

Public Works *Digest*

In this issue:

The Environment



Special Section:
Installations Symposium, see p. 26



U.S. Army Installation Management Agency

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On the cover:

Mr. Rich LeClere, Chief of the Natural Resources Branch, Environmental Division, Fort Drum, accepts the 2004 Secretary of the Army award for Natural Resources from Mr. Geoffrey Prosch (left), Principal Deputy Assistant Secretary of the Army for Installations and Environment, and Mr. Raymond Fatz (right), Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health. Photo by Stephen Oertwig, HQ IMA.



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LETTER FROM THE EDITOR



The May/June 2005 *Public Works Digest* on the environment covers many important issues and current events, including environmental awards, environmental successes, environmental management, new technology and the Installations Symposium. We are grateful to the U.S. Army Environmental Center for providing many of those articles so essential to keeping DPW staffs up-to-date on the latest Army environmental news.

Once again, the winners of the Secretary of the Army Environmental Awards, five installations, one individual and one team, were chosen for their outstanding dedication to environmental stewardship on Army installations. Two of the winners of the 2004 awards repeated their success in the competition for the coveted Secretary of Defense Environmental Awards, presented at the Pentagon earlier this month. Lt. Col. Michael Tarpley from Camp Beauregard, a little known Army installation in Louisiana, snagged the top honor in the individual Cultural Resources Management category and Fort Drum, NY, won for a large installation in the Natural Resources Conservation section. Congratulations to all the winners in both competitions!

Sharing their environmental successes are Fort Bliss, Fort Campbell, Carlisle Barracks, Fort Bragg, Fort Sill, Fort Drum, Fort Lewis, Tobyhanna Army Depot, Hawaii, and the United States Military Academy at West Point, NY. They run the gamut from reducing emissions to reducing hazardous waste to demonstrating sustainable products to moving to alternative fuel to completing environmental cleanup to recycling deconstruction material to celebrating Earth Day in a big way.

The importance of Installation Planning as it relates to the environment is clearly outlined in an article by Jerry Zekert, HQ USACE, in the Environmental Management section. Other topics covered in this section include launching a community partnership web site, offering environmental management system incentives and meeting community relations requirements.

This issue also provides highlights of the first Installations Symposium sponsored by the Association of the United States Army (AUSA) and the Installation Management Agency (IMA), which was held in Kansas City, Mo., last March. If you didn't have an opportunity to attend, don't miss reading about the important presentations made by the Army leadership during the General Sessions. The Public Works track, one of four which took place concurrently, is also presented in some detail. In addition, look for the photos and brief write-ups on the winners of the annual DPW awards, which were presented by Mr. Geoffrey Prosch, Principal Deputy Assistant Secretary of the Army for Installations and Environment, during the Public Works track of the symposium. Mr. Patrick Bennett, Technical Director of Public Works for the 100th ASG in Germany, was hailed as the DPW Executive of the Year.

As we go to press, the proposed BRAC 2005 list is creating quite a stir and will be covered in the July/August issue of the *Digest*, which will feature facilities engineering. The deadline for submitting articles is June 24, so don't wait to let us know what is going on at your installation.

Until next time...

Alexandra K. Stakhiv

Alexandra K. Stakhiv, Editor, *Public Works Digest* **PWD**



Secretary of Defense 2004 Environmental Award winners named

Ten military installations and individuals have been identified to receive the 2004 Secretary of Defense Annual Environmental Awards in an awards ceremony planned for May 4, 2005, in the Pentagon. A panel of expert judges from the government, non-profit and private sectors recognized the winners for excellence in five categories: cultural resources management, environmental quality, environmental restoration, natural resources conservation, and pollution prevention.

The award winners by category are:

Lt. Colonel Michael Tarpley - Camp Beauregard, La.
Individual - Cultural Resources Management

Marine Corps Recruit Depot Parris Island, S.C.
Installation - Cultural Resources Management (tie)

15th Airlift Wing, Hickam Air Force Base, Hawaii
Installation - Cultural Resources Management (tie)

Naval Air Depot Cherry Point, N.C.
Industrial Installation - Environmental Quality

Misawa Air Base, Japan
Overseas Installation - Environmental Quality

Naval Facilities Engineering Command Pacific,
Hawaii
Installation - Environmental Restoration (tie)

Keesler Air Force Base, Miss.
Installation - Environmental Restoration (tie)

Fort Drum, N.Y.
Large Installation - Natural Resources Conservation

Tinker Air Force Base Pollution Prevention Team,
Tinker Air Force Base, Okla.
Individual/Team - Pollution Prevention

Commander Navy Region Mid-Atlantic, Va.
Installation - Pollution Prevention

Recognizing excellence in environmental management is a crucial element in Department of Defense efforts to support the twin imperatives of producing the best-trained military force in the world while providing the best environmental stewardship possible. Each year, the secretary of defense honors installations, teams and individuals for outstanding environmental management by military and civilian personnel, at both domestic and overseas bases, to sustain military readiness, and training and operational capabilities.

This year's Secretary of Defense Environmental Awards ceremony is scheduled for May 4, in the Pentagon Auditorium.

Detailed information on the secretary's Environmental Awards can be found at <https://www.denix.osd.mil/denix/Public/Library/Awards/awards.html> **PWD**

Secretary of the Army recognizes environmental excellence

by Margaret Schnebly

Five installations, one team and one individual received fiscal 2004 Secretary of the Army Environmental Awards for their dedication to environmental stewardship while sustaining the Army's mission.

Two Army winners went on to earn environmental awards from the Secretary of Defense: Lt. Col. Michael Tarpley of the Louisiana National Guard, for cultural resource management, and Fort Drum, N.Y., for natural resources conservation.

Some of the noteworthy accomplishments credited to this year's winners include: identifying a new, quick and cost-effective method for the removal of chlorinated solvents from soil; creating a Native American Keepsafe Cemetery that will protect Native American artifacts; developing a tool that can create large-scale land



Mr. Rich LeClere, Chief of the Natural Resources Branch for the Environmental Division, Fort Drum, accepts the 2004 Secretary of the Army award for Natural Resources from Mr. Geoffrey Prosch (left) and Mr. Raymond Fatz, Photo by Stephen Oertwig, HQ IMA



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cover maps of an entire installation; and conducting community education events such as cultural enrichment lectures.

“These installations, teams, and individuals demonstrate the Army’s commitment to successful stewardship of the environment. They represent some of the nation’s most innovative and effective environment programs - programs that also enhance the Army’s ability to provide the nation a secure future,” said Raymond J. Fatz, Deputy Assistant Secretary of the Army for the Environment, Safety and Occupational Health. “Their dedication and expertise has earned them the Army’s highest honor for outstanding environmental stewardship.”

Representatives from the U.S. Army Environmental Protection Agency; the U.S. Fish and Wildlife Service; the U.S. Coast Guard; the Advisory Council on Historic Preservation; the National Land Trust; the Nature Conservatory; the Office of the Federal Environmental Executive; and regulators from Colorado, Maryland, and Missouri served as judges.

