



**SUSTAINABLE
FORT CARSON**
RIGHT ACTIONS. RIGHT NOW!

SUSTAINABILITY REPORT 2010

MISSION ENVIRONMENT COMMUNITY ECONOMY

ACHIEVING OUR VISION



Fort Carson began its sustainability journey in 2002, with a bold vision to achieve complete sustainability by the year 2027. Our steady progress continually improves the quality of life for everyone who lives, works and plays at Fort Carson - today and in the future.

Sustainable Fort Carson is more than a program - it's a state of mind. At its very core, sustainability is about each and every one of us - our relationship to ourselves, our mission, our community and our environment. It reaches deeply into all corners of life on and off post, and beyond. Our goals demonstrate our responsibility and commitment to taking care of the total Army Family and neighboring communities.

As Garrison Commander, I take pride in the leadership role that Sustainable Fort Carson upholds in the Army and in the community. I am especially proud when I see sustainable practices in action because that is how we achieve our vision. I invite you to be part of the success that makes Fort Carson "Best Hometown in the Army - Home of America's Best!"

Right Actions, Right Now!

A handwritten signature in black ink, appearing to read "R. McLaughlin".

*Robert F. McLaughlin
Colonel, U.S. Army
Garrison Commander*



Our vision for a "Sustainable, Secure Future" will be a challenging undertaking, but worthy of our Nation and the Army men and women serving throughout our global contingencies. We remain heartened, as it is through their service we are - Army Strong!

Excerpt from Army Sustainability Campaign Plan: Sustainable Operations For A Secure Future dated May 2010. To view the report go to http://aec.army.mil/usaec/sustainability/campaign-plan_2010.pdf

For more information about Sustainable Fort Carson or the contents of this report call (719) 526-9777 or go to www.carson.army.mil



SUSTAINABLE FORT CARSON

RIGHT ACTIONS. RIGHT NOW!

Sustainable Fort Carson exists to operationalize sustainability at all levels of the Installation in a way that accomplishes all of today’s missions while allowing our successors to accomplish tomorrow’s missions.

To support this vision, Sustainable Fort Carson unveiled a new logo after a thorough process of gathering feedback from local stakeholders. A variety of logo choices was presented to focus groups comprised of Soldiers, Families, visitors and employees. The graphic image of the star shield that safeguards mission, environment and community now represents Sustainable Fort Carson.



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To streamline efforts and communication, the original 12 goals were reviewed and updated. The objectives of Community of One, Partnership, Sustainability Training and SEMS were integrated into the present goals. The Air Quality goal was broadened to encompass greenhouse gas emissions. The High Performance Buildings and Master Planning goals were combined to form Sustainable Development.

COMMUNICATING SUSTAINABILITY

Fort Carson's robust strategic communication efforts build relationships between community members and leaders; Soldiers and their Families; Civilian personnel; local, state and federal officials; and Headquarters Department of the Army. Our strategy for communication includes helping stakeholders understand their part in the overall system of Fort Carson and the Pinon Canyon Maneuver Site (PCMS). Sustainability means accomplishment of the mission while managing the impacts on nature, economy, well-being and society. Creating a culture of sustainability requires internal and external stakeholder communication to engage everyone in the journey towards a Sustainable Fort Carson.

Our Strategic Communication goal as identified by Installation Management Command (IMCOM):

The Army Family Covenant (AFC) will continue to be an area of strategic emphasis. Our Nation has been at war for almost a decade and the Army's promise to support our Soldiers, Civilians, and their Families during this time of persistent conflict continues to be among the Army's highest priorities. Additionally, three high-level cross-cutting issues are reflected in every Line of Effort. These issues are universal among multiple stakeholders and merit heightened focus to raise awareness of their importance. These issues are: Resilience, Cost Culture, and Army Community Covenant/Partnerships.

Methods of Communication –

Internal communication is conducted through Fort Carson Mountaineer articles, policy letters, educational classes, Fort Carson websites and social networking sites such as Facebook and other announcements. Sustainability goal progress is tracked and publicized in the annual Sustainability Report, which is distributed to internal and external audiences. Additionally, each goal is highlighted once a year through a Garrison Commander's breakfast, which is open to the public. Pertinent goal information is distributed to representatives of the on-Post housing areas at their monthly Mayor's Meetings. The Environmental Compliance Assessment Team educates units about sustainability on the Installation as part of their training efforts.



Sustainable Fort Carson team, including past members, from left to right: Christopher Juniper, Alicia Archibald, Anneliesa Barta, Mary Barber, Sarah White, and Frank Kinder.

External communication is targeted to the Headquarters Department of the Army; IMCOM West; U.S. Army Environmental Command; local, state and federal agencies; and the Front Range Community at large. Communication is accomplished through the civilian media, requests for tours of the Installation, and events such as the annual Southern Colorado Sustainability Conference. Each year, numerous opportunities

exist to present to technical and non-technical audiences, local community groups, planning agencies, universities and other governmental bodies.

USAG Fort Carson Resource Guide – The Garrison Resource Guide provides each member of the Fort Carson community a one-source reference book. The book is in direct alignment to the Fort Carson Campaign Plan (FCCP) as well as the Installation Management Campaign Plan (IMCP).

Faith Based Working Groups – The Fort Carson Soldier – Family Ministry Forum is a non-sectarian command sponsored, chaplain led initiative designed to help meet the spiritual and other needs of service members and their Families by partnering with religious or faith based organizations in the local community. As part of the Fort Carson Warrior Family Community Partnership (WFCP), the Forum fosters collaboration and information sharing about faith based services, programs and resources available to Soldiers and Families. The Forum also provides the opportunity for civilian organizations interested in providing faith based ministry programs or other services to Soldiers and their Families to network, share best practices, and learn about educational and training opportunities and resources to support their programs.

Fort Carson Town Halls – These quarterly meetings are an avenue for the Fort Carson community to intercept current, relevant information about their community directly from Senior Leadership, as well as foster an opportunity for two-way communication by providing a forum to voice opinions, comments and concerns.

Community Partnership Forum – The Pikes Peak Area Council of Governments (PPACG) in conjunction with Fort Carson holds a bi-annual



Sustainable Fort Carson reaches out to Soldiers, Families and communities several times a year with interactive educational hands-on demonstrations of renewable energies, fun displays of trash to treasure recycled products, and other educational materials.

Community Partnership Forum to provide information to the Colorado Springs community about Fort Cason activities and deployments and the community's response to Fort Carson Growth. Attendees are encouraged to ask questions during the main presentation to discuss ways the Colorado Springs community and Fort Carson can work together to support Soldiers and Families and meet community needs.

Semi-Annual Education Summit / Youth Symposium –The Fort Carson Education Summit is an annual event that brings educators and military leaders together to discuss education resources, issues related to military children, and changes in Fort Carson personnel that impact school district's growth.

Fort Carson NOW (Channel 10) – Fort Carson Now is a 30-minute program aired both on Fort Carson and in the community on the local Fox network. It is a means to educate both the internal and external audience on Fort Carson's programs, Soldiers and Families. The program highlights training as well as the sacrifices of the Army community.

Warrior Family Community Partnership – The mission of the Warrior Family Community Partnership (WFCP) is to integrate existing systems of support and services to Fort Carson Soldiers and their Families to assure an optimal quality of life while fulfilling their mission to our nation. The WFCP concept also serves the Greater Front Range Community by providing a forum and facility space for individuals and groups wishing to support Soldiers and Families with services, gifts, and volunteer activities.

Fort Carson Command Team Live Blog – The Fort Carson command team hosts a live blog session for the Mountain Post community which provides an opportunity to have an audience with the Fort Carson Command team to voice concerns and questions. Fort Carson leadership is interested in

hearing thoughts, questions and concerns as they relate to life at Fort Carson. This session is open to anyone who would like to engage the leadership on topics that concern Fort Carson and the 4th Infantry Division.

Behavioral Health Working Group – The Department of Behavioral Health in Evans Army Community Hospital at Ft. Carson, CO partners with several Colorado Springs organizations to enhance the quality and continuity of behavioral health care for Soldiers and their Family members.

Southern Colorado Engagement Strategy Working Group – This working group was established to generate open, two –way



Fort Carson conducts open houses at the Pinon Canyon Maneuver Site as part of outreach efforts in the local community.

communication and information sharing; create opportunities to develop sustainable stakeholder interactions and demonstrate Soldier presence; and form a network of support and solicit new ways of collaborating with north, central and southern portions of the state of Colorado. This working

group has led the way to increased outreach activities at the PCMS and surrounding communities. During FY10, 2nd Brigade, 4th Infantry Division hosted an Open House at the training site in Trinidad, Colorado, to inform the local community about how the US Army leverages PCMS to prepare Soldiers and units for combat. The event included a briefing, vehicle/ helicopter static displays, and a picnic.

