

10 YEARS OF SUSTAINABILITY FORT BRAGG • NORTH CAROLINA THE RIGHT WAY ... THE GREEN WAY ... ALL THE WAY



MISSION



COMMUNITY



ENVIRONMENT

10 YEARS OF SUSTAINABILITY **FORT BRAGG • NORTH CAROLINA**

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THE RIGHT WAY ... THE GREEN WAY ... ALL THE WAY

A MESSAGE FROM THE GARRISON COMMANDER



At the Environmental Sustainability Executive Conference in April 2001, the Secretary of the Army challenged participants to strive for a common vision of sustainability.

The term *sustainability* means different things to different organizations.

For the military, sustainability means that we strive to conserve and wisely use the resources we have at hand - whether they are natural or fiscal - in order to complete the mission.

In 2001, Fort Bragg was the first Army installation to publicly set goals toward that end. We did so without the benefit of guidance from the Department of the Army or the Department of Defense, as there were no policies.

Fort Bragg took that challenge to heart, and ten years later, we are a successful example of that transformation. A program once billed as *environmental* is now fully integrated across the installation. Conservation is the responsibility of all living, working and visiting Fort Bragg. Our directorates are actively engaged, and our civilian employees have voluntarily supported the cause and have entrenched these practices in their work places. Our Soldiers are increasingly aware of the holistic approach required to sustain Fort Bragg and our mission.

Through the inevitable trials, our commitment to become a sustainable community has not wavered. By integrating sustainability into our strategic plans, Fort Bragg has successfully combined the mission focus, resource stewardship, sound economic principles and quality of life to achieve the intent of the Army Triple Bottom Line of mission, community and environment - the right way ... the green way ... all the way.

A handwritten signature in black ink that reads "Stephen J. Sicinski".

COLONEL STEPHEN J. SICINSKI, GARRISON COMMANDER OF FORT BRAGG

PART

1

**HISTORY OF
SUSTAINABILITY**

HISTORY OF SUSTAINABILITY

THE BEGINNING

In 2000, Fort Bragg faced many environmental challenges which threatened to compromise the viability of its military mission. These issues included incompatible growth which constrained training exercises, aging infrastructure and a failure to comply with increasingly stringent federal environmental policies. To address these challenges, Fort Bragg became the first Army installation to incorporate sustainable concepts into comprehensive strategic planning. At the Environmental Sustainability Executive Conference in April 2001, installation and community leaders identified Fort Bragg environmental challenges and thus created ambitious goals focused on land use, air quality, water management, energy conservation, energy efficiency, green procurement, transportation and facilities as documented in the Fort Bragg Strategic Sustainability Plan.

THE ORIGINAL GOALS

- Reduce the amount of water drawn from the Little River by 70 percent by 2025, with current withdrawals of 8.5 million gallons/day.
- All water discharged from Fort Bragg will meet or exceed the North Carolina state high quality water (HQW) standard by 2025.
- Landfill waste will be aggressively reduced to zero by 2025.
- Fort Bragg will meet minimum platinum standards for all construction by 2020 and renovate 25 percent of all existing structures to at least a bronze standard by 2020 using the Sustainable Project Rating Tool.
- Fort Bragg will adopt compatible land use laws/regulations with local communities by 2005.
- Fort Bragg will reduce energy use in accordance with Executive Order 13123.
- Fort Bragg will develop and implement an effective regional community program by 2015.
- Fort Bragg will reduce the use of both gasoline and diesel in the non-tactical fleet by 70 percent by 2015 and 99 percent by 2025.
- Fort Bragg will develop an integrated environmental education program for Fort Bragg, its surrounding communities and interested parties.
- Fort Bragg will work toward 100 percent environmentally preferred purchasing by 2025 for all purchases, including government purchase card, contract and military requisition.
- Implement a scientifically based conservation program for natural and cultural resources compatible with military readiness and training.

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HISTORY OF SUSTAINABILITY SMS

In 2002, the Sustainability Management System (SMS) was developed to define significant environmental issues on the installation and their impacts on our natural resources. Based on ISO (International Standard of Organization) 14001 - the internationally recognized standard which specifies the requirements of an Environmental Management System - the SMS developed a structure for the Fort Bragg environmental policy.

THE RIGHT WAY ...

Obey environmental laws through awareness of federal, state and installation regulations.

THE GREEN WAY ...

Practice pollution prevention by choosing actions to safeguard health, the environment, financial and natural resources.

ALL THE WAY

Continue to improve through awareness of the comprehensive impacts of individual actions on the Fort Bragg mission, community and environment.

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HISTORY OF SUSTAINABILITY REGIONAL PARTNERSHIPS

In 2003, the Sustainable Fort Bragg Initiative focused on compatible partnerships in the region surrounding Fort Bragg. In order for Fort Bragg to maintain its mission and become a sustainable community, the installation - in partnership with the North Carolina Department of Environment and Natural Resources (NCDENR) - developed Sustainable Sandhills, an initiative designed to promote sustainability in the region. This partnership was the first compact between an Army installation, an environmental regulatory agency and a regional organization with the common goal of improving the economic and environmental conditions in the area.

IN OTHER WORDS ...

SUSTAINABILITY IS A TEAM EFFORT. WE ARE ALL CONNECTED. WE HAVE A MISSION TO SUPPORT EACH OTHER. IF WE DO NOT, WE CANNOT MOVE FORWARD.

MICHAEL LYNCH
DIRECTOR OF PLANS, TRAINING
AND MOBILIZATION

Since 2003, Sustainable Sandhills has developed into a non-profit organization promoting sustainability initiatives in eight North Carolina counties: Cumberland, Harnett, Hoke, Moore, Richmond, Scotland, Lee and Montgomery.

Since its inception, Sustainable Sandhills has successfully addressed significant areas of concern that benefit both Fort Bragg and the surrounding communities including:

- An Early Action Compact with the Environmental Protection Agency (EPA) and the State of North Carolina to defer non-attainment designation that would significantly impact military training on Fort Bragg.
- Development of a regional land use planning tool that influences land use around Fort Bragg created with input from eleven surrounding counties, the Regional Land Use Advisory Council and the BRAC Regional Task Force. State legislation now requires installation notification prior to new development within a five mile radius around the Fort Bragg boundary, one of the most proactive laws in the nation.
- Creation of a forum for Fort Bragg to address regional issues that affect the mission, environment and community. Fort Bragg is now viewed as an active and engaged member of the region instead of an isolated installation.

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HISTORY OF SUSTAINABILITY COMPLETE INTEGRATION

The Fort Bragg sustainability program was integrated into the Garrison Strategic Plan in 2005 to address the continuing challenges to the mission and secure the viability of the post. Policies were updated to ensure that all Soldiers and Garrison staff adhere to the Triple Bottom Line of Mission, Environment and Community and apply these principles not only to specific initiatives but also to their daily operations. The strategic planning process fosters a sustainability ethic through the entire installation. In 2006, the Garrison Command adopted an integrated, cross-functional approach to strategic goals - goals that would require a unified effort and investment by all Garrison leaders and the Fort Bragg population. Among the five goals formulated, Garrison Goal One addresses sustainability.

GARRISON GOAL ONE

A sustainable community meeting the needs of the Soldier today, tomorrow and forever

There are six objectives under Garrison Goal One: land use, facilities, materials, utilities (energy and water), transportation and culture. To support each of these objectives, sustainability planners - a key asset to the initiative - were functionally integrated into the Garrison directorates to serve as the primary change agents for translating sustainability concepts into practical applications.

Over the next four years, the Sustainable Fort Bragg Initiative served as the master plan for the Army Strategy for the Environment and set the standard for Army sustainability values.



IMCOM

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HISTORY OF SUSTAINABILITY

THE OBJECTIVES

1.1 LAND USE

Proponent: Directorate of Plans, Training and Mobilization (DPTM)

Create and enhance sustainable training lands and urban areas to ensure military readiness and promote compatible growth of the surrounding communities.