The Army invests in environmental programs to move beyond mere compliance with environmental regulations. Practicing responsible environmentalism while sustaining realistic training and testing capabilities ensures American Soldiers can successfully fight the Global War on Terrorism.

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Margaret Schnebly is a Booz Allen Hamilton, Inc., associate supporting the U.S. Army Environmental Center Public Affairs Office. PWD



Mr. Geoffrey G. Prosch, Principal Deputy Assistant Secretary of the Army for Installation and Environment, Maj. Gen. Geoffrey Miller (left), Assistant Chief of Staff for Installation Management, and Mr. Raymond Fatz (right), Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health, present the 2004 Secretary of the Army Environmental Awards. Photos courtesy Stephen Oertwig, HQ IMA





Louisiana preservationist becomes part of Guard history

Like many of the relics and treasures under his care, Lt. Col. Michael Tarpley has found his place in the history books of the Louisiana Army National Guard.

The Pollock, La., native, cultural resource manager for the Louisiana guard, recently won the 2004 Department of Defense Environmental Award for cultural resource management.

“Lt. Col. Tarpley’s innovative style and foresight has allowed all of us to accomplish what we are supposed to as Soldiers and to train in a much more efficient manner,” said Brig. Gen. (Retired) Robert A. Lee. “He truly has the Soldiers and Airmen at heart.”

Tarpley’s programs are designed to enhance training lands, thus serving the military mission of readiness. Some of his significant accomplishments include the development and implementation of the Defense Department’s first Traditional Cultural Property inventory, covering places of religious and cultural significance to federally recognized tribes affiliated with Louisiana National Guard properties.

Tarpley also developed the Native



Lt. Col. Michael Tarpley visits with Charlie Chibity, the last surviving Comanche code talker of WWI, at Camp Beauregard, La. Tarpley documented the oral history of the Choctaw code talkers of WWI and the Comanche code talkers of WWII, who trained at Camp Beauregard.

American Keepsafe Cemetery, the military’s first place dedicated to the reburial of Indian remains accidentally discovered on training land.

His program identified over 500 previously unknown archaeological sites, developed a leaders’ environmental handbook and cultural resources training for Soldiers, and formed a partnership with the Louisiana State Historic Preservation

Office to successfully advocate for an increase in penalties for archaeological crimes on state land.

These programs are having effects beyond the realm of the Louisiana guard.

“Mike recognized the importance of bringing federal tribes to the table to participate in integrated cultural resources management planning,” said Dr. Tom Eubanks, archaeologist for the state of Louisiana. “He built the smoothest consultation process and his tutelage extends beyond the Army. The Federal Highway Administration and the Louisiana Department of Transportation have since developed similar programs.”

Tarpley manages cultural resources at five major installations and 80 armories, covering 1,352 buildings and 29,000 acres of training land. He is also responsible for two National Register Historic Districts, 43 National Register structures and 511 American Indian Cultural Sites.

Tarpley entered the DoD competition as a 2004 Secretary of the Army Environmental Award winner for cultural resources management. **PWD**

Radford’s closed-loop approach a success

Virtually every Soldier fighting the Global War on Terror in Iraq and around the world handles, transports, fires or detonates the propellants and explosives manufactured at Radford Army Ammunition Plant, Va.

Radford recently started using a closed-loop system to reduce the biggest waste stream generated when making nitrocellulose, the primary base material used in virtually all Department of Defense propellants.

The technology has been so valuable that it helped the environmental team at Radford win the fiscal 2004 Secretary of the Army Award for Pollution Prevention. With an infrastructure dating to the 1940s, and anticipating restrictions on the plant’s only incinerator, Radford officials began searching for a new approach to nitrocellu-

lose waste management.

The plant’s staff found a process using anaerobic biodegradation, the breakdown of organic contaminants by microorganisms when oxygen is not present. The team was honored for its dedication in overcoming challenges through the use of new technology to treat waste during accelerated manufacturing.

“The biodegradation effort is innovative, environmentally sustainable and great in reducing the use of incineration of hazardous waste streams. And by avoiding incineration ... it



Radford - Radford Army Ammunition Plant continuously works to incorporate P2 in all of the processes associated with the production of nitrocellulose, the primary base material used in virtually all DoD propellants. Photo courtesy Radford Army Ammunition Plant.

enhances the air quality in Radford and surrounding communities,” said Juan ➤



Hawaii integrates cultural resources and training mission

The historical development of Hawaii produced a vast, unique cultural heritage spread across every island, including land Soldiers need for training.

U.S. Army Garrison Hawaii is responsible for 907 archaeological sites on 108,000 acres of training lands, and 795 historic buildings and structures in three National Historic Landmark Districts.

Its success in preserving the cultural resources native to Hawaii, supporting military readiness and creating valuable relationships with communities across the state recently earned the garrison a fiscal 2004 Army Environmental Award for cultural resources management.

Over the past two years, while Soldiers of the 25th Infantry Division prepared for deployment to Iraq and Afghanistan, the garrison has worked to fulfill its responsibilities to protect treasured cultural resources.

Garrison staff surveyed 28,063 acres of training lands, identified 249 new archaeological sites and supported 35 range development projects. The garrison developed Geographic Information Systems (GIS) maps and standard operating procedures for training ranges to identify where and how Soldiers can dig into the ground.

Off the range, the garrison participated in or sponsored various community events, such as a partnership with Imi Pono no ka Aina (Excellence for the Land), a high school environmental education program to teach students how to identify, preserve and protect cultural resources.

"[The Garrison's program shows an] extremely impressive breadth of responsibilities and accomplishments. Staff changes reflect a solid understanding of and commitment to the cultural resources program... and saved money for the Army," said Robin L. Burgess, Federal Preservation Officer for the Bureau of Land Management and a judge in the awards competition. "Every accomplishment ... speaks of a level of understanding, energy and attention to detail that was truly outstanding."

The cultural resources management program mission is to provide outstanding stewardship and increased appreciation of cultural resources while supporting training, range sustainment and quality of life on post.

"The garrison has an exceptional record of stewardship for cultural resources, fulfilling the letter and the spirit of the National Historic Preservation Act," said Laura Skaggs, director of Federal Agency Affairs, National Trust for Historic Preservation.

The U.S. Army Garrison-Hawaii consists of the Fort Shafter, Schofield Barracks and Pohakuloa Training Range communities. Although these communities are geograph-



Archaeologists Carly Antone and Alton Exzabe excavate an archaeological site at Makua. Photo by Spc. Charles Hayes



Carly Antone, an archeologist working in Makua Valley, Hawaii, gives a class on some of the archeological sites and discussed some of their findings with local students.

ically separate, the garrison is organized, staffed and operated as a single post.

PWD

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Lopez, senior program manager in the Office of Federal Environmental Executive and a judge for this year's award competition.