REGIONAL PARTNERSHIPS

Fort Carson, known as the Mountain Post, is one of the largest Army Installations in the nation. As a power projection platform, Fort Carson is one of the world's premier locations to lead, train, and maintain while preparing Soldiers to win on the battlefield. The land located at Pinon Canyon Maneuver Site (PCMS) is considered one of the best areas for warfare training.



Fort Carson, the largest non-state employer in Colorado, is a vital, active, caring installation. The Installation emphasizes quality of life programs, and fosters personal and professional growth to attract, develop, and retain quality people.

The Fort Carson community emphasizes the Total Army Family, in cooperation with surrounding communities, and contributes to accomplishing our most important mission: caring for Soldiers, civilians, retirees, and Families while we train to be ready to mobilize, deploy, and fight. As a rapidly growing Installation, Fort Carson has great impact on all community agencies, and schools.

Out of a military impact planning process with Pikes Peak Area Council of Governments to address Fort Carson growth, an action item to create a regional sustainability plan was initiated. As a result a Sustainability Action Plan is underway to establish how Fort Carson, regional governments, the private and nonprofit sectors can mutually benefit from Fort Carson growth and sustainability goals. This effort will use quality of life indicators and other strategies to develop a long-term plan to achieve sustainability in the Pikes Peak region.

Statement of Commitment

The Pikes Peak Region continues to grow and develop – creating competing demands on our natural environment, government services, community relationships, educational systems, and personal health and satisfaction.

Many communities throughout the United States and the world have adopted sustainability principles. Sustainability provides a map and a path by which we account for current actions while working to ensure our future legacy is a positive one.

It is a vision of multigenerational betterment of our quality of life and community. In this spirit, we are creating a cooperative effort to pursue regional sustainability.

We the signatories of this document do hereby commit to collaboratively pursue an environmentally, socially and economically sustainable and prosperous future for the Pikes Peak region. We commit to work together with stakeholders throughout the region to foster education and action plans. As such, we commit to work in partnership on a sustainability planning process for the region that will strengthen collaborative decision making among governments, non-profits, private individuals and businesses. Its foundation will be widespread education about the region's and nation's sustainability challenge and best practices for solutions.

In addition to Fort Carson, the following entities have signed the Statement of Commitment: (partial list)

Pikes Peak Area Council of Governments • City of Colorado Springs • El Paso County •
Town of Green Mountain Falls • City of Fountain • University of Colorado - Colorado Springs •
Colorado Springs Utilities • Catamount Institute • Colorado College • Sierra Club • Colorado
Springs Regional Economic Development Corporation • Pikes Peak Pikes Peak Community College •
Town of Monument • Cheyenne Mountain Resort • Keep Colorado Springs Beautiful, Inc • Cultural
Office of the Pikes Peak Region • U.S. Senator Michael F. Bennet • Pikes Peak Library District •
City of Manitou Springs • USAF Commander, Peterson Air Force Base • El Pomar Foundation •
U.S. Senator Mark Udall • Pikes Peak United Way • Southern Colorado Branch, U. S. Green Building
Council • American Institute of Architects of Southern Colorado • Memorial Health Systems • Frost
Livestock Company • Fountain Creek Ranch • City of Woodland Park • Greater Colorado Springs
Chamber of Commerce • Urban League of the Pikes Peak Region

Personal Sustainability



Garrison Commander Colonel Robert F. McLaughlin and Acting Senior Commander Brigadier General James H. Doty, Jr.



Colonel Thomas D. Vail, Deputy Director, Comprehensive Soldier Fitness



Jerriann Hance, Mountain Post Wellness Center



Mary Barber received the Community Sustainability Award on behalf of Fort Carson for outstanding leadership.



Sustainability Planner Alicia Archibald is also a Singer/Guitarist who performed at the conference

A Healthy Environment Sustains Families.
Healthy Families Sustain Soldiers.
Healthy Soldiers Sustain the Mission.

Strong Bodies Strong Minds Strong Families Resilient Workforce

At the 2010 Southern Colorado Sustainability Conference held November 18th and 19th at the Antlers Hilton Hotel, Fort Carson explored the topic of “Personal Sustainability” and resiliency. Topics included spiritual, mental, physical fitness and health of Soldiers, their Families, civilians and the community as a whole.

One of the outcomes of the conference is that the Sustainability team forged new relationships and explored many new resources to support ongoing efforts to achieve a resilient and sustainable community. Here are some highlights from the conference:

“This is what sustainability is all about. Taking care of the environment is important but above all we must protect our most valuable resource - People... Soldiers, Families, civilian workforce, and the community at large.”

Brigadier General James H. Doty, Jr.

“In order to “operationalize sustainability” on the installation, as well as inspire and motivate our surrounding communities, we are shining the light on health, wellness and resiliency of our Soldiers, Families, civilians and community.”

Colonel Robert F. McLaughlin

“The Comprehensive Soldier Fitness program represents the Army’s investment in the readiness of the force and the quality of life of our Soldiers, Family members, and Army Civilians. As a combat veteran, husband and father, it is critical that we increase our mental stamina and strength like we do the physical side.”

Colonel Thomas D. Vail, Deputy Director, Comprehensive Soldier Fitness

“Healthy Soldiers + Healthy Families = Health Community = SUSTAINABILITY”

Jerriann Hance, Mountain Post Wellness Center

“We are so fortunate to live and work in a community that keeps asking, “What else can we do?” The conference was a great way to get two-way feedback about what Fort Carson and our community is doing to take care of our greatest resource – Soldiers and Families.”

Kristen Kea, Warrior Family Community Partnership

“Resiliency requires vitality - and vitality requires stamina. You have to take care of yourself so you can serve others.”

Tami Gale, Fort Carson EEO

“Sports has a dramatic impact on our overall health. Not only does it foster teamwork, accountability, and play; it also sustains our way of life by allowing us to enjoy a better quality of life.”

John Register, United States Olympic Committee, Paralympian Silver Medalist

“Healthy people have a desire to protect the environment in which they live. People who feel valued naturally value others and the environment. This is what creates a sustainable community.”

Alicia Archibald, Sustainable Fort Carson



ENERGY & WATER RESOURCES

Goal: Sustain all facility and mobility systems from renewable sources and reduce total water purchased from outside sources by 75% by 2027.

Fort Carson continues to be a leader in pursuing renewable technologies and implementing projects to improve energy and water efficiency and security.

GOAL PROGRESS

During Fiscal Year 2010 (FY10), Fort Carson obtained approximately 43% of its electrical energy from the following renewable sources: *(all numbers are approximate)*

- 2% from the Installation's 2 Megawatt (MW) Solar Photovoltaic (PV) array
- 12% hydro power from Colorado Springs Utilities (CSU) and the Western Area Power Administration (WAPA)
- 1% qualifying wind power from CSU.
- 28% from the purchase of Renewable Energy Certificates (RECs) from WAPA. The RECS, sourced from biomass and wind power in California and Nebraska, offset Fort Carson's use of electrical energy from fossil fuels. The 5-year purchase contracts, which initially kicked off the Post's energy program, expire in Fiscal Year 2011 (FY11).

Fort Carson completed a contract to replace high bay metal halides with fluorescent fixtures in 16 facilities. For additional savings, timers and motion sensors were also installed. The initiative is expected to save \$55,000 per year in energy use with an expected payback of less than 7 years. Phase 2 of this project is planned for an additional 16 facilities during FY11.

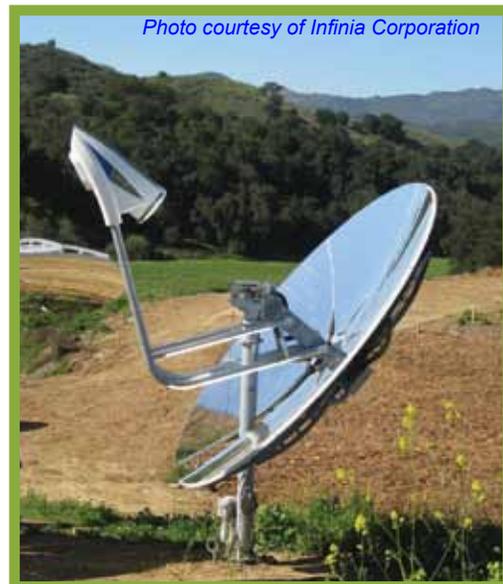
American Recovery and Reinvestment Act (ARRA) funds were used to replace aging and inefficient boilers in 15 facilities. The new boilers are over 87% efficient, and are expected to save over \$50,000 per year in natural gas costs and maintenance.