1.2 FACILITIES

Proponent: Directorate of Public Works (DPW)

To become the model sustainable military community to the world by using sustainable principles throughout the life cycle of all facilities and supporting infrastructure (FSI).

1.3 MATERIALS

Proponent: Directorate of Family and Morale, Welfare and Recreation (DFMWR)

Achieve zero waste through acquisition and management of materials and commodities which, throughout their life cycle, create no additional waste and require no resources for their disposal.

1.4 UTILITIES (ENERGY AND WATER)

Proponent: DPW

Supply reliable utility services and infrastructure with no negative impacts while aggressively reducing overall demand.

1.5 TRANSPORTATION

Proponent: Directorate of Logistics (DOL)

Build a sustainable world-class ground transportation network, providing a seamless transition between multiple modes of travel while reducing harmful emissions by 2030.

1.6 CULTURE

Create a culture which fosters a sustainable lifestyle to enhance the quality of life of the Fort Bragg community.

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PART

2

**SUCCESS IN
SUSTAINABILITY**

SUCCESS IN SUSTAINABILITY LAND USE

LAND RECLAMATION

FORT BRAGG ARBOR BOARD

AUDUBON INTERNATIONAL CERTIFIED GOLF COURSES

TREE CITY USA

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SUCCESS IN SUSTAINABILITY LAND USE

LAND RECLAMATION

The Land Use Team developed multiple initiatives related to land reclamation. With a goal of returning property to the inventory of viable land, the Installation Restoration Program (IRP) identified Solid Waste Management Units that require *no further action*. This program is funded through Army Environmental Command and has returned a total of 650 acres to the real property inventory. The majority of this land is in the cantonment area, where developable land is at a premium.

Through the Integrated Training Area Management (ITAM) program, Fort Bragg has identified excess firebreaks and trails to be naturalized and rehabilitated in order to reduce erosion and increase reusable training lands. As of 2010, 40 percent of the excess firebreaks have been naturalized, returning 34 acres of land to the post for training.

Perhaps the most important land reclamation success on Fort Bragg occurred in early January 2009 when the Environmental Division and DPTM celebrated the recovery of the endangered red cockaded woodpecker (RCW) by removing buffer signs surrounding 171 RCW clusters and the protective bands marking approximately 1,800 cavity trees.

Training was limited within 200 feet of all RCW clusters due to regulations such as the Endangered Species Act. As a result of recovery efforts and monitoring by Fort Bragg, many of the training restrictions have been eased or eliminated. In 2005, Fort Bragg and surrounding lands of the Sandhills East populations became the second primary core population at recovery level with an estimated 368 potential breeding groups. In accordance with the recovery plan, Army guidelines and the Endangered Species Management Component, major monitoring efforts will continue for a minimum of four years to ensure the health, stability and growth of the RCW population. At that point, the remaining restrictions will be removed.

IN OTHER WORDS ...

WHEN WE WERE IN FULL TRAINING RESTRICTIONS, SOLDIERS COULD DO NOTHING. IF YOU ENTERED A WOODPECKER CLUSTER, YOU COULD ONLY WALK THROUGH IT. YOU COULD NOT DIG. YOU COULD NOT USE A GENERATOR. YOU COULD NOT BE IN THE MIDDLE OF A FIRE FIGHT WITH BLANKS OR USE PYROTECHNICS OR SMOKE. YOU PHYSICALLY HAD TO STOP TRAINING.

MICHAEL LYNCH • DIRECTOR OF PLANS, TRAINING AND MOBILIZATION

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SUCCESS IN SUSTAINABILITY LAND USE

THE FORT BRAGG ARBOR BOARD

The Fort Bragg Arbor Board convened in late 2008 as a multifunctional committee to review landscape plans and develop the necessary policies to standardize landscaping and tree planting on the installation. The board is comprised of a variety of individuals with expertise in architecture, wildlife biology, historic properties management, engineering, forestry and grounds maintenance. In addition to revising the landscaping guidelines for the Installation Design Guide (IDG), the board drafted several policies and planting lists in 2009, such as the Fort Bragg Preferred Planting List, the Fort Bragg Tree Removal/Mitigation Policy, the Fort Bragg Turf Requirements and the Fort Bragg Bioswale Planting List. The tree mitigation policy is the first policy on the installation to address carbon sequestration values. The driving force behind the Arbor Board is the shared passion to protect the environment in support of Fort Bragg Garrison Goal One.

ARBOR BOARD RECEIVES STATE AWARD FOR EXCELLENCE

In recognition for its efforts to preserve and protect natural resources, the Fort Bragg Arbor Board received the 2010 North Carolina Urban Forestry Award for Outstanding Tree Board or Urban Forestry Committee. The Urban Forestry Award program rewards cities, towns, organizations, businesses and individuals for outstanding efforts to protect and enhance community forests and raise awareness about the importance of urban forestry projects. Winners were selected by a panel including the North Carolina Division of Forest Resources Urban Forestry staff and members of the North Carolina Urban Forest Council. The Urban Forestry Award is an achievement that reflects the Fort Bragg Arbor Board passion for, and dedication to, the sustainability of the post and its mission.

IN OTHER WORDS ...

IT IS OUR VISION THAT THE ENVIRONMENT OF FORT BRAGG WILL REFLECT A SUSTAINABLE APPROACH BY INTEGRATING CIVIL ENGINEERING, LANDSCAPE DESIGN, STEWARDSHIP AND CONSERVATION THAT TRULY EMBRACES A ROBUST, FULLY FUNCTIONAL ECOSYSTEM OF NATURAL BIODIVERSITY.

FORT BRAGG ARBOR BOARD CREDO

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SUCCESS IN SUSTAINABILITY LAND USE

AUDUBON INTERNATIONAL CERTIFIED GOLF COURSES

In 2004, Ryder Golf Course on Fort Bragg became the first Army golf course to achieve environmental program certification through the Audubon International Cooperative Sanctuary Program for Golf Courses. Stryker Golf Course achieved certification in 2005. Requirements for full certification include:

- environmental planning
- wildlife and habitat management
- chemical use reduction and safety
- water conservation
- water quality management
- outreach and education



TREE CITY USA

Since 2005, Fort Bragg has been honored as a Tree City USA.

The National Arbor Day Foundation recognizes Tree City USA communities for their commitment to environmental improvements and tree maintenance.

Fort Bragg has received the Tree City USA Growth Award for four consecutive years for progress in these areas:

- community forestry programs
- education and public relations
- continuing education for tree managers
- planning and management
- municipal funding
- tree inventory and analysis

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SUCCESS IN SUSTAINABILITY FACILITIES

LEED INTEGRATION

CERTIFIED PROFESSIONALS

LEED FACILITIES

INTEGRATED DOCUMENTATION

LEED IN RENOVATION AND MAINTENANCE

TRAINING

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SUCCESS IN SUSTAINABILITY FACILITIES

INTEGRATING LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN

Facility construction, operation, maintenance and demolition are not only fiscally intensive - they also lead to numerous environmental impacts to include land disturbance, solid waste, air quality concerns and resource depletion. While early adoption of the United States Army Corps of Engineers (USACOE) Sustainable Project Rating Tool provided the foundation, the transition to the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) rating system in 2006 provided the momentum that drives the Facilities Team today. While Army policy dictated compliance with LEED on new projects and major renovations, full knowledge of LEED standards was minimal in 2006. Through a series of education and awareness programs, the team successfully reached out to designers, project managers and customers to incorporate sustainability guidelines in design and construction. Now, designers and project managers can more easily implement sustainable design in smaller projects as well.

CERTIFIED PROFESSIONALS

To further strengthen LEED integration, Fort Bragg developed a pool of LEED certified professionals. In early 2007, the Facilities Team arranged for the USGBC to present several training sessions on Fort Bragg for project managers, designers, USACOE engineers and members of Sustainable Fort Bragg. As a result of the initial training, seven individuals received certification as LEED accredited professionals.

As an installation, Fort Bragg has one of the highest concentrations of USGBC credentialed members. In 2010, another series of training sessions more than doubled the number of LEED professionals. Today, the installation boasts 17 LEED professionals to ensure implementation of LEED in various projects throughout the post.

