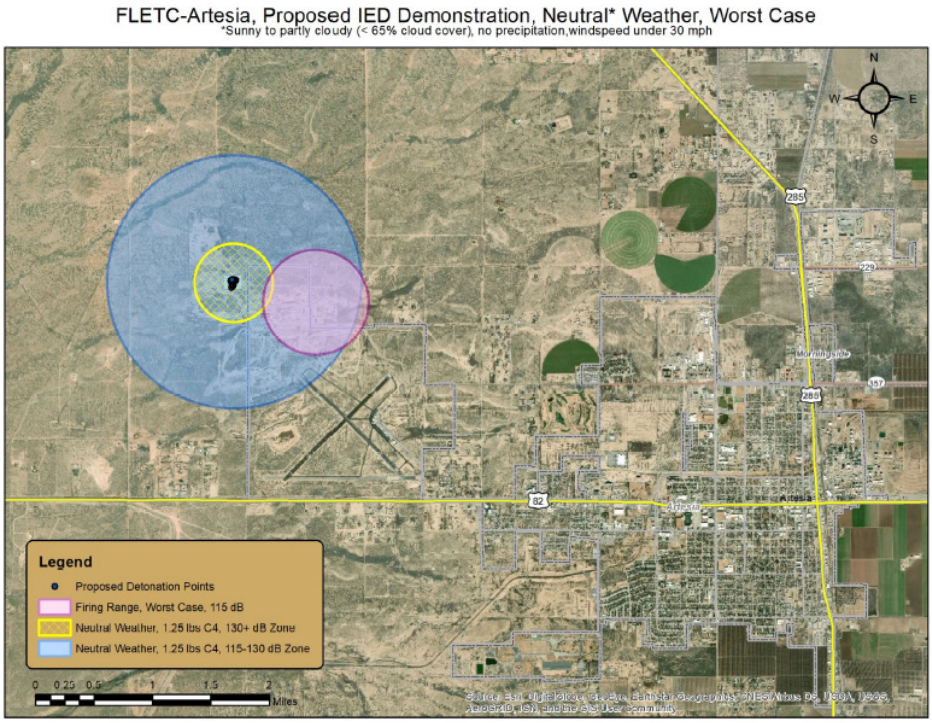


Figure 4: FLETC-Artesia, Proposed IED Demonstration, Neutral Weather, Worst Case IED

Table 2: IED Demo Peak Impact Noise Analysis for FLETC-Artesia (PK 50, Neutral Weather)

Shot #	Location	Scenario	BNOISE2 Input	115 dB (feet)	130 dB (feet)
1	10' From Bleachers	One (1) foot safety fuse (burn, ground)	n/a – not explosive	n/a	n/a
2	Firing Point #1	One (1) lb black powder, one (1) lb smokeless powder (burn, ground)	n/a – not explosive	n/a	n/a
3[1]	Firing Point #2	One (1) #8 blasting cap Detonation, suspended	n/a – SARNAM 12 ga. shotgun.[1]	170	30
4	Firing Point #3	1/3 lb Pentolite Detonation, suspended	0.35 pounds Pentolite	3,810	1,310
5[2]	Firing Point #4	One (1) lb Tannerite Detonation, suspended	0.55 pounds TNT[2]	3,970	1,350
6	Firing Point #5	0.5 lbs RDX Detonation, suspended	0.55 pounds RDX-Cyclonite	4,590	1,480
7	Firing Point #6	0.5 lbs nitromethane Detonation, suspended	0.55 pounds nitromethane	3,940	1,350
8[3]	Firing Point #7	Two (2) sticks Dynamite AN Detonation, suspended	1.1 pounds Dynamite (60% nitroglycerin)[3]	3,940	1,310
9[4]	Firing Point #8	Two (2) sticks Kinestik Detonation, suspended	0.88 pounds TNT[4]	4,560	1,480
10	Firing Point #9	1.25 lbs C-4 Detonation, suspended	One (1) stick M112 C-4	5,710	1,770
11[5]	Firing Point #10	1.5 lbs smokeless powder Detonation, suspended	1.1 pounds TNT[5]	4,920	1,540
n/a	Firing Range	SARNAM extrapolation of 50 .44 Magnum pistols fired simultaneously in the same location	n/a	2,360	430
n/a	Firing Range	SARNAM extrapolation of 100 .44 Magnum pistols fired simultaneously in the same location	n/a	3,350	590

