



# FY 2015 Secretary of Defense Environmental Awards

## Fort Hood

### Environmental Quality – Non-industrial Installation

#### Introduction and Background

Fort Hood the home of III Corps Headquarters, 1st Cavalry Division, 1st Army Division West, 13 Sustainment Command (Expeditionary) and several separate brigades, along with a host of brigade and battalion-sized tenant units and organizations. The installation supports a population of 371,056 individuals and its annual economic impact in the state of Texas totals \$25.3 billion.

The installation's distinct ranges and training areas encompass 196,797 acres and provide state-of-the-art training opportunities for mechanized maneuvers and small training exercises, combined arms training and live-fire training, supporting 327 Strykers, 422 Bradleys, 261 Abrams Tanks and 168 aircraft.

Fort Hood hosts more than 1,800 archeological sites, 18 endemic species and 2 endangered birds. Because of the variety of training and facilities supported by Fort Hood, the Directorate of Public Works (DPW) Environmental Division focuses on supporting mission readiness while balancing environmental requirements - a key message of the installation's environmental policy.

Fort Hood's SCALE logo represents key concepts: **S**top pollution, **C**ontinue improvement, **A**ssure compliance, **L**eadership commitment and **E**veryone's involved. More than 200 SCALE signs strategically placed across the installation remind personnel that protecting the environment is everyone's responsibility.



SCALE helps communicate the environmental policy.



#### JUDGING CRITERIA



Program Management



Technical Merit



Orientation to Mission



Transferability



Stakeholder Interaction



Impact/Outcome



Fort Hood's environmental program is a collaborative effort between Senior Commanders, the Environmental Division, installation units and activities, external stakeholders and the community. With full engagement and stakeholders' support, Fort Hood successfully ensures compliance, leveraging pollution prevention (P2) opportunities, increasing recycling efforts, enhancing environmental awareness and community involvement, and promoting long-term sustainability into planning and decision-making.

### Accomplishments

#### Environmental Management System

Fort Hood's EMS provides opportunities to adopt best practices and technologies, build a framework to facilitate change, improve relationships with stakeholders, and leverage opportunities that impact the installation's significant aspects, including solid waste generation, energy usage, water usage, air emissions and land management. The installation's EMS helps ensure the installation's long-term viability by engaging stakeholders, and creating partnerships with the community, and federal, state, and local governments and regulators. Fostering continual improvement of the EMS, Fort Hood identified Net Zero Waste, Net Zero Energy and Net Zero Water as its primary objectives.

Achievement of the objectives resulted in the following positive outcomes:

#### Waste

- Increased diversion rate by 20% since the implementation of the Net Zero Waste program to a current diversion rate of 49%.
- Exceeded the Qualified Recycling Program goals by processing 7,985 tons of recyclable materials, generating \$1.567 million in FY14 and 7,205 tons of recyclables, generating \$1.578 million in FY15.

- Recycled and reissued 16,400 pounds of household hazardous and electronic waste in FY14 and 21,820 pounds in FY15.



#### Energy

- Reduced energy consumption by 30% under the 2003 baseline and met the energy reduction mandate requirement of EO 13423.
- Installed 41 solar thermal facilities, two solar photovoltaic (PV) facilities, one PV for parking lot lights and a solar station.
- Reduced fossil fuels dependence with the Net Zero Energy facility, which provided 91% of the operational load and offset 60,706 pounds of carbon dioxide equivalent emission in FY15.
- Implemented innovative and efficient energy technologies that save the Army more than \$3 million annually.



#### Water

- Reduced water consumption by 45.7% under the established glide path in FY15.
- Collected rain water from a lake to pump non-potable water into the golf course's irrigation pond, supplementing 69,512,554 gallons in FY14 and 42,997,497 gallons in FY15.
- Implemented best management practices such as distribution system audits; use of low flow toilets, urinals and water features, leak detection and repair; and cooling tower management to reduce the installation's water use intensity.



*Net Zero Initiatives* - In FY 15, Fort Hood was selected as a pilot for a demonstration project that combines the Comprehensive Army Master Planning System and Net Zero Planner to help the installation with its energy planning efforts and ensure energy criteria and regulations are incorporated into the overall master plan. The net zero energy tools will help Fort Hood meet the Army's goal and an executive order requirement to reduce energy intensity by 2.5 percent. The system provides life-cycle





analysis for energy use and forecasting to help cut energy consumption and calculates energy efficiency measures for facilities with a base, better and best scenario. After incorporating comments from the Comprehensive Army Master Planning System (CAMPS) and Net Zero Planner workshop, the demonstration project will be deployed in spring 2016. The project will determine the applicability and potential for improvement across the Department of Defense (DoD).