IN OTHER WORDS ...

HIGH PERFORMANCE BUILDINGS ARE CRITICAL TO COST EFFECTIVE LIFE CYCLE MANAGEMENT OF OUR INFRASTRUCTURE AND NATIONAL ENERGY SECURITY.

KATHERINE HAMMACK

ASSISTANT SECRETARY OF THE ARMY FOR INSTALLATIONS, ENERGY AND THE ENVIRONMENT

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SUCCESS IN SUSTAINABILITY FACILITIES

LEED FACILITIES

In accordance with a 2008 Army mandate, Fort Bragg initiated the construction of buildings that meet LEED Silver standards. Furthermore, installation engineers and designers strive to construct facilities that are above and beyond the minimum requirements.

In 2010, a new community emergency services station was the first facility constructed to meet LEED Platinum standards on Fort Bragg. The LEED facility optimizes energy and water use. Energy conservation and subsequent savings are achieved through several lighting strategies. The north/south orientation of the building and window placement enables the LEED facility to harvest natural light in over 90 percent of all regularly occupied spaces. Sensors on artificial light sources automatically read the level of light and supplement when required - primarily in the morning and evening hours. Using the ambient and consistent temperature of the ground, geothermal heat pumps heat and cool the facility. A transpired solar collector heats air passing between the radiant heat absorbing outer wall and the structural wall of the building. The heated air is then released through the conventional ventilation system. Solar collectors on the roof use the energy of the sun to heat water for use in showers, the kitchen and the laundry room.

FORT BRAGG: "LEEDING" THE WAY

According to a 2008 Department of the Army executive order to installations, all new construction on post must be LEED Silver standard.

Fort Bragg is a leader in the Department of Defense (DoD) among installations committed to LEED and to sustainable design.

Fort Bragg currently has 90 LEED projects registered with the USGBC.

Along with the dual flush toilets and low flow fixtures installed to achieve maximum water efficiency, the LEED facility collects rain water for use in toilet flushing and vehicle washing.

The landscaping at the facility features native, drought-resistant plants that require minimal irrigation.

With all of these water conserving features, the LEED facility consumes 83 percent less potable water than a comparable structure.

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SUCCESS IN SUSTAINABILITY FACILITIES

LEED DOCUMENTATION

The cross-functional membership of the Facilities Team incorporated sustainable design and development language and LEED functionality in the Fort Bragg IDG, the Transformation Request for Proposals (TRFP) and other contractual documents that feed contract preparation and execution. The Team also developed three key guideline documents to assist project managers in their efforts to meet sustainable standards:

- The Project Sustainability Requirements Checklist
- Recommendations for Storm Water Management Soils Investigation
- The Fort Bragg LEED NC Credit Preference Checklist.

Modeled on the EPA Green Buildings Checklist, the Project Sustainability Requirements Checklist is comprised of 69 questions to provide awareness of and guidance on specific federal sustainability requirements. The yes or no response to those questions provides additional requirements and information. The Recommendations for Storm Water Management Soils Investigation document outlines specific guidance to facilitate pre-development hydrology of a site in compliance with the Energy Independence and Security Act (EISA) 2007 Section 438. This section of EISA requires federal agencies to implement site planning, design, construction and maintenance strategies to maintain or restore the natural flow and infiltration of storm water. The Fort Bragg LEED NC Credit Preference Checklist provides clear guidance on the LEED credits Fort Bragg requires on all new construction, ensuring LEED requirement efforts are approached in concert with other federal sustainability requirements. The distribution of these documents to designers and architectural and engineering firms at initial design charrettes has proved effective in achieving energy and water efficient buildings.

IN OTHER WORDS ...

THE ARMY COMMITMENT IS IMPORTANT TO OUR NATION BECAUSE WE ARE HELPING TO TRANSFORM THE CONSTRUCTION INDUSTRY JUST BY VIRTUE OF OUR DEMAND FOR SUSTAINABLE DESIGN AND CONSTRUCTION.

JUDY MILTON • ARCHITECT, ARMY CORPS OF ENGINEERS, SAVANNAH DISTRICT

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SUCCESS IN SUSTAINABILITY FACILITIES

LEED IN RENOVATION AND MAINTENANCE

LEED for existing buildings provides an opportunity to certify an older building through major renovation. The Sustainability Tracking and Audit Report System (STARS) was developed by the Facilities Team for the implementation of an operations and maintenance based existing buildings program. By incorporating sustainable technologies and concepts in all renovation and repair projects, the existing facilities on Fort Bragg become green one step at a time - an approach similar to how facility Sustainment, Restoration and Modernization (SRM) is funded. Data on improvements and remodeling will be maintained in the system to augment and facilitate future renovation decisions relevant to specific buildings as well as a repository for accumulated LEED points.

IN OTHER WORDS ...

THE ARMY IS WORKING TO ESTABLISH SUSTAINABILITY AS A LONG RANGE VISION THAT ENABLES IT TO MEET ITS MISSION TODAY AND INTO THE FUTURE. FORT BRAGG IS LEADING THE ENTIRE DEPARTMENT OF DEFENSE AND MUCH OF THE FEDERAL GOVERNMENT IN THE MARCH TO SUSTAINABILITY BY BUILDING GREEN, BUYING GREEN AND GOING GREEN.

TAD DAVIS • CHIEF EXECUTIVE OFFICER, US ARMY RESERVE COMMAND

LEED EDUCATION AND TRAINING

Education and training on new techniques, technology and new applications of existing technology are essential to continued success. The Sustainable Facilities Education Series provides a wide variety of learning opportunities. Topics range from facility energy modeling to green roofs, storm water management to ground coupled heat pumps, solar domestic hot water to high efficiency plumbing fixtures and much more. The education series offers presentations, demonstrations, static displays and a beneficial exchange of information, successes and lessons learned.

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SUCCESS IN SUSTAINABILITY MATERIALS

ELIMINATION OF EXPANDED POLYSTYRENE

GREEN LODGING PROGRAM

GREEN PROCUREMENT

GREEN DIRECTORATE

BRAGG ABOUT RECYCLING

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SUCCESS IN SUSTAINABILITY MATERIALS

ELIMINATION OF EXPANDED POLYSTYRENE

With the guidance of the Fort Bragg Garrison Commander, the Materials Team partnered with DOL and DFMWR to eliminate the use of expanded polystyrene (EPS) on the installation, as EPS containers cannot be recycled or composted. The program encourages the procurement and use of environmentally preferred alternatives. As a result, the Self Service Supply Center (SSSC), DOL, Womack Army Medical Center (WAMC) and DFMWR now offer containers with recycled content, recyclable containers or compostable, biobased containers. By reducing the amount of waste on the installation and supporting green procurement practices, Fort Bragg purchasing power drives green markets, thus making environmentally preferred products price competitive.

GREEN LODGING PROGRAM

The Materials Team successfully partnered with Fort Bragg Army Lodging, the Bragg About Recycling Team and the Utilities Team to develop a Green Lodging Program. Fort Bragg Army Lodging facilities implemented various initiatives in an effort to alter patron and staff behavior through education and outreach.

Green lodging operations include:

- Replacement of traditional lighting with energy efficient alternatives
- Establishment of recycling bins
- Replacement of EPS containers with environmentally preferred options



In addition, Army Lodging facilities provide displays for guests with information including *Be Energy Smart, Use Water Wisely, Give Your Vehicle a Brake and Recycle*.

Residents are encouraged to conserve energy and water, use alternative transportation and recycle during their stays.

The Green Lodging Program is the first of its kind at any military installation and has received a positive response from employees as well as patrons.

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SUCCESS IN SUSTAINABILITY MATERIALS

GREEN PROCUREMENT

In efforts to achieve the original sustainability goal of net zero waste on Fort Bragg, the Materials Team has increased green product inventory. The Green Procurement Team was re-established in August 2009 as a cross-functional team with representatives from military units and civilian organizations.