Radford has been able to reduce nitrocellulose waste by 690,000 pounds and eliminate 500,000 pounds of caustic material (previously considered hazardous

waste) from off-site disposal to date. These changes cut costs and further protected the community and environment.

To dispose of 200,000 pounds of nitrocellulose waste will cost the Army \$10,000 through biodegradation versus \$400,000 through incineration.

"Radford has distinguished itself as a leader with its clever twist on an existing, environmentally sound technology," said

T. J. Granito, environmental management system/pollution prevention program manager for the U.S. Coast Guard, and another awards judge.

Radford Army Ammunition Plant was established during World War II. The government-owned, contractor-operated military installation is the Army's largest manufacturer of finished propellants and propellant constituents. **PWD**



Fish and Wildlife Service presents first military installation award

by Susan C. Galentine

Fort Carson received the first U.S. Fish and Wildlife Service Military Installation Conservation Partnership Award presented during a ceremony in Arlington, Va., March 17.

The award acknowledges a 30-year relationship between the Fort Carson Directorate of Environmental Compliance and Management and the USFWS in Colorado.

The Fort Carson DECAM is responsible for environmental management of more than 373,000 acres within the Central Shortgrass Prairie Ecoregion. Post environmentalists said the installation's programs serve as an excellent model of land stewardship with innovative environmental programs that go beyond compliance with environmental regulations by including comprehensive natural resource management.

"We have been very successful over the years in conserving the Army's natural resources at Fort Carson and a primary reason has been the long standing collaboration and true partnership with the U.S. Fish and Wildlife Service, as well as with our neighbors," said Gary Belew, Natural and Cultural Resources Division chief of the DECAM. "We have established a model program where two federal agencies have worked tirelessly to collaboratively manage and conserve wildlife in the most effective and efficient manner."

He said Fort Carson's efforts have focused on conservation of declining native species, such as the Mexican spotted owl, mountain plover, swift fox, peregrine falcon, greenback cutthroat trout and the Arkansas darter. Installation environmental programs also encompass outdoor recreation, law enforcement, cultural resources management and pollution prevention services.

Belew said high profile conservation projects such as the Army Compatible Use Buffer initiative wouldn't be possible without Fort Carson's proactive engagement of local, state, federal and non-governmental entities, such as The Nature Conservancy. The ACUB initiative involves partnering with adjacent private and public landown-

ers in an effort to offset the impacts of encroachment on training through the purchase of conservation easements.

The ACUB provides for the protection of species habitat on a regional basis. Environmentalists hope this will lessen land-use restrictions on Fort Carson. This could work by preventing the need to list species as the mountain plover and black-tailed prairie dog as threatened or endangered by conserving substantial habitat areas before they are listed.

Fort Carson has gone outside the fence line to engage neighbors of the installation and ensure open communication and good relationships thrive. One such neighbor is Gary Walker, one of the private landowner to the southeast of Fort Carson whose land is involved in the ACUB initiative.

"We have shared a 20 mile common boundary with Fort Carson for the past 40 years. In that time we have seen an area that was almost void of wildlife become one of the richest wildlife habitats in Colorado," said Walker. "Fort Carson has become the finest neighbor the Walkers have ever had. No matter how large or small of a request, Fort Carson has always been there to help. One reason Walker Ranches will always remain a ranch is because of the wonderful benefits of living next door to 'My Fort'."

Fort Carson, along with Fort Hood, Fort Lewis and Fort Bragg, is one of the first four Army installations to embrace "sustainability" and the concept of conserving resources now to ensure they are available for the future. The installation has hosted three regional sustainability workshops and established 12 25-year goals with input from community stakeholders.

The goals address such wide ranging issues as reducing energy use and researching renewable energy sources; conserving water; reducing solid waste through recycling initiatives, affirmative procurement; reducing automobile dependency; reducing air pollution and waste generation; ensuring training ranges can continue to support



The Mexican Spotted Owl is among the species protected by environmental efforts at Fort Carson, Colo. Photo by Susan C Galentine

military training; building more environmentally-friendly facilities and other installation and regional concerns.

Partnering to share resources has provided opportunities for both the Army at Fort Carson and the USFWS to maximize environmental endeavors in the region, said Birgitte Dodd, Fort Carson sustainability planner. For over 20 years, partnership agreements have enabled USFWS staff to work at the DECAM providing their expertise and experience.

The Military Installation Conservation Partnership Award gives a nod at a new era of intergovernmental cooperation, Belew said. The Army is not doing business as it used to, where most installations were posited as isolated islands of land stewardship. The collaborate efforts show a new Army, willing to work with other government agencies to resolve environmental issues on a regional level that potentially impact military training, as well as natural resources.

Susan C. Galentine works in the Directorate of Environment and Management at Fort Carson, Colorado **PWD**



Big picture environmental approach pays off

At Fort Drum, N.Y., environmentalists are no longer just talking about big picture ecosystem management. These days they are carrying it out and ensuring Soldiers reap the benefits.

The development and use of Natural Resource Management Units (NRMU) to implement an ecosystem approach to natural resources management allowed Fort Drum to emerge as a leader within the Army and Department of Defense.

Critical data from this effort is helping Fort Drum and Army leaders plan and execute training for Soldiers preparing for combat at Fort Drum, and recently helped the installation earn fiscal 2004 Secretary of the Army and Secretary of Defense Environmental Awards.

“The natural resources management team at Fort Drum has been visionary in their development of a natural resource classification standard. I am especially impressed that a relatively small installation staff have single handedly developed and implemented this classification system,”

said Laura Henze, a National Sikes Act Coordinator for the U.S. Fish and Wildlife Service, and a judge for the Secretary of the Army competition.

The Fort Drum environmental staff developed the NRMU classification system using Geographical Information Systems tools that allowed them to map, divide and classify all of Fort Drum’s acreage. This resulted in the development of the first large-scale land cover map of the installation.

The new organization method allows the staff to effectively capture and integrate information across the installation, thus helping to plan and implement ‘big picture’ ecosystem management.

“Highlighting Fort Drum’s achievements show the rest of the environmental community that the military shows foresight into the future needs of natural resources management and is proactive in implementing developments,” Henze said.

“Supporting our military mission is the



Maintaining the Indian River on Fort Drum, N.Y.

primary focus for the work we do,” said Rich LeClerc, Natural Resources Branch Chief at Fort Drum’s Environmental Division. “Our goal is to use sound environmental stewardship practices to support the well-being of Soldiers, their families, and our precious natural resources, and in terms of the NRMU concept, we’re proud that we’re succeeding.” **PWD**

Groundbreaking pilot study proves successful

Fort Riley’s environmental restoration program broke ground both literally and scientifically for a recent environmental cleanup.

In March 2004, Fort Riley began a soil remediation pilot study to remove chlorinated solvents a former graveled motor pool and artillery gun shed area. Working with Kansas Department of Health and Environment, the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers, Fort Riley staff developed a way to use potassium to remove chlorinated solvents in soil.