1. Blasting cap noise data could not be sourced directly, however several references indicate the noise is comparable to that of a shotgun.
2. USAPHC indicated one pound of Tannerite has a relative equivalency (RE) of 0.55 pounds TNT
3. 60% nitroglycerin was an assumed worst-case concentration
4. Kinestik = ANNM (Ammonium Nitrate + Nitromethane [60/40, typically]). Some mixtures of ANNM approach the efficiency of ANNMAl (Ammonium nitrate, nitromethane, and trace amounts of aluminum, carbon, and TETA (Triethylenetetramine)). ANNMAl has a TNT RE of 0.87. Since neither ANNM nor ANNMAl are in BNOISE2, 0.88 pounds of TNT was utilized as a surrogate.
5. Smokeless powder in this application has a TNT RE of approximately 0.6, which would mean 0.9 pounds of TNT approximates 1.5 pounds of smokeless powder. While 0.88 pounds is an option (results of which can be seen in Shot #9) 1.1 pounds was used as a 'worst-case'.

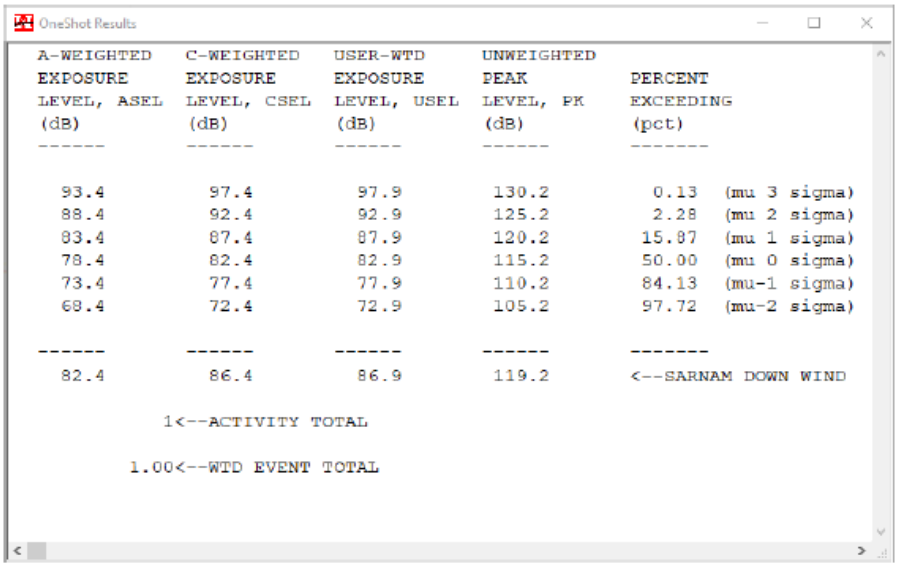
Comparison to Firing Range

The current FLETC firing ranges support a wide range of small arms weapons, but predominantly range use is focused on law enforcement pistols firing .040 LE rounds. SARNAM does not have this data included as an option, however a .44 Magnum round would be a conservative approximation as it is at least 3 dB louder. Please note that while several rifles are also used at the range, noise produced from most – if not all – of them is less than that of a 180-grain .44 Magnum round. Please keep in mind the impulse noise of a bullet is different from that of an explosive and likely covers a different range of frequencies. However, for a rough comparison this should be a decent approximation.

As the firing range operates near daily it is subject to a wide variety of weather conditions, both favorable and unfavorable. For this analysis we chose a PK 50 approximation of 115.2 dB at 100 meters (Figure 2) since this should be representative of the average day. This value is for a single gunshot, however, and needed to be adjusted to account for several personnel at once using the below equation.