THE FORT BRAGG GREEN PROCUREMENT TEAM

- Military Installation Contracting Command
- United States Army Special Operations Command (USASOC)
- DOL
- DPW
- General Services Administration (GSA)
- Installation Safety Office (ISO)
- SSSC
- DFMWR
- Defense Logistics Agency (DLA)

The Green Procurement Team works to identify potential waste reduction opportunities either by eliminating items that are considered disposal issues or replacing those items with less environmentally invasive material.

The Materials Team partners with DLA, GSA and the SSSC on Fort Bragg to increase the amount of environmentally preferred products available for Soldiers. These items include compact fluorescent lights (CFLs), biobased ink, recycling bins, less hazardous materials and recycled content or biobased office supplies. In FY10, the SSSC added 30 green products to the inventory.

Through the GSA Global Supply, post personnel purchased \$1,683,431 in recycled materials through August FY10.

In 2009, the Green Procurement Team hosted training administered by the Center for Health Promotion and Preventative Medicine. Training was organized into two sessions: one focused on government purchase card (GPC) holders and the other focused on representatives from contracting.

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SUCCESS IN SUSTAINABILITY MATERIALS

GREEN PROCUREMENT - CONTINUED

Currently, a module focused on green procurement is offered at the quarterly GPC holder training. The module includes an overview of federal mandates and policies that require green procurement, examples of green procurement practices and instructions on how to purchase environmentally preferred products. Green procurement is also encouraged through GSA specific green procurement training, which is also offered on a quarterly basis. Approximately 300 individuals received green procurement training in FY10.

The Materials Team partnered with DLA to promote green procurement throughout the DoD. The organizations coordinated to create the Fort Bragg segment of *Why Buy Green*, a film featuring green procurement practices and applications across several branches of the DoD.

The Team is also working with DLA and the National Defense Center for Energy and the Environment (NDCEE) Green Product Substitution Demonstration and Evaluation project. Several sites have been identified for testing opportunities for hazardous materials that could be substituted with environmentally preferred products, specifically biobased products recommended by the United States Department of Agriculture. If the products meet military specification requirements and are proven to perform following user evaluations, DLA/NDCEE will include them in the National Stock Number system.

GREEN DIRECTORATE PROGRAM

The Materials Team implemented the Fort Bragg Green Directorate Program to encourage civilian and military organizations on the installation to integrate sustainable practices into daily operations and educate personnel about the benefits of environmentally conscious business practices and their impacts on the mission. The program was adapted from the Sustainable Sandhills Green Business Program, which encourages environmentally sustainable business practices in the region.

IN OTHER WORDS ...

GREEN IS THE NEW BLACK.

FIRST SERGEANT RUSSELL ZIRKLE
MOBILIZATION/DEMOBILIZATION BRIGADE
A CERTIFIED GREEN DIRECTORATE

To become certified as a Green Directorate, organizations must implement specific efforts to reduce waste, promote recycling and environmentally preferred purchasing, conserve energy, improve energy efficiency, conserve water and enhance air quality. The organization pursuing certification may choose from a suggested list of initiatives

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SUCCESS IN SUSTAINABILITY MATERIALS

GREEN DIRECTORATE PROGRAM - CONTINUED



which support their mission and apply creative measures in order to meet the requirements of the program.

The program will be revised to *Version 2.0* in 2011 to evolve with the developing sustainability goals on the installation. In addition, the program name will be revised to appeal to both civilian organizations and military units.

CERTIFIED GREEN DIRECTORATES

- DPTM - Headquarters
- DOL - Headquarters
- DPW - Headquarters
- DFMWR - Headquarters
- ISO
- DOL ITT
- Range Control
- DPW - Environmental Division
- DPW - Engineering and Master Planning Divisions
- Mobilization/Demobilization Brigade
- Directorate of Human Resources

The following organizations are currently pursuing certification: Directorate of Emergency Services - all buildings, Public Affairs Office, DPW - Operations and Maintenance Division, Special Warfare Center and School, Soldier Support Center, Garrison Command Wing at XVIII Corps Headquarters, Airborne Lanes and the Airborne and Special Operations Test Directorate.

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SUCCESS IN SUSTAINABILITY MATERIALS

BRAGG ABOUT RECYCLING

Bragg About Recycling diverts recyclable materials from the municipal solid waste and the construction/demolition waste streams. The program maintains a recycling facility within the DPW campus, at satellite sites throughout the installation and at the Fort Bragg landfill.

Hazardous wastes, industrial wastes and municipal solid wastes are managed through regulatory compliance in accordance with the Resource Conservation and Recovery Act as well as through an integrated solid waste management approach to disposal and diversion.

Fort Bragg operates a Type 1 composting facility under a state issue demonstration permit. This facility processes yard waste into a usable commodity. Currently, compost is used at the landfill with plans to expand the use of compost throughout the installation.

LEED requirements are applied to construction projects for additional waste diversion and disposal cost savings. Contractors divert construction and demolition materials including concrete, scrap metal, asphalt, brick and clean wood from the landfill. Wood is chipped for mulch. Crushed concrete is used on the installation for erosion mitigation and construction projects. Most construction sites on post are diverting an average of 50 percent to 75 percent - but as much as 83 percent - of their construction debris to be recycled.

BIODIESEL : A WASTE TO ENERGY INITIATIVE

The Environmental Compliance Branch (ECB) is developing a biodiesel program as an innovative waste-to-energy initiative and a means to fulfill Executive Order 13154 requiring the reduced use of petroleum based fuels. Since May 2010, oils from installation dining facilities, housing collection points, recycling drives and the Fort Bragg Recycling Center are collected and then processed. The processor converts 50 gallons of oil into 45 gallons of biodiesel in an average of 72 hours. The Recycling Center can produce biodiesel at a rate of \$1.33 per gallon. Since Ultra Low Sulfur Diesel (ULSD) is currently an average of \$3.80 per gallon, the production of biodiesel results in an average savings of \$2.47 per gallon of fuel excluding labor costs. The equipment at the Recycling Center and some unit owned heavy equipment operate on the biodiesel produced at the Fort Bragg Recycling Center.

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SUCCESS IN SUSTAINABILITY MATERIALS

HAZARDOUS WASTE RECYCLING

The Fort Bragg Hazardous Waste Team strives to reduce the amount of hazardous materials in the Fort Bragg inventory and to replace them with biobased, recycled content or less hazardous materials. They continue to test and reissue military batteries for training exercises. Over \$500,000 has been saved in battery purchase costs by reissuing batteries with remaining electrical charge. Oil filters are drained, then the oil and filter are both recycled. Mobile parts washers are also more environmentally and economically sound.

ELECTRONIC WASTE (E-WASTE) RECYCLING

The Fort Bragg ECB hosts quarterly E - Waste drives to increase the diversion of E - Waste. Computers, televisions, telephones and other personal electronics are accepted. At the most recent E - Waste drive in January 2011, over nine thousand pounds of E - Waste was collected - the most impressive amount to date. The ECB has been nationally recognized for its efforts to recycle E - Waste with an Electronics Reuse and Recycling Challenge Award in 2008.

QUALIFIED RECYCLING PROGRAM

The Qualified Recycling Program (QRP) is a federally recognized program which reclaims materials from the solid waste stream and retains revenues for reinvestment in diversion technologies and installation improvement initiatives. In 2009 and 2010, revenues generated from the QRP exceeded \$1 million. The program has funded over \$1 million in sustainability projects including urban reforestation, energy efficiency improvements and green procurement training. Through the QRP incentives program, units and organizations on the installation deliver their recyclables to the Recycling Center in exchange for vouchers that are used at morale, welfare and recreation facilities. To date, over 200 organizations on the installation participate in the QRP incentives program and over \$48,600 worth of DFMWR vouchers have been issued to participating organizations.

IN OTHER WORDS ...

RECYCLING IS THE FIRST STEP IN CHANGING THE CULTURE OF AN ENVIRONMENT TOWARD ENVIRONMENTALLY PREFERABLE PRACTICES.