The approach involved removing an area of asphalt and inserting potassium directly into the groundwater. As the potassium moved through a pump, it interacted with chlorinated solvents and destroys the solvents and chemicals in the water, breaking them down until the contamination is no longer harmful. The method proved to be time and cost effective for Fort Riley, saving

the installation approximately \$4.5 million.

The success of this effort and Fort Riley’s overall restoration program recently earned the installation a fiscal 2004 Secretary of the Army Environmental Award and the praise and confidence of its community.

“I am proud of Fort Riley and its continuing efforts to preserve our environment by improving the quality of water, air and natural resources through sensible and meaningful actions,” said Congressman Jerry Moran, R-Kan.

The current challenge is to adequately investigate these and obtain regulatory closure for more than 50 of Fort Riley’s installation restoration program sites once designated as closed without regulatory concurrence.

“The Fort Riley IRP staff has shown an outstanding commitment to environmental stewardship. Combined with their technical expertise, problem solving skills and cooperation, the Installation Restoration Program team has worked effectively with the regula-



A machine injects liquid potassium permanganate into a cleanup site on Fort Riley, Kansas.

tors and local community not only to achieve substantial time and cost savings, but to implement highly effective environmental solutions,” said Rob Weber, from the Kansas Department of Health and Environment. “It has been a pleasure to work with these dedicated individuals to meet the needs of the Army, the EPA and the state of Kansas.”

PWD



Tobyhanna Army Depot drops emissions

Significantly reducing emissions in the face of wartime operations helped earn Tobyhanna Army Depot in Pennsylvania a fiscal 2004 Army Environmental Award for Environmental Quality from the Secretary of Army.

Tobyhanna decreased its emissions by 23.4 percent while its workload increased 40 percent over two years in support of the war effort. The depot also earned \$275,000 through its recycling program. It also became the first federal facility to enter the Environmental Protection Act National



Tobyhanna painter Donna Sheebey-Frizzie uses low Volatile Organic Compound (VOC) paint on a component from an Air Force Range Threat System maintained at Tobyhanna Army Depot.

Waste Minimization Partnership program. Additionally, the depot surpassed Army Environmental Management System (EMS) goals, becoming ISO 14001 certified in November 2003 through a third party audit by Orion Registrar, Inc. The audit demonstrated that Tobyhanna has a fully implemented EMS that meets the highest international standards.

“Tobyhanna has a fully developed environmental management system that has kept the facility in compliance as well as achieving environmental improvements,” said Stephen Pattison, Maryland Department of Environment’s assistant secretary for programs, and a judge in this year’s competition. “Tobyhanna sets a standard for developing and implementing a quality program and sets a fine example for any organization with environmental compliance responsibilities.”

As a command priority, the depot’s environmental program has a clear goal: To sustain its mission while upholding the four key objectives of its environmental policy—prevent pollution, minimize impacts, ensure environmental compliance and continuous improvement. Tobyhanna is committed to attaining success through strategic, long-term planning to guide its environmental programs.

“The entire Tobyhanna Army Depot community is committed to sustaining an outstanding environmental program that ranks with the best in the Defense Department and the private sector — meeting or exceeding all requirements and standards



Staff Sgt. Gillom Smith uses a recycling container in Tobyhanna Pines, the family housing area of Tobyhanna Army Depot.

Photo courtesy Tobyhanna Army Depot

for environmental compliance.” said Col. Tracy Ellis, commander. “This effort makes us more efficient and effective in our mission performance; supports our obligation and commitment to be proper stewards of resources; and is simply the right thing to do.”

The Army has maintained a nearly continuous presence in Tobyhanna since 1912, when the site was first used as a field artillery training camp. Today, the Depot is the largest, full-service electronics maintenance facility in the Department of Defense. The Depot’s mission is total sustainment, including design, manufacture, repair and overhaul of hundreds of electronic systems. **PWD**

Fort Bragg partnership earns Secretary of the Interior award

The pioneers of the Army compatible use buffer concept received an award for “Communication, Consultation, and Cooperation, all in the service of Conservation” from Interior Secretary Gale Norton in February.

The North Carolina Sandhills Conservation Partnership earned Norton’s “Four Cs” award for its work to conserve and manage land near Fort Bragg, N.C., for the benefit of endangered species and Soldier training.

The partnership is responsible for land and easements totaling more than 9,000 acres. It includes the U.S. Fish and Wildlife Service, Fort Bragg, the U.S. Army Environmental Center, the North Carolina Wildlife Resources Commission, The



Fort Campbell program supports Soldiers

At Fort Campbell, Kentucky, units are reporting increases in readiness of 25-30 percent, and claim much as 69 percent in cost savings thanks to one installation program: pollution prevention. Add to the cost savings a fiscal 2004 Secretary of the Army Award in that category, and the Fort Campbell program can easily be called a success.

“Fort Campbell also sets a model and leads by example for other federal, state and local facilities to emulate,” says Juan Lopez, Senior Program Manager at the Office of the Federal Environmental Executive and a judge in the awards competition. “Fort Campbell integrates very effectively suitable principles into military responses, as well as environmental stewardship,”

The program has saved more than \$1 million and reduced the quantity of installation hazardous waste by over 80 percent through installation-wide improvements in materials management, mission readiness, environmental compliance and cost savings.

Pollution prevention is only part of an effort to incorporate the installation’s environmental management system, sustainability plan and strategic plan into every practice and initiative, ensuring effective management and a more sustainable fighting force.

The Pollution Prevention Operation Center (PPOC) is the cornerstone of this effort. The PPOC relieves Soldiers and their units from most hazardous materials management responsibilities. Its various programs include shelf life management, battery management, and refrigerant reclamation. Its staff recently efficiently pack-



Fort Campbell Pollution Prevention Operations Center staff offer safety, pollution prevention and hazardous materials storage information.

aged 141 unit contingency hazardous materials packages and handled 2,635 walk-in orders in support of mass emergency deployment of more than 20,000 installation personnel. This ensured no unit experienced delays due to packaging or material availability.

“Fort Campbell’s pollution prevention success can be attributed to the use of effective strategic planning to sustain military training lands, as well as the implementation of an Environmental Management System to connect and centralize pollution prevention efforts across the installation,” said Col Tony R. Francis, commander of the U.S. Army Environmental Center.

The state of Tennessee honored Fort Campbell with the Governor’s Award for Excellence in Local Government Stewardship in 2004, and the Governor’s Award for Excellence in Hazardous Waste Management in both 2003 and 2004. Fort Campbell was awarded the White House Closing the Circle Award for Model Facility; was one of the 50 finalists for the Harvard Innovation Award for their PPOC and received honorable mention in the White House Closing the Circle Award for Solid Waste and Recycling. These awards only further demonstrate the impact and success of Fort Campbell’s pollution prevention program. **PWD**

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Nature Conservancy, the Sandhills Ecological Institute, and the Sandhills Area Land Trust.