In FY15, Fort Hood military and civilian stakeholders participated in three Net Zero and Sustainability Component Plan workshops developing a vision for each of Net Zero initiatives. The results were innovative strategies to reduce waste; work on new approaches to minimize storm water runoff; reduce energy and water use; and



Fort Hood's Net Zero goals.

implement sustainability approaches aligned with the installation's master plan. Stakeholders took part in interactive, hands-on learning sessions to create sustainability strategies. The way ahead, in both the short term and long term efforts, is a comprehensive master plan focused on sustainability and net zero initiatives through 2040 and beyond.



**Environmental Quality Control Committee -** The EQCC ensures availability of resources essential to establish, implement, maintain and improve the EMS. The EQCC provides a forum for open lines of communication to

increase environmental performance and help integrate sustainability principles. Quarterly, military and civilian leaders meet to plan and execute decisions related to environmental protection, installation sustainability, military land stewardship, natural resource conservation, energy efficiency and significant aspects identified by the EMS. Meetings also include tours of environmental facilities, motor pools and other potential contamination sources to increase awareness of environmental programs and services available, educate new commanders and share lessons learned and best practices.

**Pollution Prevention and Waste Reduction**

*Fort Hood Recycle Program* - Fort Hood's recycle program is rated among the best in the DoD and handles recyclable materials collected from the installation. Fort Hood designed its program to process all targeted recyclable materials to support its goal of



Girl scouts from Fort Hood Troop 6318 tour the recycle center.

Net Zero Waste by the year 2020, to generate funds through the sale of materials

and support environmental stewardship in

the region. Fort Hood continually surpasses its goals while generating funds to pay for program costs, capital improvements, P2 projects and community events.

Accomplishments include the following:

- FY14 - Partnered with Keep Killeen Beautiful and recycled 2,740 lbs of Christmas trees.
- FY14 - Collected 7,985 tons of recyclable materials generating \$1.567 million and invested \$129,100 back into the installation.
- FY14 - Established an aluminum can challenge from P2 Week through America Recycles Day and recognized



the top three units with \$1000, \$500 and \$250 awards.



- FY15 - Collected 7,205 tons of recyclable materials that generated \$1.578 million and invested \$135,000 back into the installation.
- FY15 - Partnered with the Child, Youth and School Services (CYSS) Adopt-A-School program to launch a recycle campaign at 76 schools in 7 school districts in 9 surrounding communities.
- Continued recycle partnership with Killeen Independent School District and collected 53.2 tons in FY14 and 74.5 tons in FY15 from 9 on-post schools.
- Identified the need to recycle Styrofoam and collected 9,939 pounds in FY14 and 11,009 pounds in FY15.
- Sponsored annual MWR events like Oktoberfest, Music on the Lawn, July 4th Celebration, Nature of Lights and UFC Fight Nights to support community events with recycle revenue.




**MKT/CK Wash Bay**  
FY14-15: Used 186 times and prevented approximately 1,395,000 gallons of water from entering the sanitary sewer.



**Tanker Purge Facility**  
FY14-15: Used 139 times and saved 695 Soldier man hours and 1,598,500 gallons of water from entering the sanitary sewer.



**JP-8/Oil/Anti-Freeze Recycle Center**  
FY14-15: Collected 95,187 gallons of JP-8 fuel, 282,005 gallons of used oil, and 50,071 gallons of antifreeze, which generated \$186,628 and avoided disposal costs, while recycling valuable resources.

*Environmental Corner-* Successful P2 projects are collocated in an area of the installation referred to as the Environmental Corner, which include a mobile kitchen trailer (MKT) /compact kitchen (CK) wash bay, tanker purge facility and JP-8/oil/anti-freeze recycle center. Centralizing these facilities helps monitor for pollution prevention and waste reduction.



*Fort Hood Classification Unit* - The CU is a multi-functional operation coordinating management of used products including hazardous waste, non-hazardous waste, universal waste and refrigerants. One of the CU's programs is the Household Waste and Residential Electronic Waste Collection program, which allows DoD personnel and their family members to dispose of household hazardous and residential electronic waste for free. In FY14-15, the program collected 46,311 pounds of household hazardous waste of which the CU reissued 14,320 pounds for individual use and recycled 23,900 pounds. Also during FY14-15, Fort Hood turned in approximately, \$1,268,750 of excess materials with 90% of materials reissued to units or recycled.