TIM NANCE • QUALIFIED RECYCLING PROGRAM MANAGER

10 YEARS OF SUSTAINABILITY
FORT BRAGG • NORTH CAROLINA

SUCCESS IN SUSTAINABILITY UTILITIES

UTILITY MONITORING AND CONTROL SYSTEM

UTILITY METERS

CENTRAL ENERGY PLANTS

THERMAL ENERGY STORAGE

RENEWABLE ENERGY

WATER CONSERVATION

LOW IMPACT DESIGN AND STORM WATER MANAGEMENT

WATER QUALITY

**10 YEARS OF SUSTAINABILITY
FORT BRAGG • NORTH CAROLINA**

SUCCESS IN SUSTAINABILITY UTILITIES

UTILITY MONITORING AND CONTROL SYSTEM

Fort Bragg has an average annual energy cost of approximately \$50 million. The Utility Monitoring and Control System (UMCS) is a tool to conserve energy and protect financial resources for Fort Bragg. Selected facilities are connected to a central server at the Building Operations Command Center. Energy use information is gathered through the UMCS. Subsequently, this data is analyzed and distributed to facility occupants to raise awareness about power consumption and encourage energy efficient practices. The advanced warning system alerts the Energy Management Program in the event of equipment malfunction or failure, allowing for a proactive rather than reactive response to system maintenance issues. Studies show that once UMCS is installed and programs are in place to properly monitor and react to energy conservation opportunities, the system will yield a 15 percent to 20 percent energy conservation.

UTILITY METERS

On any military installation, metered facilities are the exception rather than the rule. Even at Fort Bragg, metering has been historically intermittent. In thousands of facilities on the installation, there are only a few meters which read natural gas, water or electrical usage. The few existing meters apply to tenants who are considered customers of the installation and have an obligation to reimburse the government for energy consumption. The military and government organizations which reside on post are not aware of the actual costs of their activities. Through an awarded metering project, hundreds of facilities are scheduled for installation of utility meters which will measure natural gas, electricity or a combination of natural gas and electricity.

IN OTHER WORDS ...

*IF YOU CAN MEASURE IT,
YOU CAN MANAGE IT.*

JENNIFER MCKENZIE • ENERGY MANAGER

THE ENERGY BILL

The average annual energy cost for Fort Bragg is \$50 million. In FY09, costs decreased by \$4 million as a result of energy conservation efforts.

Approximately 100 additional facilities are funded for meter installation in FY11. These facilities are more than 29,000 square feet, or they are reimbursable customers. The new metering hardware, which is compatible with the UMCS, is a smart meter device that will have the capability to read various metering points. The metering will allow the installation to not only read utility consumption but to also leverage and create mock billings.

10 YEARS OF SUSTAINABILITY
FORT BRAGG • NORTH CAROLINA

SUCCESS IN SUSTAINABILITY UTILITIES

CENTRAL ENERGY PLANTS

Federal goals and mandates require facilities to be at least 40 percent more efficient than the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) 90.1 baseline. A life cycle cost analysis is also required to determine the most cost effective options. Due to concerns regarding the ability of architects and engineers to make accurate comparisons between stand-alone and central energy plant efficiencies, Fort Bragg and the Construction Engineering Research Laboratory (CERL) initiated a comprehensive analysis and developed a long term strategy that supported district heating and cooling for high density areas. The study demonstrated the central plant advantages both in terms of efficiency with cogeneration and high efficiency water cooled chillers plus the ability to economically utilize load shifting and fuel switching to control utility costs. The 20 year life cycle cost analysis demonstrates that centralized heating energy cost savings equal 79 to 83 percent with a total savings of 10 to 31 percent. Centralized cooling energy cost savings equal 43 to 65 percent with a total energy savings of 18 to 49 percent.

THERMAL ENERGY STORAGE

With peak energy demand at 130 megawatts and a real time pricing rider in the rate structure from the power generation company, Fort Bragg has a vested interest in shifting electrical load to an off-peak time. Thermal Energy Storage (TES) is a viable solution for the rapidly increasing capacity needs, especially with the high density population on the installation. The TES refers to a variety of technologies that store energy in a thermal reservoir for later use. Fort Bragg utilizes a simple chilled water system that features lower cost, prolonged life and less maintenance. At night, the system produces a surplus of cold water for storage. During the day, it is able to meet the normal demand or augment production by circulating water through the 2.2 million gallon cold water tank to extract additional cooling capacity to the area central energy plant - thus shifting energy use from peak hours to off-peak hours. The system runs in cold water mode for six to eight hours per day and in circulating mode for four to six hours per day. Although capital expenditures are significant, the additional capacity and off-peak operation are justifications for the system. There are plans to construct additional chilled water storage tanks as the system provides additional security for operations during potential short term power disruptions.

10 YEARS OF SUSTAINABILITY
FORT BRAGG • NORTH CAROLINA

SUCCESS IN SUSTAINABILITY UTILITIES

RENEWABLE ENERGY

To face the continuing challenges of energy security and sustainability, the Army has established a goal of net zero energy consumption by 2030. Thus, installations must produce as much energy as they consume. In order to fulfill this objective, the Fort Bragg Energy Team is aggressively pursuing renewable energy technologies to incorporate into its energy portfolio. For FY11 and beyond, these technologies include:

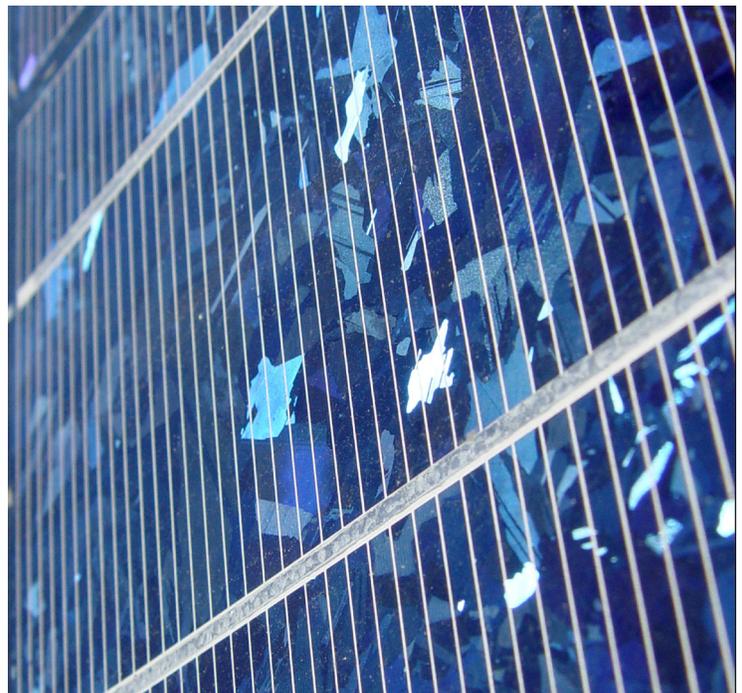
- solar thermal heating for pools
- photovoltaics at the building level
- ground source heat pumps
- solar domestic hot water
- transpired solar collectors

To meet the requirement for a net zero energy installation, Fort Bragg will also produce renewable energy on a grand scale. The installation is developing projects for district ground source heat pumps, hydroelectric energy, waste-to-energy initiatives and biomass power generation. No one technology will support installation energy needs. Instead, multiple renewable energy technologies will push the installation closer to its net zero energy goal.

IN OTHER WORDS ...

SOLAR TECHNOLOGY IS DEPLOYABLE. IT IS ACCESSIBLE, AND IT CAN PROVIDE LONG TERM SOLUTIONS TO CURRENT ENERGY NEEDS. AS THE PRICE OF CONVENTIONAL ENERGY RISES, ECONOMIES OF SCALE WILL ENSURE THAT THE COST OF SOLAR ENERGY WILL COME DOWN. THIS TECHNOLOGY IS SOMETHING WE CAN IMPLEMENT NOW WITH MINIMAL ADJUSTMENTS TO THE SYSTEMS.