The lighting and boiler energy efficiency projects will save the Installation over 10,000 MBTUs (Million British Thermal Units) per year.

In partnership with the National Renewable Energy Laboratory (NREL), Fort Carson evaluated the economic and environmental feasibility of a biomass cogeneration plant to support the main heat plant

and provide electrical energy for the Fort Carson grid. Although the results showed a biomass plant is not economically feasible at this point, it provided valuable information for evaluating future opportunities.

All new construction in FY10 included minimal or no exterior irrigation, low-flow fixtures, waterless urinals and eliminated exterior vehicle wash racks. Solar hot water heaters and ground source heat pumps were installed in several facilities.



Fort Carson is pursuing a grant to demonstrate a combined heat and power solar dish. The dish focuses the sun's energy into useful, high-temperature energy to drive an efficient engine, producing grid-compatible electric output plus heat, ideal for use at forward operating bases.

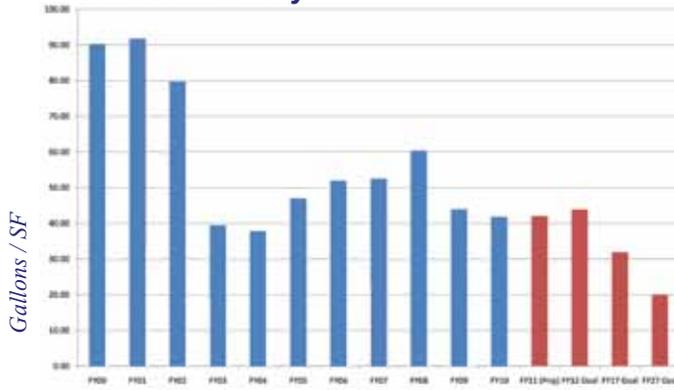
Cheyenne Shadows Golf Course -

A reduction of approximately 20% of potable water irrigation was realized during the FY10 golfing season. The reduction was due in part from the use of recycled water from the Fort Carson Waste Water Treatment Plant. In addition, mowing and irrigation requirements were reduced by increasing the acreage of native vegetation.

Evaporation-transpiration (ET) monitoring is used to ensure that the amount of water returned to the golf course is equal to the amount of water lost through evaporation and plant transpiration. An aeration

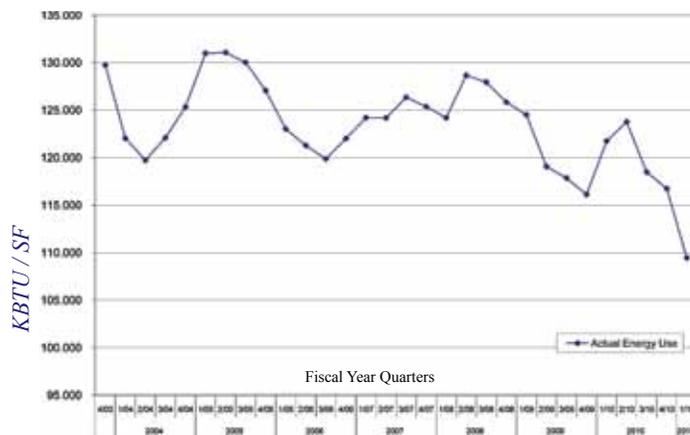
fountain was installed at the pond to improve water quality by oxygenation, without the use of chemicals.

Water Use Intensity



From an established FY02 baseline, water intensity decreased 47.5% by the end of FY10. The federal goal is a reduction of 2% per year from a FY07 baseline. From the federal baseline, Fort Carson has achieved a water intensity reduction of 20.3%.

Energy Use Intensity (not including housing)



Executive Order 13423 requires a 30% Reduction from FY03 to FY15. From the established FY03 baseline, energy intensity has decreased 10.3% by the end of FY10.

FUTURE INITIATIVES PLANNED

The following energy projects are programmed for implementation in FY11 under the Energy Conservation Investment Program within the Army:

- Additional lighting retrofits
- Expansion of the Fort Carson Energy Management Control System
- A 100 kilowatt photovoltaic array to support down range energy requirements

Fort Carson is partnering with NREL, Sandia National

Laboratories and Northern Command on the Rocky Mountain Secure Smart Grid Initiative. The goal is to improve mission assurance at Department of Defense Front Range installations by increasing energy security and reliability.

Fort Carson is an Army pilot site to field and develop a Meter Data Management System (MDMS). This web based system will allow the Installation to track and trend energy use at multiple facilities. The data collected will help identify energy improvement opportunities.

CHALLENGES & OPPORTUNITIES

Fort Carson has been assessed by the DoD and U.S. Department of Energy as a potential Net Zero Energy Installation (NZEI). The net zero challenge is to produce as much energy on-site from renewable sources as is consumed in buildings, facilities, and fleet vehicles.

Fort Carson continues to seek local utility support for energy conservation initiatives. Low energy costs in the region make the economics and paybacks for projects less attractive.

Improving energy efficiency and reducing overall energy demand on a rapidly growing Installation is a continuing challenge.

Integrating renewable energy systems in construction of new facilities and optimal solar orientation are continued opportunities.

COMMUNITY PARTNERSHIP



The PRISTINE Energy Project is a collaboration between Fort Carson, the Pikes Peak Sierra Club and Colorado energy experts. Its purpose is to chart a sustainable energy future for the Pikes Peak / Fountain Creek region.

The PRISTINE team has facilitated discussions between providers and users of sustainable energy for the purpose of identifying barriers and solutions. Providers (including Colorado Springs Utilities, City of Fountain Utilities, and Johnson Controls) and customers (including Fort Carson, Colorado College, Wells Fargo and Fountain-Fort Carson School District 8) have shared their perspectives. Solutions are currently under discussion.



SUSTAINABLE TRANSPORTATION

Goal: Reduce automobile dependency and provide balanced land use and transportation systems.

Fort Carson strives to meet its transportation challenges by:

- Increasing use of additional modes of transportation, including mass transit, bicycling and walking
- Alternating work schedules that reduce commuting time and traffic congestion
- Increasing fuel efficiency and use of non- petroleum fuels
- Reducing the occurrence of single occupant vehicles
- Utilizing regional partnerships for alternative fuels, multi-occupant vehicles, car sharing and transit.

GOAL PROGRESS

An Alternate Work Schedule and a Telework program for civil service employees who work at Fort Carson and the Pinon Canyon Maneuver Site was established. Telework as well as flexible and compressed work schedules reduce vehicle trips on and off the Installation.

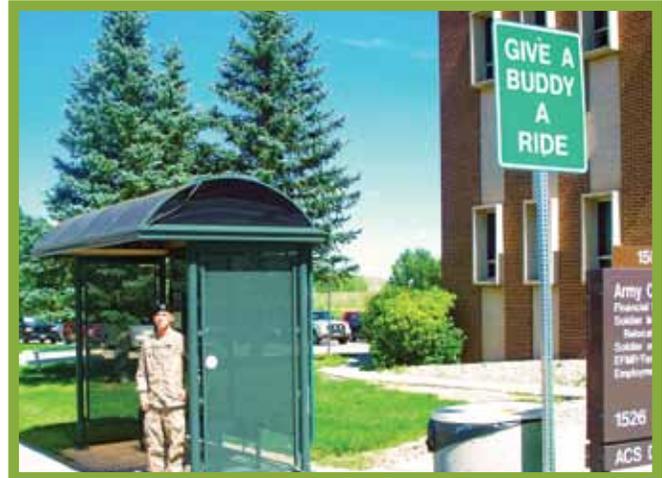
Continued roadway and gate improvements, expansion of pedestrian walkways, fitness trails and bicycle lanes are greatly reducing delay, fuel consumption and emissions, while increasing connectivity between people and places. *(Refer to Sustainable Development section for more information.)*

Rideshare - Two programs were developed:

“Share A Ride” provides free online carpool and vanpool coordination to and from Post for Soldiers and employees. This service is provided by Mountain Metro Transit, the City of Colorado Springs’ public transportation system.



“Give A Buddy A Ride” is a voluntary program for on-Post ridesharing that was adapted from the long standing tradition of private citizens helping Soldiers reach their destination. Soldiers, civilians, and employees in need of a ride on-Post indicate so by standing at the designated rideshare area. Thus, drivers



“Give a Buddy a Ride” signs are posted across the Installation encouraging individuals to ride share and reduce traffic congestion.

who are willing and able to give a ride can make arrangements on the spot.

