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# RECORD OF DECISION

## IMPLEMENTATION OF ENERGY, WATER, AND SOLID WASTE SUSTAINABILITY INITIATIVES

### FORT BLISS, TEXAS AND NEW MEXICO



April 2014

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# **RECORD OF DECISION FOR THE IMPLEMENTATION OF ENERGY, WATER, AND SOLID WASTE SUSTAINABILITY INITIATIVES FORT BLISS, TEXAS AND NEW MEXICO**

This is a Record of Decision (ROD) for the *Final Environmental Impact Statement, Implementation of Energy, Water, and Solid Waste Sustainability Initiatives at Fort Bliss Texas and New Mexico* (Net Zero FEIS), which is incorporated by reference as part of this decision. The Net Zero FEIS was filed with the U.S. Environmental Protection Agency (USEPA) on March 13, 2014 and the Notice of Availability (NOA) was published in the Federal Register on March 21, 2014.

The U.S. Army (Army) has decided to implement Alternatives 2 through 7, as summarized in Section 2.0 of this ROD and described in detail in the Net Zero FEIS. These alternatives involve the implementation of conservation policies and procedures; the construction and use of a water reclamation pipeline, a waste-to-energy plant, and a geothermal energy facility; development and use of concentrating solar power (CSP) technology; and the implementation of other renewable energy technologies on Fort Bliss. The Net Zero FEIS and this ROD comply with the National Environmental Policy Act of 1969 (NEPA); the Council on Environmental Quality (CEQ) regulations for Implementing the Procedural Provisions of NEPA, 40 Code of Federal Regulations (CFR), Parts 1500-1508; and the Environmental Analysis of Army Actions (32 CFR, Part 651), the Army's regulation for implementation NEPA.

## **1.0 BACKGROUND**

Currently, the Army faces significant challenges in meeting its energy and water supply requirements, both at home and abroad. In spring 2011, Fort Bliss was approved by the Assistant Secretary of the Army for Installation, Energy, and Environment to become a 'Net Zero' installation for energy and water use, and solid waste generation. Fort Bliss was one of only two Army installations selected to pursue all three tracks (energy, water, and solid waste), with full implementation and achievement planned by 2020. The goal is to manage Fort Bliss' energy and water resources on a Net Zero basis, including reducing and repurposing solid wastes. In doing so, Fort Bliss would improve the Installation's long-term sustainability through anticipated cost reductions, while improving mission capability, quality of life, and relationships with local communities. Fort Bliss recognizes the need to improve efficiencies in energy, water, and waste management for the benefit of current and future missions and has initiated planning efforts to implement many of the Net Zero projects, which are analyzed under the Net Zero FEIS.

## **2.0 ALTERNATIVE ACTIONS CONSIDERED**

Fort Bliss conducted a rigorous screening process to determine which technologies and Installation sites would be available to support implementation of the Net Zero initiative. In order to be considered a viable alternative and carried forward for analysis, the alternative had to meet the following screening criteria:

- Mission compatibility
- Electrical tie-in potential (renewable energy)
- Energy/water projects located on or directly adjacent to the Installation to provide enhanced energy and water security
- Cultural, environmental, and geographic factors
- Safety and unexploded ordnance
- Water use intensity

The environmentally preferred alternatives are the six action alternatives (2 through 7) which will conserve resources and lessen the use of more environmentally damaging materials such as fossil fuels. The six action alternatives summarized below all relate to improving the Fort Bliss environment in various aspects and are preferable to Alternative 1 (No Action) which would continue with the wasteful and harmful practices that the Installation can no longer afford. Alternatives 4, 5, and 7 (at the least) will likely require follow-on NEPA analyses and more information about impacts will be examined. The designation of these alternatives as environmentally preferred should be understood as being at the programmatic level. A more detailed discussion of screening criteria and how they were applied can be found in Section 2.2 of the Net Zero FEIS.

### **2.1 Alternative 1 – No Action**

Under the No Action Alternative, Fort Bliss would not pursue additional Net Zero initiatives to accelerate reduction of energy use, water use, and waste generation and disposal beyond those policies and procedures that are currently in place. The increasing costs of centralized utility-provided energy and the potential disruption of Installation energy and water supplies would continue to be threats to the Army and Installation operations. The failure to implement Net Zero initiatives would make it less likely that federal mandates, goals, and policies pertaining to renewable energy production, energy use, water conservation, and waste reduction would be met. This alternative would hinder the ability of Fort Bliss' energy, water, and waste programs to meet future demands.

## **2.2 Alternative 2 – Conservation Policies and Procedures**

Fort Bliss will implement policies, procedures, best management practices, and resource conservation programs such as awareness campaigns, building and grid metering, microgrids, technology upgrades, water metering, replacement of obsolete systems, and promotion of low-water use designs for landscaping projects. Alternative 2 would also include actions related to Net Zero communities and small-scale, renewable energy projects. Actions discussed as part of Alternative 2 that implement conservation policy and procedures will be implemented as part of all action alternatives.