Noise amplification for 'n' sources: $L_{i,n} = 10 * \log_{10}\left(n * 10^{\left(\frac{L_i}{10}\right)}\right)$

In this case, both n=50 and n=100 were calculated and are shown in Table 2; all explosive shots outside the blasting cap exceed both Magnum extrapolations. The firing ranges are somewhat closer to the town of Artesia though not close enough to be much of a factor. Direct comparison beyond this analysis is difficult as the firing ranges are likely active for several hours out of the day and may be more noticeable outside the FLETC perimeter due to the duration of fire (i.e. a single powerful 'shot' is likely less noticeable than repeated lesser 'shots').


OneShot Results

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A-WEIGHTED    C-WEIGHTED    USER-WTD      UNWEIGHTED
EXPOSURE      EXPOSURE      EXPOSURE      PEAK          PERCENT
LEVEL, ASEL   LEVEL, CSEL   LEVEL, USEL   LEVEL, PK     EXCEEDING
(dB)          (dB)          (dB)          (dB)          (pct)
------        ------        ------        ------        -------

  93.4          97.4          97.9          130.2          0.13   (mu 3 sigma)
  88.4          92.4          92.9          125.2          2.28   (mu 2 sigma)
  83.4          87.4          87.9          120.2         15.87   (mu 1 sigma)
  78.4          82.4          82.9          115.2         50.00   (mu 0 sigma)
  73.4          77.4          77.9          110.2         84.13   (mu-1 sigma)
  68.4          72.4          72.9          105.2         97.72   (mu-2 sigma)

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  82.4          86.4          86.9          119.2        <--SARNAM DOWN WIND

           1<--ACTIVITY TOTAL

        1.00<--WTD EVENT TOTAL
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Figure 2: SARNAM OneShot output for a single .44 Magnum at 100 meters

The Role of Weather

As seen in the preceding sections, weather can play a significant role in sound wave propagation. Listed below are a few key notes to keep in mind[3,4]:

- Wind bends soundwaves by refraction, and also creates slight high or low pressure gradients (depending on direction of interest) that impact sound propagation. A listener standing downwind from a source of sound will be exposed to a higher output than a listener upwind of the same source at the same distance.
- A drop in humidity has been shown to attenuate sound
- A rise in temperature has been shown to attenuate sound
- Dense atmospheric air, such as that associated with storms and seen with dark clouds, can create an echo chamber of sorts. Sound propagates in all directions from a source, so on a clear day without significant changes in pressure it can travel into the sky somewhat unhindered – though other atmospheric pressure phenomena , clouds, and wind can certainly change that. During a storm or a pressure inversion (if located near appropriate topography) the noise that would typically travel 'up and out' is more readily reflected downward, amplifying sounds for the observer. This is often seen at airports, where neighbors may complain of jet noise on certain days but not others, and coastlines, where at some points several miles inland an observer can hear ocean waves at certain times.

Based on the above and the location of the testing, a sunny to partly cloudy day (cloud coverage ≤ 65%) with low sustained winds (≤ 30 mph, or 0-6 on the Beaufort[5] scale) would be considered a 'neutral weather' scenario. Similarly, a very cloudy day (>65% cloud coverage) with precipitation likely and with high winds (30+ mph, or 7+ on the Beaufort[6] scale), especially those heading generally eastward (i.e. towards the center of population of Artesia), would be considered an 'unfavorable weather' scenario.

[3] Uno Ingard, "A Review of the Influence of Meteorological Conditions on Sound Propagation", *Journal of the Acoustical Society of America, 25*
[4] Milan Drahos and Richard Drahos, "Influence of Meteorological Conditions on Propagation of Sound"
[5] Named after its creator Sir Francis Beaufort (1774-1857), the Beaufort wind scale equivalates wind speed to physical affects on the environment, such as tree or bodies of water, on a scale of 0 to 12 (0 = calm, 12 = hurricane). While often used for nautical purposes, the Beaufort scale is useful in most any environment as a casual observer can estimate wind speed based on observed variables in the field. In this case, a 6 on the Beaufort scale could be described as a strong breeze, sufficient to cause large branches of trees begin to sway.
[6] A 7 on the Beaufort scale is describe as a 'near gale' and puts whole trees into motion while causing inconvenience when walking against the wind. For further information please see the NOAA Weather Prediction Center: https://www.wpc.ncep.noaa.gov/html/beaufort.shtml