Rideshare incentives are under development with the Directorate of Family, Morale, Welfare and Recreation (DFMWR), Army and Air Force Exchange Service (AAFES) and private businesses in the region.

Vehicle sharing – Car and low-power vehicle (such as electric bicycles) sharing systems offered by private companies are another mobility option anticipated to be in place during FY11.

Alternative Transportation Modes –

Bike racks, storage lockers and shower facilities are being installed in new and renovated facilities to promote the increased use of bicycles. This reduces the need for military equipment transportation and storage in personal vehicles, which in turn reduces the need for vehicle trips on and off the Installation.

Smart Grid Technologies & Electric Vehicles –

Fort Carson is leading an integrated project with NREL that simultaneously deploys smart grid technologies and 5 zero emissions Smith Electric trucks in FY11. Per mile operating costs are projected to be approximately \$.30 per mile, a 60% savings from standard diesel vehicles. The trucks are available through a Department of Energy grant.

Fleet Improvements – The Installation’s non-mission vehicle fleet is steadily improving its fuel efficiency and use of alternatives to petroleum. The U.S. Environmental Protection Agency (EPA) gas mileage ratings of the fleet improved 3.1% in FY10. New fleet additions in FY09 and FY10 averaged 78% alternative fuel use capability. Highly-efficient Neighborhood Electric Vehicles (NEVs) and Smart Cars were introduced into Fort Carson fleets. *(Refer to Sustainable Procurement section for more information.)*

FUTURE INITIATIVES PLANNED

Upon completion of the Sustainable Vehicle Fuel Lifecycle Performance analysis, Fort Carson will develop a Sustainable Fuels Infrastructure Development Plan. The plan will identify ways to bring biofuels and sustainably-produced electricity to Fort Carson users. The Sustainable Vehicle Fuels analysis is being completed by the PRISTINE Energy Project technical team. *(Refer to Energy and Water section for detailed information.)*



Fort Carson will use Smith electric trucks that produce zero emissions.

Ongoing collaboration with local governments and non-profit transit providers are likely to establish transit services direct to Fort Carson employment sites in FY11 or FY12. Transit services are particularly important for people that are transit-dependent for their employment and/or medical care. Previous limited transit services offered by Mountain Metro Transit were discontinued by Colorado Springs City Council in January 2010 due to budget reductions.

Fort Carson continues to investigate the feasibility and funding of an on-Post shuttle bus system.

CHALLENGES & OPPORTUNITIES

Developing cost-effective transit service to Fort Carson is a challenge because of its location at the edge of a sprawling urban area. In addition, local government transit budgets are extremely tight. Achieving a critical mass of transit users to support highly efficient transit services is a continuing

challenge. Regulations prevent Fort Carson from providing non-mission related transit services. Additionally, Fort Carson continues to reduce its operating budget, and thus cannot easily fund free on-Post transit services.

Alternative fuel sources continue to be economically noncompetitive in the short term. The negative effects on the environment and human capital are not included in prices of traditional fuel sources. For example, if the negative effects of coal-produced electric power were included in the price, wholesale prices would approximately quadruple – making sustainable energy sources much more competitive.

Up until recently, the development of the installation’s transportation infrastructure focused primarily on accommodating vehicular travel. Limited funding is available for non-auto traffic infrastructure projects and improvements.

COMMUNITY PARTNERSHIP

El Paso County Department of Transportation (DOT) has worked diligently to support Fort Carson’s goals and initiatives by furnishing the critical transportation links needed between Fort Carson and off-Post communities. DOT provided the necessary sidewalks, crosswalks and curb cuts under Academy Blvd to link off-post housing areas to the north with the recently completed pedestrian and bicycle access lane at Gate 3.

Additionally, DOT was successful in securing a funding grant and intergovernmental agreement with Colorado DOT to design and construct a paved multi-use trail connection which will directly link Gate 4 with Pikes Peak Community College (PPCC) and off post housing areas located north of Academy Blvd. When completed in FY11, the trail will provide an unprecedented opportunity for people to move between the post and the school without the need of a motorized vehicle, and provide a direct link between the post and the transit transfer point at PPCC. *(Refer to Sustainable Development section for more information.)*

Without these key improvements many of the post’s initiatives to promote alternative transportation would simply stop at the gates.

Fort Carson will continue to be seeking cost-effective and sustainable transit solutions for installation commuters and users, partly through participation in the Mountain Metro “Regional Transit Governance Study” and through participation in planning and/or grant-seeking efforts of sustainable transportation stakeholders in the region.



AIR QUALITY

Goal: Reduce Installation greenhouse gases (scope 1, 2 and 3) and other air pollutants to the lowest achievable emission rates.

The Air Quality Goal was broadened and restructured in FY10 to capture additional pollution impacts related to air quality, primarily greenhouse gases (GHGs). The new goal places a greater emphasis on “asset owners”– those whose operations and activities directly impact air quality.

GOAL PROGRESS

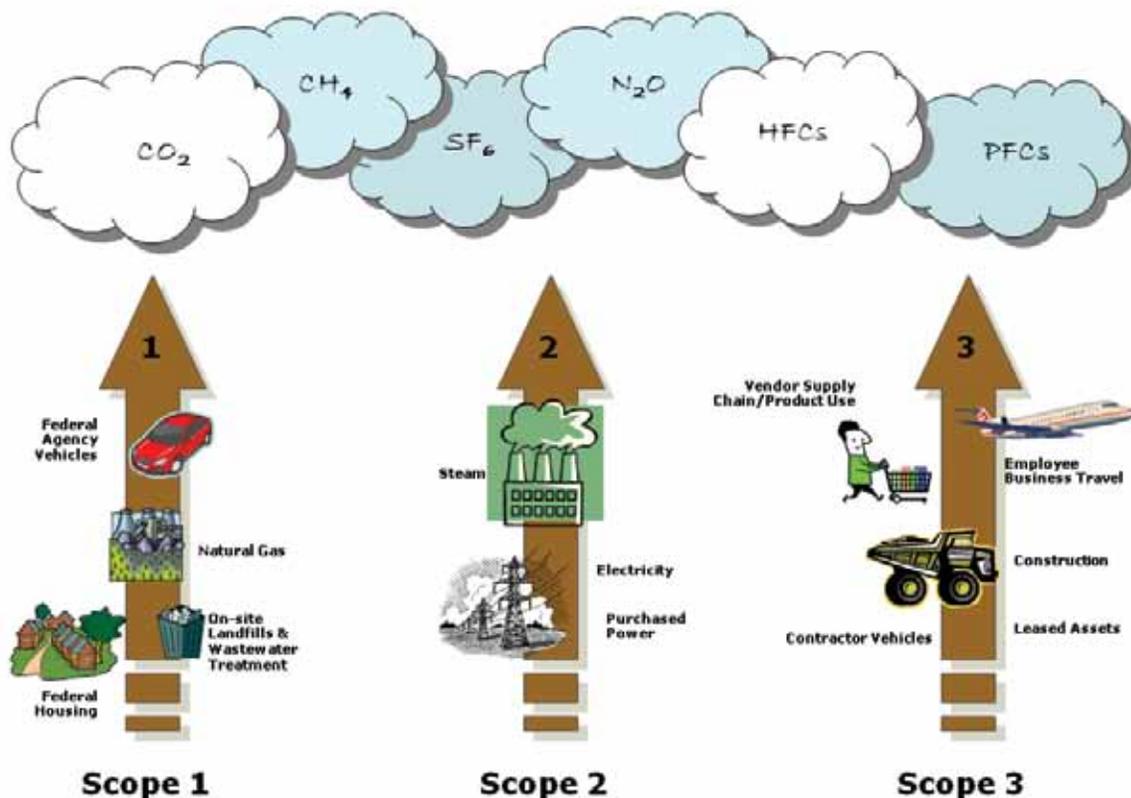
The Air Quality Program became engaged in the new Fort Carson Hazardous Material Management Program (HMMP), which reviews and evaluates products for their environmental impacts. The program is intended to prevent the procurement of hazardous products through alternative channels, such as unit purchases off-Post and government purchase cards, that may not meet established air quality standards. The program

drives substitutions for alternative environmentally friendly products.

An Air Quality Assessment form was instituted to capture potential air impact issues as a result of construction and Installation project activities. The form enables Fort Carson to quantify emissions from products that may contain a hazardous air pollutant or any number of volatile organic compounds. This will allow for the estimation of GHG emissions by leveraging the construction data collected for carbon monoxide quantification under the Clean Air Act General Conformity rules.