*Net Zero Waste 2020* - Fort Hood representatives work together for a greener and sustainable future by meeting its Net Zero Waste goal - eliminating landfill waste by 2020. The slogan "2020: Perfect Mission, Perfect Vision," emphasizes that reaching Net Zero Waste will take a community effort to waste less and recycle and repurpose more. In Net Zero Waste workshops, leaders developed targets and objectives, which resulted in the following positive outcomes:



- FY14 - Established a Zero Boot Print Challenge for units and activities to meet a checklist of strategies in the areas of reduce, repurpose, recycle and outreach.
- FY14-15 - Continued successful single stream recycling program in Fort Hood Family Housing and collected 3,307,112 pounds, averaging 27.5 pounds of recyclables a month per household.
- FY14-15 - Continued successful partnership with pig farmers to compost 190,860 pounds of produce and baked goods from the commissaries.
- FY15- Donated 40,293 pounds of furniture items to non-profit organizations.



- FY15- Kicked off a 6-month pilot, in September 2015, to compost food waste at 6 dining facilities, 3 AAFES food courts and the hospital cafeteria with the long term goal of an on-post food waste processing facility.
- FY15- Conducted three Net Zero and Sustainability Component plan workshops and collaborated with military and civilian stakeholders to develop a vision for each of the Net Zero initiatives and identified sustainable approaches aligned with installation's master plan.



### Compliance Assessment and Management

*Environmental Compliance Assessment Team* - As environmental professionals, the ECAT translates regulations into a perspective that makes it easier for Soldiers, Civilians and contractors to understand how the installation's environmental policies and regulations apply to them. The 4-man team not only brings their compliance knowledge to the table but also has 75 years of military experience and understands the systems in place to best enable environmental excellence.



Dan Gomez, ECAT assessor, educates a class of Environmental Compliance Officers about shelf life extension.



Formal assessment of all activities occurs either semiannually or annually. Scoring on a 0-100 percent scale results in a red, amber or green status. Activities scoring green three consecutive times receive annual assessments and compete for the

quarterly Environmental Stewardship Award, recognizing the top civilian and military individual and activity. Out of 159 military, garrison, contractor, and tenant activities, 76 are assessed semiannually and 83 are assessed annually. During FY14-15, ECAT conducted 440 assessments, 356 courtesy assessments, 1,681 assistance visits, and trained 8,644 Soldiers, Civilians and contractors. The installation overall is in a green status, which is a testament to ECAT's track record of effectiveness.

*Environmental Training* - Fort Hood's Environmental Trainer developed several effective courses to train personnel on the environmental aspects of their activities and includes program-specific training in recycling, energy, water, natural resources, cultural resources, air quality, solid waste and hazardous material. During FY14-15, the Environmental trainer trained 478 individuals as Environmental Compliance Officers (ECOs), 147 as ECO Assistants, 248 in the ECO Refresher course and 1,183 in unit and quarterly training. ECOs serve as the backbone for an activity's environmental program, overseeing compliance in their areas of operation and providing training to all personnel.

*Air* - In FY14-15, the Air Quality Team monitored more than 1,200 permitted air emission sources to ensure compliance with 26 registered air permits and performed 577 inspections, including quarterly visible emissions monitoring. The Air Quality Team works closely with partners under the Lone Star Clean Fuels Alliance Coalition to reduce petroleum use in transportation and promote alternative fuel opportunities. In an effort to reduce air emissions further, Fort Hood installed a vehicle-to-grid project, which allows plug-in electric vehicles (EVs) to bring power to the grid. The EVs buy power from the grid, store it and sell back what power it doesn't use. Once complete, the project will have 22 charging stations.



**Zebra Mussels** - In FY14, Fort Hood's wildlife biologist was the first to discover the invasive zebra mussel in Belton Lake, which borders Fort Hood and provides the installation's drinking water supply. The biologist reported the observation the day of the discovery and sent photos to Texas Parks and Wildlife Department (TPWD). After hand-delivering the zebra mussel specimen to the Region 1 TPWD Director, the biologist immediately communicated initial protocol to Range Support Operations and MWR activities along Belton Lake. The biologist continues to train the military and civilians on zebra mussels, and published the first zebra mussel equipment cleaning protocol in Fort Hood Regulation 200-1 in April 2014.



**Community Relations**

**Cen-Tex Sustainable Communities Partnership** - The Cen-Tex Sustainable Communities Partnership implements sustainability initiatives in Central Texas through Fort Hood, and its neighboring cities - Killeen, Gatesville, Harker Heights, Copperas Cove and Belton. The partnership conducted a regional recycling feasibility study, which resulted in a single stream program implemented in Family Housing and also Copperas Cove. In FY15, Fort Hood Recycle Center started construction to upgrade its equipment to provide single stream service to military, civilian and contractor activities and will explore the possibility of expanding the service to the partnership. The partnership will complete the upgrade in spring 2016.