PAUL HORA
ENERGY AWARENESS PROGRAM



10 YEARS OF SUSTAINABILITY FORT BRAGG • NORTH CAROLINA

SUCCESS IN SUSTAINABILITY UTILITIES

FORT BRAGG ENERGY SPECIFICATION

To consolidate the abundance of information and regulations for all aspects of construction, renovation and building operations on the installation, the Energy Team created the Fort Bragg Energy Specification. The Team researched many specifications, and they reviewed comments from local industry and standards for industry. They then compiled this information into a comprehensive, inclusive, single source document. The resulting 1,000 plus page Energy Specification is linked to the IDG. The Energy Specification is updated periodically to stay current with industry and regulatory changes, and it is available to architect and engineer firms to provide detail on the energy specifications unique to Fort Bragg.

WATER CONSERVATION

Fort Bragg maintains an installation-wide, year-round water conservation policy. The policy is unique in outlining the distinct phases of water conservation - ranging from the least restrictive practices during non-drought conditions to the most stringent practices when potable water use is significantly restricted. The policy also identifies water related activities across commands and directorates and the steps to which those activities will conform to meet the various levels of conservation. Units and organizations, installation motor pools, tactical vehicle wash facilities and residential communities are all responsible for reduction in water usage.

To ensure responsible use of installation water resources in field applications, Fort Bragg established controlled points with an electronic key card system to monitor the use of potable water. To provide water for uses such as dust suppression, a non-potable water point was established at a centrally located lake within the cantonment. By separating non-potable water supplies from potable water supplies, the quantity of potable water consumed is reduced, thus conserving resources and energy. Permanent irrigation using potable water is prohibited on military construction projects. Temporary, above-ground irrigation is permitted for a period of one year to help establish vegetation. To further reduce large quantity use of potable water, use of fire hydrants beyond emergency services requires a permit.

To increase awareness of water conservation, the Water Team implemented an education campaign to create awareness of the Fort Bragg Water Conservation Policy. Numerous documents regarding installation water sources, water treatment, water usage and water conservation were published. As a result, the installation achieved an immediate 30 percent reduction in potable water usage.

10 YEARS OF SUSTAINABILITY
FORT BRAGG • NORTH CAROLINA

SUCCESS IN SUSTAINABILITY UTILITIES

LOW IMPACT DEVELOPMENT STORM WATER MANAGEMENT

Low impact development (LID) - where natural hydrology and infiltration of storm water is emphasized - is the preferred method of storm water management on Fort Bragg. Storm water detention basins with native vegetation, rain barrels, rain gardens, infiltration channels, cisterns and permeable pavers are common LID practices on Fort Bragg. These practices retain storm water on site and allow for infiltration to replenish aquifers. Diverted storm water can be harvested for purposes such as landscape irrigation and toilet flushing. Rain water reuse is prominent on several facilities on Fort Bragg.

Recycling storm water can dramatically reduce the consumption of potable water and reduce the energy usage and carbon dioxide emissions associated with treating water. By implementing LID, Fort Bragg reduced storm water run off by as much as 70 percent.

IN OTHER WORDS ...

HIGH QUALITY WATER IS MORE THAN THE DREAM OF THE CONSERVATIONISTS, MORE THAN A POLITICAL SLOGAN. HIGH QUALITY WATER, IN THE RIGHT QUANTITY AT THE RIGHT PLACE AT THE RIGHT TIME, IS ESSENTIAL TO HEALTH, RECREATION AND ECONOMIC GROWTH.

SENATOR EDMUND MUSKIE



WATER QUALITY

On Fort Bragg, an erosion control plan is required for any land disturbance. Members of the Water Team collaborated directly with the state land office to develop a submittal procedure for erosion and sedimentation control plans for Fort Bragg projects. As part of the agreement, the state will not accept an erosion and sedimentation control plan prior to review and acceptance by the Fort Bragg Water Management Branch. Fort Bragg requires that the erosion control plans address all storm water discharges to the watershed and use the 25 year storm event for all design calculations.

10 YEARS OF SUSTAINABILITY
FORT BRAGG • NORTH CAROLINA

SUCCESS IN SUSTAINABILITY **TRANSPORTATION**

ALTERNATIVE FUELING STATION

SUSTAINABLE SHUTTLE

ALTERNATIVE TRANSPORTATION PLAN

MED PLAZA

COMBINED AIR TEAM

10 YEARS OF SUSTAINABILITY
FORT BRAGG • NORTH CAROLINA

SUCCESS IN SUSTAINABILITY TRANSPORTATION

ALTERNATIVE FUELING STATION

In efforts to fulfill the Clean Air Act and Executive Orders to reduce emissions and our dependency on foreign oil, the Transportation Team partnered with DOL, DPW, the Army Petroleum Center (APC) and Defense Energy Supply Command (DESC) to establish an alternative fueling station in 2010. The station dispenses E85 Ethanol and B20 biodiesel for flexible fuel vehicles in the GSA fleet, and it offers ULSD for non-tactical, non-flexible fuel emergency vehicles. The alternative fuel station features:

- reflective fueling surfaces and station canopy which minimize the heat island effect
- solar powered perimeter lighting
- storm water retention
- state-of-the-art oil and water separators.

The facility is centrally located among a majority of the installation motor pools, allowing for refueling as the mission requires. Fueling at the station on post is more cost effective than fueling at stations off of the installation. Thus, the alternative fueling station conserves financial resources as well as environmental resources.

IN OTHER WORDS ...

THE ALTERNATIVE FUELING STATION IS OUR WAY OF MEETING PRESIDENTIAL DIRECTIVES AND MANDATES TO REDUCE OUR DEPENDENCY ON FOREIGN OIL AND COMPLY WITH THE CLEAN AIR ACT - NOT JUST ON FORT BRAGG BUT WITHIN THE COMMUNITIES SURROUNDING FORT BRAGG.

TIM SHEA
DIRECTOR OF INSTALLATION TRANSPORTATION

The reduction of petroleum consumption from the alternative fueling station is projected at 405,000 gallons annually. Carbon dioxide emissions savings is projected at approximately 8.0 million pounds or four thousand tons annually.

These calculations are based on the Transportation Motor Pool fleet of approximately one thousand vehicles, but these estimates will prove to be conservative as the government vehicle population grows.

10 YEARS OF SUSTAINABILITY
FORT BRAGG • NORTH CAROLINA

SUCCESS IN SUSTAINABILITY TRANSPORTATION

SUSTAINABLE SHUTTLE

The Fort Bragg Sustainable Shuttle represents a \$6.2 million investment in emissions reductions and a step toward the resolution of Fort Bragg traffic issues. A fleet of B20 powered hybrid electric vehicles serve separate shuttle routes that connect primary points of interest on the installation including barracks, post exchanges, WAMC, the Soldier Support Center, dining facilities and recreation facilities. Currently, there are seven shuttle routes.

The shuttle is an evolving service. The Installation Transportation Office plans to expand the fleet, increase service hours and add additional routes to Simmons Army Airfield, Pope Army Air Field, the 82d Combat Aviation Brigade and the 108th Air Defense Artillery. The transportation hub at the North Main Exchange will give the Fort Bragg population access to regional mass transit services including Spring Lake Transit and the Fayetteville Area System of Transit (FAST).

THE SUSTAINABLE SHUTTLE: ENVIRONMENTAL MATHEMATICS

On the installation, only four vehicles per thousand have more than one occupant. According to estimates, one shuttle passenger represents one single occupancy vehicle trip. The average trip on post is four miles. Therefore, each shuttle passenger represents four avoided vehicle miles traveled.

The shuttle moved over 36,000 passengers in FY10, reducing on-post vehicle miles traveled by 144,000. The national automobile fleet averages 24 miles per gallon and each gallon of gasoline produces 19.3 pounds of carbon dioxide. The 144,000 miles not traveled by a single occupancy vehicle represents 115,200 pounds of carbon dioxide emissions avoided.

Hybrid shuttles at nine miles per gallon represent a 66 percent reduction in petroleum consumption and thus emissions as compared to traditional shuttles averaging 3 miles per gallon. Each gallon on standard diesel emits 22.2 pounds of carbon dioxide. The biofuel component saves 4.44 pounds of carbon dioxide for each gallon of biodiesel.