Norton honored the North Carolina Sandhills Conservation Partnership for building relationships with people involved in decisions about natural resources, creating “win-win situations” for the partners

and the environment, according to a Department of Interior release.

The effort eventually led to the Army Compatible Use Buffer program. In all, more than 8 installations and 100,000 acres are protected.

The award recognizes an Interior employee or a group who demonstrate exceptional contributions, methods, and

efforts to promote Norton’s initiatives under the Department of the Interior “Four C’s” philosophy. Peter Campbell, U.S. Fish and Wildlife Service representative, accepted the award on the partnership’s behalf.

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Alternative fuel comes to Fort Bliss

by Jesus Moncada

Fort Bliss, Texas, commemorated the opening of the first ethanol vehicle fueling station in the El Paso County area on Dec. 16, 2004. The Fort Bliss ethanol fuel station is the third of its kind on a federal facility in Texas. Garrison Commander Col. Bryon Greenwald provided the keynote address and was one of several to cut the ribbon officially opening the fueling station. Attendees included city Rep. Robert Cushing, Regional Director of the Texas Commission on Environmental Quality Archie Clouse, Clean Cities Coalition members Troy Hicks and Carlon Bennett, other dignitaries, representatives of the General Services Administration and various offices on Fort Bliss.

Moving to alternative fuel served a dual-purpose initiative: promoting cleaner air and reducing the dependency on imported crude oil.

The El Paso area is currently non-attainment for air quality for ozone, carbon monoxide and particulates. The U.S. Environmental Protection Agency designates a geographic area as non-attainment if the air quality cannot meet federal clean air standards.

Alternative fuels are known to reduce tailpipe emissions of toxic air pollutants. Furthermore, the fueling facility is an important step for the installation to meet a presidential mandate called Executive Order 13149. This mandate calls for the support and usage of alternative fueled vehicles and alternative fuels at all federal facilities. Using alternative fuel not only demonstrates a commitment from the U.S. Army as an environmental steward, it additionally reduces air pollution and dependency on foreign crude oil.

Ethanol is an alternative fuel like propane and natural gas, but it is an alcohol made from corn or corn by-products. Like these and other alternative fuels, it burns much cleaner than unleaded gasoline, which releases toxic air pollutants or tailpipe emissions such as benzene and carbon monoxide.

Ethanol releases carbon dioxide from the tailpipe, which is then used by plants (like corn) and trees to respire oxygen back into the environment which human beings

breath, thereby, closing the cycle. The ethanol dispensed is a mixture of the 15 percent unleaded gasoline and 85 percent ethanol, i.e., the term "E-85."

The ethanol fueling station located at Fort Bliss will support more than 150 flexible-fuel vehicles. Fort Bliss has historically supported alternative fueled vehicles; however, there has been little support to provide the alternative fuel these particular vehicles need.

There are two types of alternatively fueled vehicles: bi-fueled and flexible-fueled vehicles. Bi-fueled vehicles have two separate fuel tanks each dedicated to one particular fuel. Compressed natural gas and propane fueled vehicles are examples of bi-fueled vehicles. Flexible-fueled vehicles have one fuel tank that can use either unleaded gasoline or the alternative fuel, like E-85.

Robert Galindo, Fort Bliss transportation manager, hopes to include other federal agencies like the International Boundary and Water Commission as E-85 users. Construction of the facility began in late 2003 under an initiative taken by Galindo to refurbish an excess diesel fuel tank. Although the construction took a few weeks, the growing pains of dispensing the



The 1999 Chevy Tahoe SUV is one of 150 flexible fuel vehicles on Fort Bliss that use E-85.

new fuel took longer. It took about one year before the facility was ready for full operation. There was much learned from the start of construction until opening day. Geologist and Tanks Program Manager Robert J. Lenhart stated that "the initial conversion of the JP-8 system did not address the fact that E-85 fuel is not compatible with certain metals and other commonly used materials." E-85 is a very corrosive material and needs special equipment to store and dispense the fuel.

Future prospects for Fort Bliss are to expand the alternative fuel program to include a public-government partnership for a CNG fueling station and bio-diesel fuel for heavy, non-tactical vehicles like construction equipment.

"With the addition of E-85 ... Fort Bliss has stepped up its commitment to the El Paso community," stated Clean Cities Coalition member Carlon Bennett, "not only playing a leadership role in protecting our nation but also in defense of our natural resources. Energy diversity is key to the long-term security of our nation, and Fort Bliss is leading the way. With future plans to utilize compressed natural gas and bio-diesel ... Fort Bliss will be one of the most energy diverse military installations in the world."

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Jesus Moncada is the Air Program Manager, Directorate of Environment, U.S. Army Air Defense Artillery Center and Fort Bliss. **PWD**



The newly installed E-85 dispenser is constructed of non-corrosive materials required to handle ethanol.



Fort Sill completes environmental cleanup

by Stephanie Sigler and Jean Skillman

Environmental cleanup was completed nine years ahead of schedule at Fort Sill, when the last restoration sites on the installation achieved “response complete” status in February.

The southern Oklahoma installation completed its Installation Restoration Program (IRP) \$21.8 million under cost projections and accelerated the completion date from 2014 to 2005.

Bringing in the project ahead of time and at a substantial savings to taxpayers illustrates the Army’s vision to be the national leader in cleaning up contaminated land, said James Daniel, chief of the U.S. Army Environmental Center Cleanup Division. The achievement moved the Army one step closer to the closeout of its entire Environmental Restoration Program.

Environmental restoration at Fort Sill began in 1987, when the installation applied for a Resource Conservation and Recovery Act (RCRA) hazardous waste permit. RCRA required the installation to take action to correct past releases of hazardous waste and materials from identified sites.

In 1990, the Environmental Protection Agency identified 120 solid waste management units (sites or groups of related sites) at Fort Sill. The agency later determined that activities at Fort Sill did not require a permit, and the application was withdrawn. This change resulted in a significant economic savings for the Army and the U.S. taxpayer.

Of the 120 management units, 69 required additional investigation, and Fort Sill placed them in its IRP for further investigation or cleanup.

Based on the installation’s working relationship with regulators, EPA determined that Fort Sill was addressing the sites in a timely and appropriate manner, without the need for a costly and time-consuming consent order. Instead, necessary actions would be addressed under the Oklahoma Department of Environmental Quality’s (ODEQ) Voluntary Cleanup Program and a Defense

and State Memorandum of Agreement (DSMOA). The Voluntary Cleanup Program allows private parties and government entities to voluntarily investigate and if warranted, clean up properties that may be contaminated with hazardous wastes.

The Voluntary Cleanup Program is managed within the guidelines of the IRP and DSMOA processes as compared to a formal regulatory driven approach, according to Hal Cantwell, ODEQ regulator.