## **2.3 Alternative 3 – Water Reclamation Pipeline**

Fort Bliss will pursue the construction and use of a water reclamation pipeline (“purple pipe”) to provide reclaimed water for secondary uses on Fort Bliss, including landscaping, golf course irrigation, central cooling towers, and central wash facilities for cleaning tactical vehicles returning from training in the field. The purple pipe will connect to a conduit pipe from the city of El Paso’s wastewater treatment plant. Construction of the purple pipe will involve trenching approximately 24 miles of pipe.

## **2.4 Alternative 4 – Waste-to-Energy Plant**

Waste-to-energy (WTE) refers to technologies that use municipal solid waste to either: 1) produce steam to power a generator to produce electricity; or 2) convert biomass waste into a combustible fuel through microbiological processes. The fuel is then used to power an electrical generator. A WTE plant would allow Fort Bliss to divert the portion of its solid waste that would otherwise require transport for landfill deposition. Electricity generated from the plant could be handled in two ways: 1) it could be fed directly into the regional transmission grid with the Installation receiving credit for this power from the electric utility; or 2) Fort Bliss would own the power generated and distribute it on lines located wholly within the Installation boundaries, i.e., “behind the meter,” thus providing its own electrical power.

The Net Zero FEIS analysis has determined that a WTE plant is not feasible in the near future. No areas within Fort Bliss are currently identified as possible locations for a WTE plant or electrical line routes. Likewise, the size of a possible WTE plant (in terms of electrical generating capacity) and technology are not known at this point. The Army has an ongoing interest in supporting WTE technology. As such, Alternative 4 is discussed in the Net Zero FEIS and this ROD to provide basic information about WTE technologies and provide programmatic-level discussion that will serve as a starting point for further NEPA analysis that will be required if a decision were made to construct and operate a WTE plant on Fort Bliss.

## **2.5 Alternative 5 – Geothermal Energy Facility**

Fort Bliss will work with Department of Interior and private development firms to advance geothermal development on McGregor Range in New Mexico. Geothermal energy plants use the heat from reservoirs of hot water found below the earth's surface to produce energy.

The geothermal technology that would be used for electricity generation has not been determined and must await confirmation of resource viability. If viable, a geothermal energy facility could be developed near McGregor Range Camp, New Mexico. A current estimate is that a facility could produce up to 20-megawatt (MW) of electricity. Concentrating solar thermal technology could possibly be incorporated to further increase water temperature to aid in steam generation.

## **2.6 Alternative 6 – Dry Cooled Concentrating Solar Power Technology**

Fort Bliss will pursue development of a 50-MW dry-cooled concentrating solar power (CSP) parabolic trough facility on up to 300 acres in the South Training Area in accordance with screening criteria presented in the Net Zero FEIS. CSP is designed to convert the sun's energy to heat and then use that heat to produce electricity. A parabolic trough system concentrates solar energy along a line-shaped receiver, typically a fluid-filled pipe positioned at the focus of parabolic-shaped reflectors. For optimal performance, the reflective surfaces of CSP technologies must track the sun (keeping the sun's incident rays perpendicular to the reflecting surface), and reflectors and/or concentrators must exhibit good optical characteristics. Parabolic trough CSP systems typically use a heat-transfer fluid (usually synthetic oil) to transfer the heat generated at the solar collectors to a heat exchanger where steam is produced to drive a conventional steam turbine generator.

## **2.7 Alternative 7 – Implement Other Renewable Energy Technologies**

Other renewable energy technologies, such as biomass, large-scale wind, and solar photovoltaic (PV) facilities, will be developed on Fort Bliss if such projects meet the appropriate screening criteria presented in the Net Zero FEIS. Renewable energy projects may also require use of small-scale, natural gas-powered generators to help create a more consistent supply of electricity. Implementation of Alternative 7 will allow the Army to adaptively implement future energy projects that would assist the Installation with meeting the Army's Net Zero energy goals. Energy projects considered for implementation will require supplemental NEPA analysis tiered from the Net Zero FEIS.

### **3.0 BASIS OF THE ARMY'S DECISION**

The Army will implement Alternatives 2 through 7 which consist of multiple, related, and interconnected projects needed to reach Net Zero goals, comply with federal and Army energy mandates, and meet the Army's energy and water security objectives. Not all projects included in the alternatives summarized in this ROD will be implemented to the full extent discussed in Section 2.3 of the Net Zero FEIS. Technological advancements, legislative changes, and other factors may result in changes to the proposed projects. The Net Zero FEIS was prepared to address potential projects that may move forward in the mid- to long-term (i.e., the next 3- to 8-year) timeframe. The Net Zero FEIS programmatically evaluates potential development for future renewable energy, water, and waste technologies.