**Outreach** - Each year, Fort Hood hosts several school events like America Recycles Day and P2 Week, which feature a tour of the Recycle Center and a series of environmental presentations from community partners. The Earth Day school event is Fort Hood's largest outreach event featuring 24 partners educating more than 650 students each year. Fort Hood also participates in Keep Copperas Cove Beautiful's annual Eco-Harvest event, which



educates more than 500 students each year, and the City of Killeen's annual GIS Day event that educates more than 1,100 students each year. Outreach efforts at schools and community events, tours, briefings and trainings, impact more than 10,000 individuals annually.



**Boy Scouts** - In FY14, Fort Hood's wildlife biologist partnered with five local Eagle Scouts to construct 40 four-chambered bat houses. Thirty-five of these houses were installed in two Military Operations on Urban Terrain (MOUT) sites used by Soldiers for urban combat training and five more houses were installed on a DPW maintenance facility. Approximately 20,000 Mexican free-tailed bats roost and raise offspring in the MOUT buildings and the DPW facility.



**Gardens and Tree City USA** - Fort Hood's Natural Resources Branch supports and maintains the bird, bee, bat and butterfly garden, used to demonstrate the benefits of native plant use. In FY15, Fort Hood's agronomist demonstrated basic gardening to local Girl Scouts, promoting practices benefitting soil, water and biodiversity. The garden is maintained solely through support and expertise of the branch and does not require a funding stream.



Girl scouts from Fort Hood Troop 6318 help tend Fort Hood's bird, bee, bat, and butterfly garden.

In FY15, Fort Hood Family Housing, the Environmental Division and the Texas Military 4-H partnered to spearhead two community gardens in family housing and kick start a kids' gardening club. The young gardeners have volunteered 75 hours



tending the garden. The club's goal is to donate to the local food bank.



In FY15, the U.S. Forest Service recognized Fort Hood as a Tree City USA community for the 10th consecutive year. During the Arbor Day celebration, the Garrison Commander proclaimed April 2015 as Sustainable Environment Month. Fort Hood added more than 2,500 trees to the installation during the past 2 years.



*Recreational Fishing Events*

In a cooperative effort with the Conservation Law Enforcement Officers, the MWR Sportsman's Center and the Natural Resources Branch, Fort Hood actively supports fishing programs that foster enthusiasm and appreciation of the outdoors among youth, Soldiers, retirees and Civilians. This collaborative program serves over 2,500 hunters, 12,000 fishermen and 2,500 permit holders for non-consumptive recreation use, all while providing a "military training-first" approach to multiple use in military training areas. In FY15, Fort Hood's holistic wildlife plan resulted in the harvest of 257 white-tailed deer from the installation with 12 recognized as part of the Texas big game awards program. Additionally, biologists and technicians stock 3,800 lbs of catfish annually in support of 6 fishing events.



**National Environmental Policy Act**

The Fort Hood NEPA program uses an approach that integrates two NEPA team members within critical areas of the DPW, to assure all projects and programs have access to NEPA guidance. The NEPA program is assigned two specific areas-sustainable range/master planning and DPW in-house engineering projects. Early involvement of the NEPA team is the methodology used to ensure decision makers, along with master planners and project managers, understand the impacts to human health and the environment prior to making final decisions on proposed actions. The NEPA team works alongside



and attends meetings with the U.S. Army Corps of Engineers, Fort Hood DPW's Engineering and Master Planning Divisions and Fort Hood Range Operations, acting as a liaison between the Environmental Division and stakeholders.

The NEPA team works closely with the Cultural Resources Branch and is involved in the consultation process with the State of Texas and the local Native American tribes. The NEPA team also works closely with the Natural Resources Branch, providing oversight of the Integrated Natural Resources Management Plan and Endangered Species Management Plan.

Accomplishments include the following:

- FY14 - Supported the Supplemental-Programmatic EA for Army 20/20 Force Structure Realignment along with listening sessions.
- FY14-15 - Processed 949 dig permits, conducted and drafted 8 Environmental Condition of Property reports and processed 26 stationing actions.
- FY 14-15 - Conducted 414 project reviews, processed 70 site approvals and attended 98 Installation Project Review Boards.
- FY15 - Supported the Office of Energy Initiative (OEI) for the Solar and Wind renewable energy project for Fort Hood, which included NEPA oversight, review, drafting, finalizing and staffing three high priority Environmental Assessments to support the on-site solar and off-site wind project. The hybrid renewable energy project will be the largest in the Army, with a capacity of 65-85 megawatts.



The NEPA team works with internal and external stakeholders on projects, from the beginning, ensuring inclusion of environmental considerations for virtually every project.