“The emphasis was on identifying problems by working out a plan and strategy that met the requirements of the Army and the ODEQ and by performing the investigations and remediation with flexibility and consensus,” said Cantwell. “The foundation of all this was communication – both formal and casual.”

The working relationships forged between Fort Sill and its regulatory partners were a vital component of Fort Sill’s restoration program, said Bob Rowden, environmental program manager at Fort Sill.

“Teamwork with open communication is the key to any program’s success,” said Rowden. “If it was not for the support and cooperation from our state regulators, we could not have completed the program in the time or at the cost savings that we did.” Innovative approaches to cleanup and technology were used frequently. One example was the Site Characterization and Analysis Penetrometer System (SCAPS) to locate contaminants in soil and groundwater faster and more cost-effectively than most conventional technologies.

SCAPS uses a truck-mounted system to push an instrumented probe into the ground to rapidly characterize soil types and to detect and delineate the presence and extent of subsurface contamination. A variety of sensors can be attached to the probe detect different compounds.

The use of SCAPS during the Sitting Bear Creek Landfill investigation helped reduce investigation-derived waste and shorten the investigation effort from 30

days to 10, saving approximately \$100,000.

According to Rowden, the close working relationship of its restoration team, which included installation staff, the U.S. Army Environmental Center, EPA, ODEQ and the U.S. Army Corps of Engineers, accomplished these savings by taking a proactive approach and using common sense throughout investigation and remediation.

“Training Soldiers to fight and win wars is the Army’s primary mission,” said Jim Daniel, USAEC cleanup division chief. “The dollars saved from successful cleanup programs, like this one at Fort Sill, can be put back into the program for the cleanup of other installations, ultimately saving time and taxpayer dollars and ensuring today’s Soldier has the land to train on tomorrow.”

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Recycling deconstruction material at Fort Drum

by Karen Taylor-Haynes, Ann Wood and John Gerhard



Building T-215 partially demolished.



Building T-215 loaded debris material in trailer.



Building T-215 concrete and brick debris at reclamation site.



Taylor Recycling facility wallboard recovery operation.

Fort Drum is an active U.S. Army installation located in the north-central portion of New York State, approximately 10 miles northeast of Watertown, NY. Home to the 10th Mountain Division Light Infantry (LI) and other tenants, the installation and currently has over 300 structures, primarily World War II (WWII) era buildings, which are under consideration for demolition. These buildings are primarily wooden construction, with concrete pier foundations and partial concrete floors.

Fort Drum has had a “zero net rule” in place for construction projects, which stipulates that for each square foot of new construction, there must be an equal number of square footage demolished. Although the base’s current mission requiring housing for an increased number of troops has resulted in a temporary waiver of the rule, Fort Drum still attempts, where possible, to comply with the zero net rule. Since a large number of new barracks is slated for construction there in 2005, a number of WWII era buildings will be demolished while the construction effort proceeds.

In 1998, a memorandum from the U.S. Department of Defense (DoD) was sent to Army facilities, citing a “Non-Hazardous Solid Waste Diversion Rate” Measure of Merit (MoM) that required installations to divert solid waste at a rate of greater than 40% by FY 05, “while ensuring integrated non-hazardous solid waste management programs provide an economic benefit when compared with disposal using landfilling and incineration alone” (U.S. DoD, 1998).

In 2004, a Building Deconstruction Waste Management Study was conducted at Fort Drum by Weston Solutions, Inc. (WESTON) to evaluate whether the materials of construction from the buildings being considered for demolition could be disposed of in an alternative manner rather than through typical demolition and disposal practices. The approach used in this building deconstruction waste management study followed the Air Force Center of Environmental Excellence’s (AFCEE) C&D Waste Management Guide (AFCEE, 1999). Five alternatives were evaluated and

compared.

The alternative recommended, Demolition and Recycling, consisted of the controlled demolition of the structure and having the building debris trucked to a recycling facility. This alternative had the smallest increase in cost over the standard demolition procedures with favorable results. However, the most significant advantage was that the chosen recycling facility could recycle approximately 95% of the material, a percentage that Fort Drum could apply to the mandatory 40% diversion rate for solid waste.

The Fort Drum Public Works Department requested that WESTON do a pilot study of the chosen alternative, performing all necessary work to plan, implement, and document all aspects of the demolition and recycling procedure. Additional objectives were to identify actual costs to implement, identify schedule requirements, document recycling credits and document lessons learned during the process.

Building T-138, a 1,144 square feet (ft²), one-story building used for general purpose administration; and Building T-215, a 4,032 ft², one-story building used for general purpose, were identified for this pilot study. Fieldwork consisting of pre-demolition activities, demolition, transportation, and recycling was conducted in November 2004. The project work conducted complied with all federal and state regulatory requirements, including OSHA and DOT, as well as applicable U.S. Army and U.S. Army Corps of Engineer regulations.

The pre-demolition activities included ensuring that both buildings were fully disconnected from all utilities, and that all hazardous materials were removed. A final walk through was conducted for each building prior to demolition. During the walk through of Building T-138, several items were discovered which needed to be removed prior to demolition activities. For example, fluorescent light bulbs were removed from the building and turned in to Fort Drum to be managed as Universal Waste.

The first step in the demolition activities consisted of removing the alu-



(continued from previous page)

minum siding from the exterior walls of the buildings and placing it into roll-off containers provided by the Fort Drum Recycling Office. Later, the vendor provided the total weight of the container's contents to the Fort Drum Recycling Office.

Next, a larger excavator collapsed the roof and sidewalls of the buildings. The loading of the trailers was done through the use of the excavator with a bucket and thumb attachment. A layering approach with wood components on the floor and then concrete components was used to minimize damage to the trailer's floor components. The flooring component from Building T-215 was managed differently to separate out the non-friable asbestos containing material (ACM). The roof and wall components were removed first from the building and loaded directly into a trailer for disposal at the recycling facility. Then the ACM flooring components were removed with the excavator and thumb attachment. The floor was peeled up and loaded into a trailer for transport to a landfill cell designated for ACM materials. The remaining pier foundation and associated debris were then loaded into the trailers for transportation to the recycling facility. A small remaining amount (18.58 tons) of concrete pier material from Building T-215 was reused at a permitted mine reclamation site in LeRay, NY.

Recycling Activities

The Taylor Recycling Facility in Montgomery, NY, received and processed seven loads of mixed demolition debris (141.43 tons) from the Fort Drum Building Deconstruction Pilot Study during November 2004. All materials entering the recycling facility are weighed at the scale and inspected during unloading for unauthorized materials such as putrescibles, municipal solid waste (MSW), tires, and liquid or hazardous wastes.

All of the inbound mixed C&D waste is processed within the processing building. All waste that is tipped inside the building is loaded into a screen, which separates fines from larger debris. The exception is large, easily recovered materials, which are moved directly from the tipping area to the appropriate holding location by means of front end loaders and manual labor. In terms of waste that is loaded onto the

screen, the larger debris goes up two conveyors into a picking room where recyclables (such as clean wood, metals, aggregates {asphalt, brick, block and concrete}, cardboard, and wallboard) and material not appropriate to be manufactured into alternative soil material for landfill cover are removed.