Implementation of renewable energy projects improves air quality through reduction of several pollutants.

COMMON SOURCES OF FEDERAL GHG EMISSIONS



FUTURE INITIATIVES PLANNED

Fort Carson expects to reduce carbon dioxide emissions by 2,600 tons a year from installed solar hot water systems and several photovoltaic projects programmed for FY11.

Fort Carson will develop metrics and the greenhouse gas tracking required for Executive Order 13514, “Federal Leadership in Environmental, Energy, and Economic Performance” (October 2009) reporting.

The Air Quality Program plans a greater focus on integration with other sustainability teams, aspect owners and Fort Carson stakeholders to achieve air quality goal objectives.

Efforts to reduce the emissions of all pollutants will continue through:

- Installing emission units with best control technologies, which include low-nitrogen oxide burners on boilers and domestic hot water heating combustion equipment, and New Source Performance
- Standard-certified engines for emergency power applications
- Ongoing product substitutions for greener alternatives where applicable
- Working with garrison sustainability teams to meet goal initiatives for renewable energy, sustainable transportation and green procurement. This will ensure items not covered under the HMMP chemical scope are reviewed.

CHALLENGES & OPPORTUNITIES

The current state of Army transformation, the ARFORGEN cycle (Army Force Generation Cycle which affects units deploying and returning home), ongoing wars, and new missions being deployed across the Installation create ongoing communication challenges.

Education of the mission element is constantly in motion with deployments, redeployments and

personnel changes. For example, open burning is not allowed in Colorado without a permit; however units coming back from overseas, or from other installations that do not have these requirements, are unaware of the local requirements. The Air Quality team must effectively adapt to shifting priorities, resources and continuously educate the staff and stakeholders.

Online availability of the newly developed Environmental Battle Book protects Soldiers and the workforce from improper procurement, handling and/or disposal of hazardous materials. The book provides quick reference for the most common environmental concerns units and other organizations face on a day-to-day basis, and describes potential hazards as they relate to the environment, safety and the handler. In addition, the book provides hyperlinks to regulatory documents. Used properly, this resource will enhance and support the Warfighter, enable mission success and preserve the limited training resources currently available to Fort Carson. *(Refer to Zero Waste section for more information.)*

Demonstrating a commitment to making bold changes, The Department of Defense (DoD) recently adopted its first department-wide sustainability plan for the next decade. The plan includes a 34% reduction of Scope 1 and 2 greenhouse gas emissions (GHGs) by 2020, relative to 2008. These reductions are slated to come entirely from non-combat related activities. Thus, Fort Carson’s air quality goals, and overall sustainability plan, are supported by the DoD’s culture of excellence in environmental stewardship.

COMMUNITY PARTNERSHIPS

We participate in planning activities with regional transportation and energy partners such as the Pikes Peak Sierra Club, Pikes Peak Area Council of Governments, Colorado Springs Utilities, and City of Fountain Utilities.

Transportation and energy use have a significant impact on air quality.



SUSTAINABLE DEVELOPMENT

Goal: Create a community that encourages social, civic and physical activity while protecting the environment.

Sustainable Development is a revised goal that incorporates:

- High Performance buildings that meet U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED)
- Form-based principles that encourage mixed-use development; greater pedestrian and vehicular connectivity; and open space preservation through greater building concentration
- Green Infrastructure, or Low Impact Development (LID) implementation that mitigate storm water impacts

GOAL PROGRESS

Fort Carson has one of the largest concentrations of federally funded, LEED-certified projects in a single location. The Mountain Post currently includes 27 LEED-certified buildings; 14 LEED Gold and 13 LEED Silver. Additional buildings are in the process of certification.

The Installation is committed to ensuring sustainability training for key decision makers on projects. In 2010, additional LEED Accredited Professionals were added to both the Fort Carson Department of Public Works and the Sustainable Fort Carson team.

The Installation worked with the Family housing contractor and Fountain Fort Carson School District 8 schools to incorporate LEED-ND (Neighborhood Development) standards into a new school and residences in the Gate 1 area. This LEED-ND effort resulted in the planning and construction of a paved 8-foot wide multi-use trail which provides pedestrian access, and coordinated area storm water systems.

Designs for the installation's first LEED-EB (Existing Building) project, Building 1219, were completed. The project includes the introduction of natural daylight,



The Post trail system, originally designed for physical training, is continuously being expanded and adapted for commuter and recreational traffic.

a green roof, material reuse and shared common areas.

Fort Carson managed a project to renovate an existing 1950s building into a warm, welcoming place for survivors of Soldiers lost in combat. This adaptive reuse of a building depended heavily on community-donated labor and monetary donations for materials and equipment.

For buildings deemed unusable, deconstruction continues to recover recyclable materials.

The integration of Form-Based Principles is another area in which Fort Carson has moved forward. Measured in increased building density within higher targeted density zones and increases in total lengths of pedestrian and bike trails, the principles seek to: improve

the built environment; be good stewards of existing green space, redevelop properties more efficiently, and provide connectivity to these facilities via bicycle or walking routes.

The Sustainable Fort Carson team is currently creating a Sustainability Action Plan for the US Army Garrison Headquarters building. The plan will be based on an occupant survey as well as requirements identified in LEED-EB. The project will become a model to improve the sustainability performance of all buildings.

Fort Carson installed 25,000 square feet of pervious paver pavement as part of a parking lot project. Pervious paving improves storm water quality, and reduces storm water quantity through infiltration. In addition, pervious pavement in lieu of asphalt reduces the heat island effect in parking lots. The lifecycle return on investment is greater with the pervious pavement option, although the initial investment exceeds the cost of traditional pavement.



Work on Fort Carson's Gate 3 included improved bike and pedestrian access.

An ongoing project to convert all traffic signals to light-emitting diode (LED) is substantially complete. Four new parking lots received 24 light-emitting diode (LED) street lamps. The LED lamps provide the same illumination as incandescent bulbs, while providing a 90% energy savings, a 400% increase in lamp life, and significant savings in maintenance.

An estimated 12,000 tons of milled asphalt pavement was reused to repair existing gravel parking lots and roadways. This resulted in Army savings in the cost of purchasing additional repair materials; truck transportation costs; and disposal costs.

During FY10 Specker and Wetzel Avenues were converted from two-way to one-way streets. The conversion provided greatly increased roadway capacity and improved traffic operations with minimal modification of the existing roadway infrastructure. The resulting congestion relief is projected to produce an 88% reduction in travel delay, 60% reduction in fuel consumption, 60% reduction in vehicle emissions, and an annual yearly weekday savings of \$601,000 in delay related costs. The project further provided for on-street bike lanes on both avenues where none were possible before.

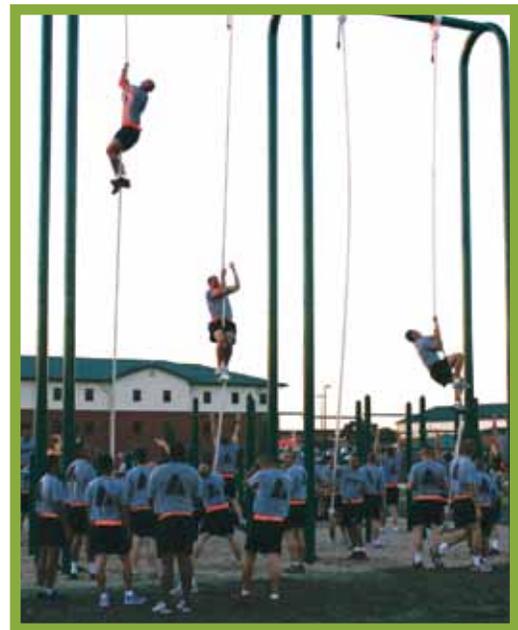
Additional bike lanes were provided on the northern portions of the major thoroughfares of Berkeley and Magrath Avenues, completing bike lanes on both corridors, and providing direct connection to Gate 4. Scheduled improvements at this gate include pedestrian and bicycle access. *(Refer to Sustainable Transportation section for more information).*

Roadway intersection improvements completed or initiated include four new traffic signals and two additional roundabouts. Roundabouts reduce traffic "conflict points" of an intersection from 56 to 16 (and thus are safer) compared to a standard four-way intersection while improving fuel efficiency by reducing congestion and engine idling. Roadway improvements also include improved crosswalk

markings and increased use of pedestrian traffic signals to promote pedestrian travel and safety are planned.