In sum, the biodiesel fueled hybrid electric shuttle reduces carbon dioxide emissions 13.32 pounds per gallon compared to the traditional shuttles.

10 YEARS OF SUSTAINABILITY
FORT BRAGG • NORTH CAROLINA

SUCCESS IN SUSTAINABILITY TRANSPORTATION

ALTERNATIVE TRANSPORTATION PLAN

In 2009, a study was conducted to develop alternative transportation options for feasible, cost effective and environmentally sustainable solutions for the installation. The plan consists of a comprehensive study of existing and future traffic conditions at Fort Bragg with recommendations for: improving traffic control measures, reducing vehicular flow, reducing accidents, maintaining and analyzing data on crashes and improving parking and safety.

With a complete departure from the 20th century automobile-centric sprawl design standard, the plan identifies an expansion of the shuttle system as well as the development of routes and corridors designated primarily for bicycle and pedestrian transportation.



When fully implemented, travelers may commence and end their journeys on post with no need for an automobile. Transit, bicycle and pedestrian routes are integrated into the Fort Bragg Transportation Improvement Plan.

In late 2009, the Installation Management Command (IMCOM) reviewed the Alternative Transportation Plan, and Transportation Team leaders presented the plan to Pentagon leadership. The Alternative Transportation Plan is now considered a model for the Army.

THE NC MOBILE CARE AWARD

In May 2010, Fort Bragg was awarded the North Carolina Mobile Clean Air Renewable Energy (CARE) Award in the Policy/Organization category for its commitment to clean transportation.

The North Carolina MOBILE CARE Award recognizes exceptional efforts to reduce emissions and encourage alternative fuels and technologies.

10 YEARS OF SUSTAINABILITY FORT BRAGG • NORTH CAROLINA

SUCCESS IN SUSTAINABILITY TRANSPORTATION

MED PLAZA

The Med Plaza is the installation term for an internal alternative transportation corridor that will serve as the model for our smart growth. The corridor design connects the 82d Airborne Division and USASOC along Ardennes Street to the Reilly Road Mall. As the plaza proceeds north from the Reilly Road Mall, a pedestrian plaza connects the Soldier Support Center, Warrior in Transition Center and WAMC. Turning east, the Med Plaza is integrated into the future Old Post Historic District Pedestrian Mall design, passing the Forces Command (FORSCOM) and United States Army Reserve Command (USARC) campus and ending at Mallonee Plaza, the North Main Exchange, the North Post Commissary and the regional transportation hub. Over \$500 million in planned construction will integrate and gain access to Med Plaza.

COMBINED AIR TEAM

The Combined Air Team began as the Fort Bragg Air Team in 2006. By 2007, a consolidation of air quality stakeholders representing eight regional counties converged into one team representing a variety of concerns centered around air quality. Representatives include Sustainable Sandhills, the North Carolina Department of Transportation, regional transit providers, metropolitan and rural transportation planning organizations, utility providers, health care systems, educational institutions from elementary to post-secondary, commercial enterprises and Fort Bragg. This alliance allows knowledge and technology transfer to occur efficiently and across a broad spectrum of disciplines. Coordination through the team has resulted in joint access to planned greenway systems and alternative transportation plans. Through this partnership, the region is one of the pilot locations participating in Project Get Ready, a Department of Energy initiative for the electrification of transportation.

IN OTHER WORDS ...

FORT BRAGG HAS PROVEN THAT SUSTAINABLE TRANSPORTATION BUILDS A VIBRANT, CONNECTED, EARTH-FRIENDLY PLACE TO WORK AND LIVE, ALL WHILE MAINTAINING AND SUPPORTING OUR MILITARY MISSION.

CHARLES YOUNG • SUSTAINABLE TRANSPORTATION PLANNER

10 YEARS OF SUSTAINABILITY
FORT BRAGG • NORTH CAROLINA

SUCCESS IN SUSTAINABILITY CULTURE

THROCKMORTON LIBRARY

COMPREHENSIVE MARKETING PLAN

PARTNERSHIPS

EARTH WEEK

ARBOR DAY

**10 YEARS OF SUSTAINABILITY
FORT BRAGG • NORTH CAROLINA**

SUCCESS IN SUSTAINABILITY CULTURE

PARTNERSHIP WITH THROCKMORTON LIBRARY

The Sustainable Fort Bragg Culture Team established a partnership with the John L. Throckmorton Library on Fort Bragg to present a series of environmental programs for children. Representatives from Sustainable Fort Bragg attend the programs and present environmental tales, music and activities for families. The program is designed to educate children and their families about the environment and provide a connection to the natural world. Presentations have included Under the Sea, Feed the Birds, Arbor Day, Earth Day and May Day.

The collaboration between Sustainable Fort Bragg and Throckmorton Library is an important step in the efforts of both organizations to reach out to the entire Fort Bragg community - which includes Soldiers, families, retirees and civilians. In addition, the partnership will support Garrison Goal One and enhance the Fort Bragg mission by improving morale, providing recreational opportunities for the entire family and building a relationship between Sustainable Fort Bragg and other organizations on the installation.

IN OTHER WORDS ...

*WE DO NOT INHERIT THE
EARTH FROM OUR
ANCESTORS. WE BORROW IT
FROM OUR CHILDREN.*

NATIVE AMERICAN PROVERB



IN OTHER WORDS ...

THROUGH SHARED EXPERTISE AND CREATIVITY, THIS PARTNERSHIP WILL EXPAND THE LIBRARY LITERACY INITIATIVE AND MAXIMIZE ITS SERVICES TO SOLDIERS AND THEIR FAMILIES.

BERNADETTE ROSS • REFERENCE LIBRARIAN AT THROCKMORTON LIBRARY

10 YEARS OF SUSTAINABILITY FORT BRAGG • NORTH CAROLINA

SUCCESS IN SUSTAINABILITY CULTURE

COMPREHENSIVE MARKETING PLAN AND PARTNERSHIPS

In efforts to connect with all sectors of the Fort Bragg population, the Sustainable Fort Bragg maintains a multimedia approach to marketing.

Sustainable Fort Bragg has developed a presence on social media internet networks. On these networks, individuals may follow Sustainable Fort Bragg and receive real time information on sustainability, events and environmental news. Participants may also provide comments and suggestions.

Sustainable Fort Bragg also maintains contact with local news publications. Program initiatives receive consistent coverage in the Fort Bragg newspaper *Paraglide* as well as local and regional publications including the *Fayetteville Observer*, *Up and Coming*, *Public Works Digest*, *Natural Awakenings* magazine, *Live Better* magazine and the Army Environmental Command Environmental Update.

Furthermore, Sustainable Fort Bragg plans, promotes and produces various community events throughout the year. These events are designed to reach the entire Fort Bragg population - including Soldiers, Family members, civilians and retirees - and to demonstrate how sustainability concepts may be applied at a practical level. These events include National Public Lands Day, America Recycles Day, Arbor Day, Earth Day and the Green Living Challenge.

To further increase public awareness of the environmental program, Sustainable Fort Bragg has created partnerships with other directorates, organizations and military units on the installation. Within DFMWR, the Team has developed relationships with John L. Throckmorton Library, the Sports and Recreation Division, Frame and Design Arts, Child and Youth Services, Wonderful World for Kids, Cook Child Development Center, Tolson Youth Activities Center, Pope Auto Center and DFMWR Marketing. In a partnership with Army and Air Force Exchange Services (AAFES), the Team has hosted information stations on multiple occasions at the post exchanges to emphasize sustainability issues. The Culture Team has developed a relationship with Fort Bragg Schools/DoDEA to provide environmental education opportunities to students. Additionally, Sustainable Fort Bragg has initiated partnerships with Picerne Military Housing, the Armed Services YMCA and Family Readiness Groups on the installation to provide environmentally oriented activities for families and to create a pool of volunteers committed to military families and the environment. Outside the installation, Sustainable Fort Bragg partners with organizations such as Sustainable Sandhills, Fayetteville Public Works Commission, the North Carolina Cooperative Extension and NCDENR.