The Army's decision is based upon the analysis contained in the Net Zero FEIS, as well as policy, technical, and economic considerations. The Army specifically considered whether the alternatives in fact, after completion of the analysis, continued to meet the screening criteria of Section 2.2 of the Net Zero FEIS. Alternatives 2 through 7 support the Army's Net Zero initiatives, and have therefore been selected.

The Army has removed site specific locations for a proposed WTE facility from Alternative 4 - Waste-to-Energy Plant. As explained in Section 2.3.4.1 of the Net Zero FEIS, a feasible site for a WTE plant could not be determined at this point in time, for a variety of reasons. In making this determination, the Army took into account concerns raised by the public during the Net Zero Draft EIS public comment period about this alternative. The Net Zero FEIS contains a commitment to identify new potential sites and conduct further analysis should the Army consider pursuing this type of technology in the future. The general information contained in the Net Zero FEIS could form the basis for such future analysis as the Army still has an interest to support WTE technology.

Fort Bliss' proposed energy conservation actions and renewable energy projects have been designed to align with the goal of the Army's Net Zero energy initiative to have each installation produce as much energy within its boundaries as it uses each year. Additionally, Fort Bliss is striving to meet federal laws and executive orders for reduction of energy use and greenhouse gas emissions.

The goal of the Army's Net Zero water initiative is to limit the consumption of freshwater resources and return water back to the same watershed so as not to deplete the groundwater and surface water resources of the region in quantity or quality. Fort Bliss is located in an arid region where freshwater is being increasingly depleted. The installation must better conserve freshwater to help insure its long term

sustainability. Fort Bliss will proceed with a project to use reclaimed water for landscape irrigation. Vigorous water conservation measures as described in the Net Zero FEIS will also play an important role.

Solid waste should be reduced, reused, and re-purposed to the greatest extent practicable to meet the goal of the Army's Net Zero waste initiative. Fort Bliss will work toward more innovative ways to recycle and to convert remaining solid waste into materials of value to reach the point where essentially no solid waste is disposed of in landfills. A WTE plant may be viable at some point in the future to even further assist the Installation in reaching this goal.

Adverse effects pertaining to air quality; airspace; biological resources; cultural resources; soils; hazardous waste, hazardous materials, and safety; land use; noise; environmental justice; water resources; and transportation and traffic were recognized by the Army and were germane to the decision to select Alternatives 2 through 7. Significant effects are anticipated to land use (as a result of converting training land to developed land) and soils (disturbance of up to 300 acres for construction of CSP arrays) that would result from the implementation of Alternative 6 - Dry Cooled Concentrating Solar Power Technology. For the remaining resources, adverse effects are anticipated to be mitigable to less than significant. Potentially beneficial impacts are projected for air quality, energy demand and generation, socioeconomics, water supply sources, water demand, and wastewater reuse. The Army considered the magnitude and severity of the effects and the degree to which they can be effectively managed and mitigated. Although locally important, these impacts are minor when considered in a regional or national context, and do not outweigh the benefits of the selected alternatives necessary to support the Army's Net Zero goals, comply with federal and Army energy mandates, and meet the Army's energy and water security objectives at Fort Bliss.

Cumulative impacts were analyzed to encompass past, present, and reasonably foreseeable future activities in the region, along with implementation of the selected alternatives. Beneficial cumulative impacts are expected under full implementation of Alternatives 2 through 7 regarding energy and water demand. Likewise, land use and soils will sustain significant adverse cumulative impacts.

#### **4.0 MITIGATION MEASURES**

Implementation of the Army's decision is expected to result in direct, indirect, and cumulative impacts to the natural and human environment of Fort Bliss and the surrounding area. Incorporated within all of the Alternatives considered in the Net Zero FEIS are measures to mitigate potential adverse impacts that were identified.



To minimize the potential adverse impacts from implementation of Alternatives 2 through 7, the Army will adopt the following mitigation measures. All practicable means to avoid or minimize environmental harm from the selected alternatives have been adopted. These measures are summarized in this ROD and described in greater detail in Sections 3.0 and 5.0 of the Net Zero FEIS. Monitoring and enforcement of mitigation measures will be implemented through existing programs and procedures (as applicable) to include: the Integrated Natural Resource Management Plan (INRMP); the Integrated Cultural Resource Management Plan (ICRMP); Programmatic Agreements; Fort Bliss Construction Stormwater Pollution Prevention Plan; and the Fort Bliss Hazardous Waste Management Plan. Additionally, Alternatives 4 5, and 7 (at the least) will require additional supplemental NEPA analysis, including a discussing of project specific mitigation, tiered to this Net Zero FEIS prior to implementation of the project.