Enhanced pedestrian mobility continues to be improved and expanded with the fitness trail system and augmentation of sidewalks and bicycle lanes. Fort Carson is constructing 7.5 miles of new running trails. One section of the new trail, 4.5 miles long, will create a new loop around the northwest housing area and a 0.5 mile loop at Pershing Field. Other segments will tie existing networks together and provide greater connectivity from high-density areas to the trail network. A bridge constructed in Iroquois Village allows pedestrians to cross Un-named Ditch and to directly access the Post Exchange complex and the new Weikel Elementary School on Post.

To improve physical training for Soldiers, four sets of top quality steel structured workout stations made from recycled materials were constructed, providing workout equipment and custom designed areas for cross fitness training. Each combatives pit has a surface of recycled rubber mulch and a perimeter of rubber curb.



Custom-designed outdoor fitness equipment was constructed for Soldiers to enhance physical training opportunities.

Finally, the new goal emphasizes Green Infrastructure, or low-impact development (LID), for stormwater design. Green Infrastructure is a technique of managing rainwater prior to it becoming stormwater. There are multiple techniques to achieve Green Infrastructure, including concentrating development to preserve or restore open space. The LID objectives

target larger projects of 5,000 square feet and above. One example of a future Green Infrastructure occurs at the Special Events Center. The plan is to repair the parking lot of the Special Events Center including bio-retention swales.



Planning for a sustainable future includes listening and learning from historical wisdom.

FUTURE INITIATIVES PLANNED

Future initiatives planned at Fort Carson include the evaluation of the “Green Roads” criteria. It will be evaluated for opportunities to incorporate sustainable design and construction features in heavy roads and flatwork construction. Thoughtful planning and engineering of improvements to existing roadways reduces delay, fuel consumption and emissions, while increasing connectivity between people and places.

A pedestrian overpass will be constructed FY11 north of Gate 4 over B Street in Stratmoor Hills. The project will enhance pedestrian travel and safety across Fort Carson’s railroad tracks and the adjacent B and Loomis Streets. While the primary advantages of the overpass to the Installation relate to safety and improved rail operations, pedestrian mobility in the neighborhood will be greatly enhanced and potentially dangerous road and track crossings eliminated.

As existing, semi-permanent buildings are retrofitted using LEED-EB principles, greater walkability, sustainable bicycle racks, and other energy conservation features will be emphasized.

The Sustainable Development Goal continues an emphasis on programming, designing and building LEED certified buildings with a target of all new buildings and major renovations on Fort Carson

minimally attaining LEED Silver certification, and all new buildings and renovations achieving LEED Gold by 2017.

The multiple stops a transit vehicle must make to reach the Installation are an obstacle to attracting riders due to the unacceptable time delays. To address this issue, Sustainable Fort Carson is examining the potential for high sustainability performance Transit-Oriented Developments (TODs) close to the gates to facilitate transit services and usage to Fort Carson workplaces. Transit services for the Fort Carson workforce would decrease the use of private vehicles for commuting purposes. The residents of the future TOD’s are also great candidates for carpooling / carsharing that is accessed through our Share-A-Ride portal. (*Refer to Sustainable Transportation for more information*).

Currently Sustainable Fort Carson is finalizing a report and analysis which narrowed the multiple TOD sites to one identified site where the feasibility is greatest. The selected site resides along existing transit lines, and is adjacent to a regional park and pedestrian/bike trail system. It is close to downtown Fountain, and has great highway access.

CHALLENGES & OPPORTUNITIES

While the major military construction projects, typically \$5 million and above, enjoy robust project design staffs and larger contractors, many smaller projects and renovations are awarded to smaller contractors without LEED experience. Strong partnerships are needed between government designers, contractors, quality assurance representatives and Fort Carson to achieve the LEED-Silver goal consistently. Additionally, to achieve success in LEED projects, the workforce and contractors need further education on LEED standards and expectations in construction.

COMMUNITY PARTNERSHIP

During FY11 Sustainable Fort Carson will participate in a charrette with the Southern Colorado Chapter of the American Institute of Architects, Congress for the New Urbanism, and members of the community in pursuit of a collective vision for the TOD relating to optimal land use, development, and transportation for the region.



SUSTAINABLE PROCUREMENT

Goal: All DoD and Fort Carson procurement actions support sustainability.

Sustainable procurement is the end result of a path begun by the federal government and the Department of Defense through executive orders and policies of the past 20 years. This goal supports all other goals especially Zero Waste, Air Quality, Sustainable Development and Transportation.

GOAL PROGRESS

“Smart” Cars – The Directorate of Family, Morale, Welfare and Recreation (DFMWR) purchased 5 Smart Cars for on demand use to employees conducting directorate business. The cars are “smart” because they are right sized for their purpose.



The DFMWR purchased five Smart Cars to support administrative travel of their staff.

The entire car is 95% recyclable, and is classified by the United States Environmental Protection Agency (EPA) as an ultra-low emissions vehicle. Smart Cars use less gasoline than most vehicles, and are listed by the EPA as achieving 33 miles per gallon in the city and 41 miles per gallon on the highway.

The use of 50% recycled paper increased 1,236% during FY10 as compared to FY08, when Fort Carson developed an aggressive paper policy. The policy mandates recycling, reuse, increases the employee-to-printer ratio, encourages duplex printing, and using digital distribution versus paper when possible.

Cheyenne Shadows Golf Course – To reduce the risk of soil contamination in the event of a spill or leak, the golf course began converting from hydraulic fluid to a biodegradable hydraulic fluid.



Sustainable Procurement best practices help Fort Carson preserve natural resources like the Cheyenne Shadows Golf Course.

Sustainable Playground Equipment – Fort Carson purchased playground equipment for three play areas at a child development center. The ecologically-friendly equipment incorporates multiple recycled materials in its construction and is 100% recyclable. With the look of wood, the building material is 95-98% post-consumer recycled plastic with the remaining percentage being colorant, ultraviolet protectant and a natural hardener.

The playground area, covering approximately 12,000 square feet, is made from 85% post-consumer recycled tires. This rubber safety surface diverted approximately 6,400 tires from the landfill.

Product Life Cycle Analysis – The program completed life cycle sustainability performance reviews of five products that have significant environmental impacts: batteries, mattresses, lighting, cleaning systems and laundry systems. In each area, different technologies and several products were examined for their sustainability impacts in the areas of energy and water use, transportation, materials management, and social performance such as human health impacts.

Fort Carson continues to increase the number of environmentally-friendly products provided for facilities and Soldier barracks, including Energy Star-rated appliances, energy efficient programmable washers and dryers and furniture. The new furniture is a metal and wood hybrid, with the metal components consisting of 70% recycled

content. The beds, desks, lockers and chairs, have a life cycle of 9 years instead of the 6 years expected of current furniture. The first 600 units purchased for barracks rooms are estimated to have saved the Army \$8 million due to the increased life cycle. Choosing furniture made primarily of wood and steel gives Fort Carson options at the end of the furniture's useful life. Thus, it can be deconstructed and recycled, reused or sold, diverting waste from landfills and possibly providing income from commodity sales.

Fort Carson is in the process of implementing a green cleaning policy. The Envision Express store on the Installation supports this effort by stocking sustainable cleaning products for purchase and use by employees, Soldiers and contractors.



Family members select free fresh produce during a farmers market put on by Balfour Beatty Communities, and Colorado Farm to Table at the Joel Hefley Community Center on Fort Carson.

Photo: Balfour Beatty Communities

FUTURE INITIATIVES PLANNED

- Conduct a procurement and waste study in dining facilities with the intention of creating action plans for making them more sustainable
- Publish an Installation-wide sustainable procurement plan which includes sustainable procurement and contract guidelines and tracking procedures
- Pilot a process to review contracts using a sustainability filter (triple bottom line plus evaluations).
- Review a representative sample of purchases and contracts to ensure they include sustainability awareness, procurement and other requirements relative to our goals.

Cheyenne Shadows Golf Course – The golf course will convert to all liquid fertilizer. This product substitution will reduce any chance of leaching nutrients into groundwater.

Sustainable Playground Equipment – Fort Carson is researching the purchase of Boundless Playground equipment. This equipment is made with recycled content and is completely handicap accessible for all ages. Children, parents, grandparents and other caregivers with a disability or limited mobility can freely navigate throughout the play area.