10 YEARS OF SUSTAINABILITY
FORT BRAGG • NORTH CAROLINA

SUCCESS IN SUSTAINABILITY CULTURE

EARTH DAY

Sustainable Fort Bragg plans and promotes Earth Day celebrations with various activities for the entire Fort Bragg community. Events have included community fairs in military housing, presentations in schools and youth centers, information stations, softball tournaments, poster/art contests, air quality awareness campaigns, archaeological digs, wildlife presentations, product demonstrations, composting classes, vermiculture classes and recycling drives. Team representatives provide information regarding environmental preservation to the Fort Bragg population through social media, print advertising and multimedia awareness campaigns.

For Earth Day in April 2011, Sustainable Fort Bragg partnered with AAFES to present information stations at the North Main Exchange and South Main Exchange on the installation. Representatives also presented an Earth Day Celebration program for children at Throckmorton Library. With Picerne Military Housing, the team presented an Earth Day Fair with interactive activities including Green Glamour, Green Clean, Green Machines, a Star Lab indoor planetarium, science demonstrations, music and refreshments.

ARBOR DAY

Sustainable Fort Bragg and the Fort Bragg Arbor Board observe North Carolina Arbor Day annually to encourage the preservation of trees and support the Sustainable Land Use initiative. In 2011, Sustainable Fort Bragg and the Arbor Board observed Arbor Day with an official tree planting ceremony at Devers Elementary School. The school Flag Team and a group of student ambassadors assisted the Garrison Commander, Colonel Stephen Sicinski with the planting of a redbud tree on campus. In addition, a representative from the Forestry Division of NCDENR presented Fort Bragg with the fifth Tree City USA recognition and the fourth consecutive Tree City USA Growth Award for the installation. To further foster an interest in Arbor Day, Sustainable Fort Bragg and the Arbor Board also developed and sponsored the first annual UnbeLEAFable Sculpture Competition for children.

IN OTHER WORDS ...

THE VERY PROCESS OF RESTORING THE LAND TO HEALTH IS THE PROCESS THROUGH WHICH WE BECOME ATTUNED TO NATURE AND - THROUGH NATURE - TO OURSELVES.

CHRIS MASER • AUTHOR OF FOREST PRIMEVAL

10 YEARS OF SUSTAINABILITY
FORT BRAGG • NORTH CAROLINA

PART

3

**FUTURE OF
SUSTAINABILITY**

FUTURE OF SUSTAINABILITY THE WAY AHEAD

While the various program objectives must meet individual goals as outlined in the IMCOM Campaign Plan Lines of Effort, the Army Sustainability Campaign Plan and the DoD Strategic Sustainability Performance Plan, Fort Bragg must also collaborate and compromise certain inevitable conflicts to achieve the ultimate goal - building a sustainable community that meets the needs of the Soldier today, tomorrow and forever. For example, identifying appropriate sites for renewable energy sources such as solar arrays can potentially become a contentious issue due to the finite amount of land available for construction and training on the installation. In another example, Fort Bragg must strive to conserve energy and water yet maintain fully functional facilities that encourage productivity, efficiency and morale.

Land use on Fort Bragg is a critical consideration, both in quality and quantity. We no longer have the luxury of sprawl development. Indeed, the installation master planners must work vertically and densely with a multi-use mantra and an eye for constrained budgets. Currently, there are several projects in development that consider both space limitations and financial constraints. One of these initiatives - the Right of Way Physical Training Trail - is a proposed fitness trail constructed along Progress Energy power lines that run through the cantonment area and out to the re-purposed ammunition supply point.

While the legacy of the Facilities Team is evident on Fort Bragg, the future is in existing facilities. Monuments to their respective eras, existing facilities offer a means to further advance sustainable design and development on the installation. Operations, maintenance and renovation of existing facilities provide the means to achieve efficiency and savings.

The Materials Team will continue to foster the use of green procurement practices on the installation, identify closed loop solutions, educate end users on waste reduction opportunities, seek outlets for reuse and expand recycling operations.

IN OTHER WORDS ...

IT IS ESSENTIAL THAT WE ASSUME A SUSTAINABILITY MINDSET IN ALL ASPECTS OF OUR OPERATIONS TO ACHIEVE THE ARMY TRIPLE BOTTOM LINE OF MISSION, COMMUNITY AND ENVIRONMENT.

IMCOM CAMPAIGN PLAN

10 YEARS OF SUSTAINABILITY
FORT BRAGG • NORTH CAROLINA

FUTURE OF SUSTAINABILITY THE WAY AHEAD

In its efforts to achieve energy security and the Army goal of net zero energy consumption, Fort Bragg will continue to implement intensive conservation and efficiency efforts. The balance of energy needs will then be achieved through renewable energy initiatives. A collaboration between DPW, Master Planning, the Environmental Division and DPTM is slated to secure potential renewable energy sites for plans including a solar photovoltaic array and 40+ megawatts of biomass generation. Fort Bragg commenced this process with the development of the UMCS, the implementation of a cogeneration plant (82d Heating Plant) and the initiation of multiple retro-commissioning projects on installation facilities.

The Water Team will focus on water quality monitoring to support watershed quality, which is essential to the overall health of our communities. Establishing baseline information on water quality through sampling, tracking and monitoring of sites will provide measures to evaluate the effectiveness of low impact development conveyances and will provide invaluable information of changes in our watershed.

The Transportation Team has adopted a series of projects that will ultimately achieve the Army goal of net zero energy consumption for transportation. The team will expedite the adaptation of certain renewable fuels for the fleet. Alternative modes of transportation - primarily bicycle, transit and pedestrian - are an integral part of the plan. Over the next ten years, a strategic collaboration of land use and transportation projects will support rural communities and smart growth development patterns as the region continues to urbanize. For instance, the Fuel the Forces biofuel project will link the installation to other military posts in North Carolina to achieve the ultimate goal of producing all liquid fuels locally. Regional involvement continues to impact the integration of alternative transportation modes into the roadway planning model serving Fort Bragg.

To increase awareness of the environment and Garrison Goal One initiatives, Sustainable Fort Bragg continues to develop the comprehensive marketing plan. The implementation of a sustainability video series, a Sustainable Transportation marketing campaign, a Green Directorate marketing campaign and an expansion of community events to emphasize the practical applications of sustainability are among the goals.

10 YEARS OF SUSTAINABILITY
FORT BRAGG • NORTH CAROLINA

FUTURE OF SUSTAINABILITY "THE WAY AHEAD"

Sustainable Fort Bragg plans to develop more partnerships both with organizations on the installation and in the surrounding community. The challenge is to reach every sector of the Fort Bragg population and to maintain contact with the transient community in an effort to educate our Soldiers and their families on ways to take sustainable practices with them wherever they go.

As the military mission is ongoing, our sustainability program will grow and develop with the evolving needs of our forces. In the coming years, Fort Bragg will continue to apply sustainability principles to secure the viability of its important military objectives and maintain a functional post for future generations of Soldiers and their families.



The Sustainable Fort Bragg program has truly come full circle - from ambitious goals set in the infancy of an innovative program to the integration of sustainability concepts into installation operations.

Environmental preservation has become the daily responsibility of every individual on the installation.

Now, with the adoption of Fort Bragg initiatives throughout the DoD, Fort Bragg has become and will continue to be the template for operational sustainability.

IN OTHER WORDS ...

A FOCUS ON SUSTAINABILITY WILL ADDRESS PRESENT AND FUTURE NEEDS WHILE STRENGTHENING COMMUNITY PARTNERSHIPS THAT IMPROVE OUR ABILITY TO ORGANIZE, EQUIP, TRAIN AND DEPLOY OUR SOLDIERS AS A PART OF THE JOINT FORCE, MAKING US BETTER NEIGHBORS AT HOME AND ABROAD.

IMCOM CAMPAIGN PLAN

10 YEARS OF SUSTAINABILITY FORT BRAGG • NORTH CAROLINA