Recovered materials resulting from the component separation process all have designated storage locations and secondary processing steps. Table 1 shows the specific recyclable products and markets to which the materials are sold.

Table 1
Taylor Recycling Facility Recyclable Products and Material Markets

| Recyclable | Market |
|------------|---|
| Clean wood | Ground and sold as natural and died mulch |
| Metals | Graded and sold to steel mills |
| Aggregates | Crushed and sold as item 4 stone |
| Cardboard | Baled and sold to paper mills |
| Wallboard | Gypsum separated from paper and made into new wallboard |

After all the building debris and concrete pier foundations were removed from the former building sites, clean backfill material was brought onsite. Each area was graded and seeded with the appropriate grass seed. Recycling Percentages Achieved

During the time period (16-22 November 2004) when the Fort Drum building debris was being processed, the Taylor Recycling Facility achieved a recycling rate of 94.48%. By applying this recycling percentage to the total amount of debris (tons) received for each building, a tons recoverable or recycled number was generated. A total of 39.43 tons of building debris was removed from Building T-138. The material which was recycled/reused included the aluminum siding (1.16 tons) and C&D debris (Non ACM C&D Debris) recycled by the Taylor Recycling Facility (36.16 tons) for a total of 37.32 tons. The non-recyclable tonnage for Building T-138 included the non-recyclable percentage of material from the recycling facility (2.11 tons). The overall recycling percentage

achieved as part of this pilot project for Building T-138 was 94.64% well above the 40% diversion rate requested by the DOD memorandum.

A total of 139.04 tons of building debris was removed from Building T-215. The material which was recycled/reused included the aluminum siding (2.15 tons), C&D debris (Non ACM C&D Debris) recycled by the Taylor Recycling Facility (97.47 tons), and the mine reclamation material (18.58 tons) for a total of 118.20 tons. Not all the building debris from Building T-215 was sent to the recycling facility. Non-recyclable tonnage included the ACM C&D material (15.15 tons) sent to the SWMF at Rodman, NY and the non-recyclable percentage of material from the recycling facility (5.69 tons) for a total tonnage of non-recyclable material of 20.84. The overall recycling percentage achieved as part of this pilot project for Building T-215 was 85.01%, well above the 40% diversion rate requested by the DOD memorandum.

Completion of the Fort Drum building deconstruction pilot study demonstrated that the procedures employed are an effective and efficient way to attempt to comply with the "zero net rule" for construction projects while providing credits toward achieving the Measure of Merit, 40% solid waste diversion rate.

The pilot study also demonstrated that this is a viable procedure for execution on a larger scale and that the techniques employed can be implemented with little or no impact on Fort Drum's demolition/construction schedule. The slight increase in cost over the normal demolition and disposal procedures is offset by the significant solid waste diversion credits earned.

Lessons learned during the pilot study, when implemented, would make the process even more efficient and economical, especially when employing the building deconstruction procedure on a larger scale. This could have a significant impact in assisting Fort Drum to achieve its solid waste diversion rate goal.

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Karen Taylor-Haynes is a real property specialist in the Public Works, Engineering Division, at Fort Drum; Ann Wood is a project manager with the USACE-Baltimore District; and John Gerhard is a project manager for Weston Solutions, Inc





USMA celebrates Earth Day year round

by Martha Hinote

We are blessed at West Point with an abundance of both natural and cultural resources. The USMA reservation consists of over 16,000 acres, including both the oldest operating US Army post and rich mountain woodlands. The lakes, rivers, streams, wetlands and an abundance of wildlife, from the tiny, Pygmy Shrew, (which is about the size of a Hummingbird or .1oz,) to the very large Black Bear, which can grow to 500 pounds are ours to enjoy.

This natural beauty also includes a collection of historical structures that date to the beginning of our nation's history all located in the setting of the gorgeous Hudson River Valley, NY. Even the cold and snowy winters are ours to relish. We are dedicated to protecting and preserving these resources for our own enjoyment and for the future.

Our goal in the Directorate of Public Works (DPW) is to save our earth, including both our natural and cultural resources. We can only succeed in that goal, if all members of the West Point Community, which includes active duty military faculty and staff; military dependents, retired military who rely on the Army facilities located here, our civilian workforce, the 4,000 cadets who learn what it is to be a leader of character while here, and to the millions of visitors who come here each year. Education is a key component to our success in this goal.



Representatives from Penn State University explain its Recycling and innovative "Trash 2 Treasure" programs to a community member and two cadets.

To help in that endeavor, DPW begun sponsoring a series of Earth Day events 10 years ago. Different activities from April 22nd (which is Earth Day) through June celebrate our commitment to a healthy earth. We needed more than one day to truly celebrate our natural and cultural resources. We are conducting a menu of activities to include an Earth Day Poster Contest for the children, a Guided Nature Walk, an Arbor Day Tree Planting, a Fishing Seminar / Fishing Contest, a guided tour of the Historic West Point Cemetery, a guided boat tour of historic West Point from the Hudson River.

Additionally, our Youth Activities Center offered West Point's youth the opportunity to learn how to draw trees with pen or pencil and other craft media using trees as the theme. They had fun and learned about how and why trees are so important to the environment.

A special Earth Day Festival, which was co-sponsored by the Environmental Health

Office at Keller Army Hospital, also was an integral part of the program. In compiling our subject matter experts on Earth Day topics, we looked both within West Point and to the local community. Experts came from as far away as upstate Pennsylvania to support our educational Earth Day Festival. Displays were presented by the Orange County Water Authority on leachate/landfills; Penn State successful recycling program and innovative "Trash 2 Treasure" program; USMA's MS4 Storm Water Program; our own USMA Recycling Program about our own successful recycling efforts at West Point. Environmental Health provided displays about regulated medical waste / hazardous waste, entomology to prevent Lyme Disease and West Nile Virus, a forest ecology Shifting Mosaic Sustainable Forestry Model, Industrial Hygiene, CHPPM (Center for Health Promotion & Preventative Medicine) on field / garrison air/water quality and the "history" of water analysis. A local herbalist provided samples and information on the health benefits of herbs.

All of the displays were enhanced by an acoustic guitarist who provided music with a "natural" sound to top off the event. ➤



John Dopler, USMA Recycling Coordinator, explains our program to a community member, while offering a free recycling T-shirt.



Pining for beach season

by JoAnne Castagna

The Bradley Beach shoreline in New Jersey had experienced erosion due to previous storms and was in need of sand nourishment.

The US Army Corps of Engineers, New York District, contracted Weeks Marine to place 3.1 million cubic yards of sand on the shoreline, adding over 200 feet of beach front, seven groin notches and four outfall extensions.