CHALLENGES & OPPORTUNITIES

- Increase education and information about sustainable purchases to contractors, suppliers and employees.
- Incorporate sustainability performance into Fort Carson contracts to expand the market for sustainable materials and services.
- Improve sustainable purchasing opportunities by working with government agencies on Fort Carson that have competing goals, overlapping purchasing networks and separate approval systems.
- Ensure that procurement efforts are not focused solely on “green” procurement, which does not include social impacts and often is a lesser environmental standard than systems-oriented, sustainable procurement.
- Encourage the use of life cycle analysis.
- Seek markets for sustainable products and services that are emerging and expanding.

COMMUNITY PARTNERSHIPS

Sustainable Fort Carson collaborates with community partners for the Operation 60ThirtyFive initiative which identified renewable energy as a key growth industry for the Pikes Peak region. The group analyzed the region's business climate for Cleantech companies and put forth recommendations for community actions to enhance the climate.

Fort Carson's Sustainability Team works in partnership with Colorado Procurement Technical Assistance Centers (PTAC), to provide outreach and education opportunities to businesses seeking to become government vendors. Colorado PTAC is a member of the Southern Colorado Engagement Strategy Working Group (see page 5).



ZERO WASTE

Goal: Total weight of solid and hazardous waste disposed of is reduced to zero by 2027, and every year thereafter.

Achieving zero waste requires the elimination of waste generated and effective use, reuse or recycling of all materials. The success of this goal is dependent in part on sustainable procurement initiatives.

GOAL PROGRESS

An estimated 4,300 tons of waste was diverted during FY10 through recycling, which is a 53% increase in tonnage over FY09. As a result, Fort Carson saved \$466,000 in landfill cost avoidance.

Recycling rates of municipal solid waste exceeded 50% during FY10.

Construction and demolition (C&D) waste diversion constituted more than 70% of total waste generated on the Installation during the same period.

The Acting Commanding General issued a Recycle Policy Letter that requires all Soldiers, civilians and contractors assigned to Fort Carson and Pinon Canyon Maneuver Site to participate in the recycling program. A Standard Operating Procedure establishing guidelines for proper handling of recyclable materials was also issued.

A Soldier Incentive Program was established to reward military units for the best unit recycling program on a quarterly basis.

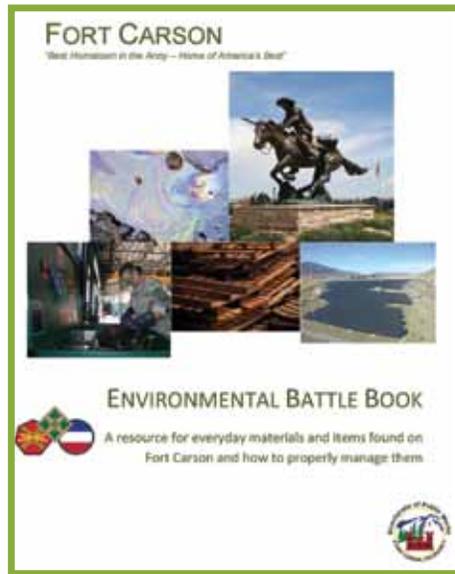
A new Environmental Battle Book, which contains more than 60 “fact sheets” covering such topics as recycling and management of hazardous and non-hazardous materials, was distributed to unit leaders in FY10. This resource will enhance and support the Warfighter, enable mission success and preserve the limited training resources currently available to Fort Carson. The Environmental Battlebook is available at <http://www.carson.army.mil/DPW> or by calling 719-526-4340.

The recycle and refuse programs were combined under the same management to increase efficiencies of both operations. Both programs work closely with

the Air Quality program to facilitate the Hazardous Material Management Program (HMMP), which identifies opportunities to substitute products that are less hazardous and/or more easily recyclable. (Refer to Air Quality section for more information).

Several years ago Fort Carson began recycling its parts washer solvent using two 15-gallon distillers thereby reducing the cost of purchasing new solvents.

“Clean Sweep” operations continue to divert still usable products and save the Army millions of dollars. Unused equipment, paints, tools and other items not deploying with a unit are set aside so other units can “shop” through the materials and claim for their own use.



Other initiatives during FY10 included: (all numbers are approximate)

- Recycled 10,500 lbs of batteries, resulting in savings of \$4,480
- Recycled 14,600 lbs of crushed fluorescent lamps
- Recycled 1400 tons of wood
- Saved \$12,300 through continued operation of Heptane recycling equipment.
- Saved \$12,800 in latex paint disposal costs. The paint is sent to Penrose landfill, where it is mixed with ash in a solidifier and used as daily ground cover.
- A compost bin was constructed in order to recycle the grass clippings and other organic matter for reuse in flower beds and other golf course areas as needed.

Fort Carson partners with other area installations to learn from recycling and reduction activities at other installations, and share information concerning purchases and disposal amounts.



Compost bin at Cheyenne Shadows Golf Course.

FUTURE INITIATIVES PLANNED

Fort Carson, along with five other Army Installations, is participating in a Waste To Energy feasibility analysis with the Army Environmental Command (AEC) and National Renewable Energy Laboratories (NREL). Waste data, cost data and other aspects are being provided for review to determine if a cost effective solution can be pursued.

A portion of the proceeds from recycling efforts will be distributed to Directorate of Family, Morale, Welfare and Recreation (DFMWR) to support an incentive program as well as other Soldier programs and projects supporting pollution prevention and energy programs.

The recycling program will increase recycling points in unit areas of operation to make recycling easier. Facility process reviews will be conducted to determine new waste minimizing procedures.

Medical facilities on Fort Carson continue to upgrade to digital equipment, thereby reducing film developer waste from medical equipment such as mammogram machines.

CHALLENGES & OPPORTUNITIES

Industrial grease, residential electronics, mattresses, enamel paints, Styrofoam, used methanol and fixer (from Evans Army Hospital) are areas targeted for further waste reduction and/or elimination.

Assuring employees and Soldiers are aware of the recycling programs and opportunities available to them on Post is essential. Through articles in the Mountaineer, recycling flyers, Earth Day events and several other initiatives, Fort Carson continues to publicize recycling programs.

Low regional landfill costs and dramatically decreased prices paid for recycled materials during the recent economic downturn make cost-effective recycling a constant challenge.



During a recent event, 2900 lbs of unwanted personal electronics including computers, monitors, VCRs, and stereo equipment were hauled away by DFMWR trucks to be recycled.

COMMUNITY PARTNERSHIPS

On the 23rd Annual Make a Difference Day held at Fort Carson, volunteers oversaw the collection of unwanted personal electronics for recycling. There was no cost to the service, which was in partnership with El Paso County.

A Regional Recycling Consortium initiative to develop an expanded recycling center on Fort Carson in partnership with other local military Installations such as Peterson and Schriever Air Force Bases is under discussion. This would allow for greater flexibility to the DoD to store construction waste and other recyclables.

As a member of the Recycling Coalition of Colorado Springs, Fort Carson participated in the Regional Recycling Summit held during the Southern Colorado Sustainability Conference.



SUSTAINABLE TRAINING LANDS

Goal: Training ranges; maneuver lands; and associated air space capable of supporting current and future military training to standard while maintaining and sustaining training resources.

Sustaining Army training lands requires a multi-faceted approach including scientific stewardship and management of land resources, providing proper equipment for Soldiers, protecting cultural resources and assessing impacts to wildlife. A variety of operational and stewardship policies, programs and procedures are in place to ensure that Fort Carson's training lands are up to standard for the Soldiers of today and tomorrow.



Training land sustainment and natural resources management are interconnected through a number of programs at Fort Carson.

GOAL PROGRESS

- The Installation has made progress in meeting its objectives for training lands at Fort Carson and the Pinon Canyon Maneuver Site (PCMS):
- Preventing the permanent loss of training lands from internal development and management practices
- Protecting training lands from incompatible external encroachment
- Meeting or surpassing environmental management goals for cultural resources
- Maintaining biological and natural resources in sustainable condition

Training Lands and Ranges

Fort Carson achieved its objectives to prevent permanent loss of training lands by participating in internal land use, development and real estate planning efforts and by anticipating and responding to biological and natural resource compliance requirements.

Relatively few training days are lost due to endangered species conflicts, but there are numerous species on

the Installation with declining populations with a high probability of listing as endangered within the next 10-20 years. Listing these species will result in a temporal and spatial loss of the training capacity at Fort Carson. Army Species at Risk, a suite of grassland birds and a species of owl associated with the prairie dog ecosystem, occur within the primary maneuver areas of the Installation and pose potentially serious encroachment risks to the training mission. In addition to answering the question of persistence in a military training environment, Fort Carson biologists are evaluating the potential for developing proactive conservation areas at sites compatible with the mission or at sites where training does not occur.