Environmental Assessment Suggested Text and Mitigation Strategies

All input here is based solely on the range activities assessed above. Direct comparison of the values in this report to the noise study from December 1989 is not recommended as analysis methods have changed significantly over the past 30 years. Additionally, peak impact noise measurements (such as explosives and singular gunshots) are not the same thing as A-weighted background noises measured over time. Additionally, the scope of this analysis only includes the environmental impact and does not quantify noise exposures to instructors or students.

Chapter 4 (Environmental Consequences)

Proposed Action:

The Proposed Action would result in long-term, periodic, minor impacts on noise. The IED demonstration held up to 15 times per year could potentially produce peak, unweighted impact noise levels in excess of 130 dB outside the perimeter of the FLETC compound, potentially resulting in public irritation from neighboring homes. Impact noise exceeding 130 dB may also be felt by individuals and shake or vibrate homes and other personal property.

The bulk of Artesia, NM is located well outside the 115 dB PK 15 line; at that distance most shots would be faint or inaudible unless unfavorable weather conditions were present and would be unlikely to result in public irritation. Shots #4 through #11 would be louder than any single impact noise at the existing firing ranges, though continuous operations at the ranges may be more noticeable to neighboring homes (i.e. a single loud impact may be heard but questioned [*did you hear something?*] versus a continuous stream of lesser impact noises that could be confirmed through repetition [*I definitely hear something*]).

Impacts to neighboring homes would best be mitigated by performing the demonstration only during favorable to neutral weather conditions (i.e. clear sunny days with minimal wind). A comparison of Table 1 and 2 readily shows that noise contours in neutral conditions are more than halved compared to unfavorable conditions. Ensuring the public can be made aware of the demonstration by placing a public notice on the FLETC-Artesia website may also mitigate public concern.

Another mitigation strategy, albeit a potentially costly one, would be utilize a 'Giant Voice'-style mass notification system (or similar) to provide advance notice prior to each shot. However, care would need to be taken to ensure this system would not be more of a nuisance to surrounding neighbors than the demonstration itself.

No-action Alternative:

Under the no-action alternative FLETC would take no action, and the baseline noises at the FLETC compound would remain unchanged.

APPENDIX E – Notice of Availability

NOTICE OF AVAILABILITY

Draft Environmental Assessment and Finding of No Significant Impact

Implementation of Explosives Effects Demonstration Training

Federal Law Enforcement Training Center, Office of Artesia Operations, Artesia, New Mexico

On behalf of the Federal Law Enforcement Training Center, Office of Artesia Operations (FLETC OAO), the U.S. Army Corps of Engineers, Albuquerque District (USACE) has released the Draft Environmental Assessment (DEA) and Finding of No Significant Impact (FONSI) for the implementation of an Improvised Explosives Detonation Effects Demonstration Sequence training as part of the FLETC OAO curriculum. The purpose of the proposed training is to meet Federal law enforcement training standards for the sight and sound recognition of explosive devices, and to improve the overall readiness and capabilities of Federal personnel.

The DEA/FONSI is electronically available for viewing and copying at the following FLETC and USACE public websites. Paper copies are also available for review at: FLETC OAO, 1300 W Richey Avenue, Artesia, NM. A hardcopy will be sent upon written request. The public review period will extend from June 1, 2020, to June 15, 2020.

https://www.fletc.gov/national-environmental-policy-act

https://www.spa.usace.army.mil/Missions/Environmental/Environmental-Compliance-Documents/Environmental-Assessments-FONSI/

Written comments on the DEA/FONSI should be received by 4:00 pm on June 15, 2020, and addressed to: Mr. James A. Brown, Lead Environmental Protection Specialist, Federal Law Enforcement Training Centers, 1131 Chapel Crossing Rd., Brunswick, GA, 31524. Alternatively, comments may also be sent electronically: james.a.brown@fletc.dhs.gov.

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APPENDIX F – Public Review Comments