- **Air Quality** – A project-specific construction and operations emissions mitigation plan will be implemented during the construction and operational phases of Alternatives 3 through 7 to reduce emissions from construction equipment, fugitive dust, and operational emissions.
- **Airspace** – All applicable Army and Federal Aviation Administration (FAA) airspace regulations will be adhered to for the placement of renewable energy facilities.
- **Biological Resources** – Project-specific Best Management Practices (BMPs) will be implemented during construction of all alternatives. These include, but are not limited to: development of Stormwater Pollution Prevention Plans (SWPPP) per Fort Bliss construction guidance; minimization of open trenches and providing wildlife escape paths; designing and constructing overhead electrical lines to meet avian protection guidelines; and following the 2012 United States Fish and Wildlife Service (USFWS) Land Based Wind Energy Guidelines.

In areas that will be irrigated with reclaimed water, Fort Bliss will incorporate management techniques for reducing impacts to vegetation from the high salt content usually found in reclaimed water. This includes, but is not limited to: incorporating salt tolerant species into existing landscapes; periodically flushing the root zone with fresh water irrigations to remove excess salts; blending high-salinity water with low-salinity water; adding soil amendments to correct sodium and alkalinity problems; and avoiding spraying reclaimed water on plant foliage.

- **Cultural Resources** – Adherence to the Fort Bliss Programmatic Agreement and ICRMP that establish processes and procedures to address adverse effects on cultural resources will ensure that

processes and procedures are in place to avoid, reduce, or mitigate adverse effects on historic properties or cultural resources of interest to the tribes. Specific measures to avoid or mitigate adverse effects on National Historic Preservation Act eligible historic properties and cultural resources of interest to the tribes will be identified through consultation with the New Mexico and Texas State Historic Preservation Office, tribal governments, and other interested parties.

- **Soils** – All construction will adhere to the Fort Bliss Construction SWPPP guidance to prevent soil erosion.
- **Hazardous Waste, Hazardous Materials, and Safety** – The Fort Bliss Installation Hazardous Waste Management Plan and Army Standard Operating Procedures (SOPs) for the handling and storage of hazardous wastes will be followed during project construction and operation for all alternatives. These documents are consistent with federal and state regulations and provide detailed information about training; hazardous waste management roles and responsibilities; and hazardous waste identification, storage, transportation, and spill control.

Site workers in the range areas will be trained on how to identify munitions and explosives of concern/unexploded ordinance (UXO) and the proper protocol to be followed if munitions or UXO are found.

Texas Commission of Environmental Quality (TCEQ) has established general requirements for the use of reclaimed water which Fort Bliss will follow. These requirements include stipulations requiring that vegetative cover be maintained and application times for reclaimed water to avoid time frames when wet vegetation would be contacted by people. Additional mitigation will include appropriate signage identifying areas where reclaimed water is applied.

- **Land Use** – Fort Bliss will adhere to all existing land use management requirements and ensure that the implementation of all action alternatives that propose construction will be compatible with all adjacent or nearby land uses as well as the military mission and training and range land requirements at the Installation.
- **Noise** – The adverse impacts from noise associated with construction activities are temporary and will be less than significant. More sensitive receptors, however, may be affected by construction noise at times. Measures to further reduce noise impacts include, but are not limited to: performing

construction work during business hours only; sequencing work to minimize the number of loud construction equipment operating at the same time; ensuring all noise muffling equipment is installed and working properly; and insuring that hearing protection is worn by all workers on the project site, as required.

- **Environmental Justice** – No disproportionate, adverse effects are expected to occur to minority and low income populations from implementation of the selected alternatives.
- **Water Resources** – All construction projects will adhere to the Fort Bliss Construction SWPPP guidance and are subject to the Section 438 of the Energy Independence and Security Act (EISA) of 2007.
- **Transportation and Traffic** – No adverse impacts on transportation or traffic has been identified in the Net Zero FEIS for Alternatives 2 through 7.

## 5.0 SUMMARY

The Army has considered the results of the analysis described in the Net Zero FEIS, supporting studies, and comments provided during the public comment period of the Net Zero Draft EIS. Based on this review the Army has determined to implement Alternatives 2 through 7. Implementation of these alternatives, along with the mitigations proposed in the Net Zero FEIS, will allow the Fort Bliss to support the Army's Net Zero initiatives in concert with supporting on-going and future mission requirements.

The Net Zero FEIS, ROD, and other supporting environmental documents are available on the Fort Bliss website (<https://www.bliss.army.mil/>). For further information, please contact Mr. John Kipp, Fort Bliss NEPA Planner; IMBL-PWE, Bldg 624 Pleasonton Road, Fort Bliss, TX 79916-6812; e-mail: [john.m.kipp6.civ@mail.mil](mailto:john.m.kipp6.civ@mail.mil).

### APPROVED BY:



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**Joe C. Capps**

Executive Director

U.S. Army Installation Management Command



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Date