Invasive plant species are a concern for Fort Carson and PCMS because they impact the ability to use and maintain training areas. Additionally, they limit the success of ongoing natural resource activities targeted at soil erosion control, revegetation, wetlands protection and wildlife management. Biological control of invasive species through the use of insects continues to be a method of interest at Fort Carson and PCMS. Texas AgriLife continued to monitor the biological control agents that were released to control bindweed, tamarisk, knapweeds and Canada thistle. Fort Carson has shared information and worked with counties, private land owners and organizations to identify and control invasive plants.

Army Compatible Use Buffer (ACUB)

Fort Carson made substantial progress towards achieving its objective to create a contiguous 1½ to 2-mile wide proposed training lands buffer around a significant portion of the Installation's southern and eastern perimeter. To date, 16,000 acres of conservation easements, representing 41% of the goal, have been established. Another 6,215 acres have annual conservation easement purchase options.

During FY10, in partnership with The Nature Conservancy, a permanent conservation easement was established on the Hegstrom 960-acre ranch adjacent to the east boundary. Additionally, 1,760 acres of The Walker Ranches open rangeland were converted from an annual purchase option to a permanent conservation easement. With the help of El Paso County, an additional 53 acres were acquired through fee-simple purchases within the adjacent El Rancho development

and in close proximity to Fort Carson's large impact area. Purchase Option Agreements on an additional 6,215 acres of the Walker Ranches to the south and east of Fort Carson's perimeter were renewed. Year-end funding was received to exercise the Walker Conservation Easement Purchase Option in FY11 and the remaining Walker acreage (960 acres) to the south of Fort Carson.

Cultural Resources

Fort Carson continued the priority of archaeological inventory at PCMS for FY10, completing approximately 13,000 acres. Approximately 5,500 acres remain to be inventoried in the priority maneuver area, and the Installation expects to complete inventory of these acres in 2012. Another 900 acres in Lockwood Canyon will be surveyed in 2011 and 2012.



A key component of sustaining training lands is the ongoing effort to educate the public on the Army's cultural resources management and environmental stewardship efforts.

Another cultural resource management initiative included hosting an American Indian Communications Course in response to an expressed need to improve cross-cultural interactions and effectiveness between Fort Carson and consulting Tribes. Project training, planning and consultation protocols to sustain and protect cultural resources that have religious or traditional significance to the Tribes with a cultural affiliation to Fort Carson lands were identified and established. Fort Carson began consultation on a Memorandum of Agreement with the Colorado State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) for the adaptive re-use of five of the historic ranching complexes on the PCMS for limited military training, and on a Programmatic Agreement (PA) for compliance with Sections 106 and 110 of the National Historic Preservation Act. An initial draft of the PA has been forwarded to the SHPO, Tribes, and ACHP, and consultation efforts are scheduled to continue in March-April of 2011.

Biological and Natural Resources

Fort Carson achieved its objectives to maintain biological and natural resources in good to excellent

condition as determined by rangeland monitoring and assessments. Implementation of projects and initiatives in the Integrated Training Area Management Program, Integrated Natural Resources Management Plan and other biological and natural resources plans help to avoid unnecessary training damage, maintain, rehabilitate and enhance the condition of lands impacted by training-related or natural causes. Projects intended to sustain and improve forest and rangeland health, soils, vegetation, invasive species control, wetland protection, endangered/threatened species and wildlife management are critical for long-term training and continued proactive resource stewardship.

Fire-resistant seed mixture is being evaluated in training land rehabilitation projects. Each year, Fort Carson re-seeds areas that are impacted by training, fires and erosion. This initiative would alter the standard seed mixture and include more fire resistant seed variations that could be beneficial in reducing the likelihood of an out of control wildland fire. The initiative is intended to augment areas where wildland fire potential is high and in areas where a fire break is not possible due to terrain. At the beginning of the fiscal year, two sites containing 24 sections of fire-resistant seed mixture have been planted as a test and validation project. Monitoring is ongoing with an anticipated test and evaluation planned for the end of the growing season.

Fort Carson is working with the State of Colorado Department of Natural Resources to close 48 abandoned mines on Post, which are a safety concern to Soldiers and civilians alike. Eighteen of the 48 mines are considered to be critical bat habitat and will require special methods to limit human access while continuing to allow bat access.

FUTURE INITIATIVES

Evaluate training resource impacts in decision making concerning permanent leases and easements with outside parties, such as Colorado Springs Utilities, and Colorado Department of Transportation.

Maximize current available training lands for training use. New project locations will be cleared of Unexploded Ordnance (UXO). Munitions capable of producing UXO will not be used on cleared range projects areas. UXO in non-project areas will be marked and recorded until advancing technologies permit permanent mitigation of UXO. Utilize developing technology to reduce amount of land restricted based on UXO.

Execute an update of the Integrated Cultural Resources Management Plan (ICRMP) and implement a

Programmatic Agreement for compliance with Section 106 of the National Historic Preservation Act.

Complete the revision of the Integrated Natural Resource Management Program (INRMP) at the end of 2011.

Begin facilitating Pueblo County's fee-simple acquisition of undeveloped lots from willing sellers within the residential development of Midway Ranches, Colorado.

Establish a written agreement with Schmidt Construction, City of Fountain, Colorado Springs Utilities, and School of Mines to secure a guarantee of compatible use for their properties into the long-term future.



Fort Carson partners with UCCS on a project to study the impact of training on local deer populations.

CHALLENGES & OPPORTUNITIES

Changing zoning regulations, property and inheritance tax laws as well as shrinking budgets and increased competition for federal dollars, create complex challenges for implementing the ACUB program and buffering the Installation.

Recent management direction to bring services in-house that were previously performed by U.S. Fish and Wildlife Service personnel presents multiple challenges to inter-agency coordination and cooperation. Engagement with the USFWS, Tribes, private citizens and other external stakeholders will continue in order to ensure effective communication, shared understanding of respective needs, good working relationships and mutually beneficial partnerships to address common vision and goals. As native wildlife habitats become developed and populations of today's species of special concern

continue to decline, the value of Army lands will increasingly become important sites for conservation. It is imperative that natural resources programs continue to identify species of concern and to seek ways to effect conservation that are compatible with the training mission. Successful professional interactions with the U.S. Fish and Wildlife Service, Colorado Division of Wildlife and other interested parties will require scientific-based resource knowledge about the declining species on the Installation.

COMMUNITY PARTNERSHIPS

The Installation will continue to seek out the best ideas, share information, collaborate with other organizations and implement activities and projects to sustain training lands for current and future military operations and requirements.

The Army faces a constant challenge of balancing the requirement to sustain biological diversity within the context of the readiness-training mission. Biologically diverse landscapes meet realistic training requirements. Fort Carson natural resources staff and military trainers will continue to partner and accept responsibility regarding the primacy of both missions in order to ensure ecologically intact landscape components are available to meet the future training needs of Soldiers.

Fort Carson participates in the Front Range Eco-Regional Program (FREP) to address accomplishments in invasive plants management. The FREP consists of military installations along the Front Range that include Francis E. Warren Air Force Base (AFB), Buckley AFB, the U.S. Air Force Academy, Peterson AFB, Cheyenne Mountain Air Force Station, Fort Carson/PCMS, Schriever AFB and Pueblo Chemical Depot. The purpose is to share manpower, expertise and resources to collectively enhance natural and cultural resource conservation efforts. The partnership is currently addressing wildland fire and reviewing noxious weed biological control effectiveness.

Fort Carson is a member of the Upper Arkansas Cooperative Weed Management Area (UACWMA), an organization of 8 southern Colorado counties formed to expedite and coordinate weed management efforts among agencies in the upper Arkansas River drainage. The UACWA meets on a monthly basis and is an opportunity for Fort Carson to interact with other counties and federal agencies on the topic of invasive species management. Fort Carson is preparing to renew the 5 year agreement.

FORT CARSON EMBRACES SUSTAINABILITY AS A PARTNERSHIP BETWEEN OUR PRESENT AND OUR FUTURE.

WE ARE COMMITTED TO ACCOMPLISHING ALL OF TODAY'S MISSIONS IN A WAY THAT WILL ALLOW OUR SUCCESSORS TO ACCOMPLISH ALL OF TOMORROW'S MISSIONS.

IN DOING SO, WE PLEDGE TO CONSTANTLY IMPROVE THE WAYS WE CARE FOR, SAVE, REPLENISH AND FIND NEW AND BETTER USES FOR ALL OF THE RESOURCES ENTRUSTED TO US.



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