The project goes back to 1999 when the New York District began a beach erosion control project from Sandy Hook to Barnegat Inlet, NJ.

Area residents wanted to take an additional step to protect the Corps' work, so they decided to create beach dunes. Beach dunes control beach erosion by limiting wind-blown sand loss. Bradley Beach residents literally *pine* for beach season, collecting used holiday pine trees to create dunes along a mile long strip of beach.

"Dune creation was not a part of the Corps' project because they are not needed in this project area for protection since the area has a naturally high backshore," said Lynn Bocamazo, Senior Coastal Engineer, USACE, New York District, who designed and monitored the completed beach nourishment project.

To date, an estimated 20,000 trees have been used to create a stretch of dunes, 4-9 feet high, along the mile-long oceanfront. This past holiday season, an additional 3,000 trees were added.

The trees are stacked on the ocean side of the dunes to capture sand blowing inland



Dunes are laid out in a saw-tooth design. Photo by Douglas Leite, Project Manager, USACE, New York District

from the beach and eventually form permanent dunes.

The dunes are a saw-tooth design. "Snow fences are being placed on an angle along the promenade side of the dune to support the dune system. This also makes the beach look appealing from the shore side," said Richard Bianchi, Operating Supervisor of Public Works for Bradley Beach who designed the dune project.

Dune grass is being planted. When the project began 50,000 plugs of dune grass was planted on the dunes to keep them anchored. "We are in the process of receiving a grant for an additional 25,000 to

50,000 plugs of dune grass," said Bianchi.

"A proactive municipal public works department is a beneficial addition to any Federal or State beach erosion control project. Bradley Beach is trying to aggressively maintain the sand that was placed there and is an active participant in the project's success," Bocamazo added.

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JoAnne Castagna is a technical writer/editor in the Project Management Division, New York District, US Army Corps of Engineers. **PWD**

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Our goal was to provide a wide variety of Earth Day information. We challenged those in attendance on an Earth Day Trivia Contest and distributed prizes provided by the West Point Women's Club.

This was our first Earth Day Festival designed for the cadets' educational experience and community as a whole. We are already planning improvements and

growth for next year's event.

"In order for us to be a success in the important job of managing and preserving our resources," said Colonel Thomas Julich, Director of Public Works, "we need the community's involvement in preserving and defending our resources. We believe that the best way to obtain that support is to ensure that the community is knowledgeable on important environmental and cultural preservation issues."

We look forward to the rest of our Earth Day activities and our success in preserving the resources of West Point for the future.

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Martha Hinote is the Customer Relations Representative, DPW Customer Relations Office, at USMA. **PWD**



Fort Lewis opens the Sustainable Interiors Showroom (SIS)

by Rena Ely

Managers trying to feel their way through green purchasing requirements can walk on, touch, sit in and try environmentally friendly products in a yearlong demonstration at Fort Lewis, Wash.

The Sustainable Interiors Showroom, a demonstration of sustainable choices for products commonly needed in building interiors, opened its doors in the installation's Hazardous Materials Control Center (HMCC) on Earth Day. It is designed to support the installation's drive to achieve zero net waste by 2025. HMCC Manager Dan Cline stated, "This program will reduce the largest amount of soild waste that Ft Lewis pays to get rid of furniture and flooring."

Showroom visitors can experience sustainable products and get information to help streamline their purchasing processes while satisfying multiple vendor bid and green purchasing requirements.

"We can see the commitment to sustainability, specifically the purchase of sustainable products, being spread throughout the installation's directorates," said Col. Steven Perrenot, installation Director of Public Works. "The Directorate of Logistics' undertaking of the [sustainable interiors] showroom fits perfectly into our Installation Sustainability Program."

A number of U.S. General Services Administration (GSA) vendors provided the products on display, including green office work stations, alternative flooring materials and wall paint containing no volatile organic compounds.

An interior design company, Wille, Inc., worked with the other vendors to ensure the completed display area was both functional for the Directorate of Logistics and Directorate of Public Works employees who work there, and conveyed an integrated look and feel. Wille founder Robin Wille stated, "Specifically, we focused on the government customer and the sustainable goals for Fort Lewis. We wanted to

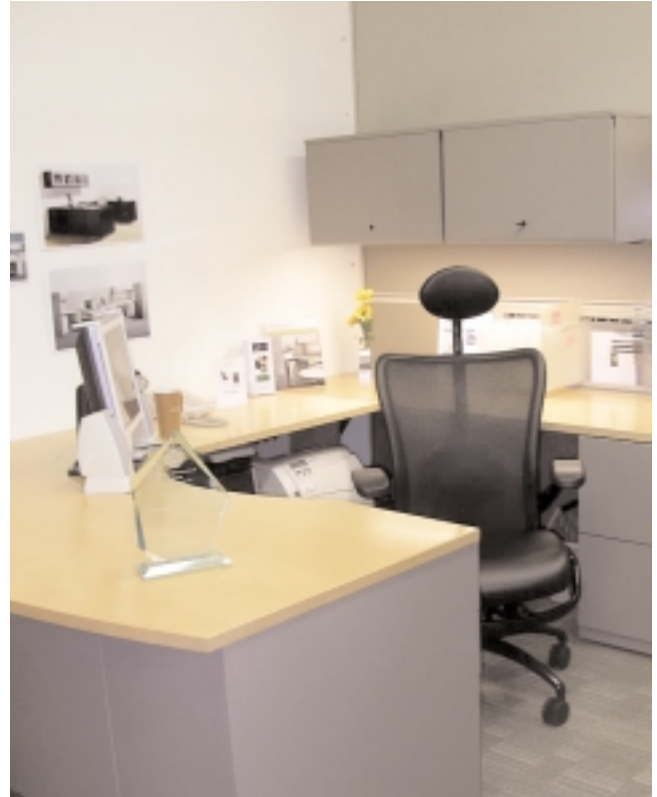
highlight elements that delivered good value, considered lifecycle costs, longevity, manufacturer warranties, and were readily available on GSA contract."

The administrative area of the Hazardous Materials Control Center (HMCC), a joint Directorate of Public Works and Directorate of Logistics operation, was designed utilizing GREENGUARD® indoor air-quality certified modular workstations that allow for quick and easy reconfiguration; are manufactured from materials emitting zero or minimal toxin; and are either manufactured entirely from recycled materials or are, themselves, recyclable.

Carpet tiles are the primary alternative flooring on display. Fort Lewis began testing the tiles in 2003. Because each tile can be pulled up individually and cleaned or replaced as needed, tiles reduce the need to throw away an entire room full of carpet when only a portion of it is worn out, discolored or otherwise damaged. In addition, the ability to clean individual tiles (often on-site using ordinary soap and water) reduces maintenance costs.

And when the entire carpet does need an annual cleaning, large buildings such as Fort Lewis' David L. Stone Education Center no longer need to close their facility because the environmentally friendly cleaning process is dry.

More durable than traditional furniture, these sustainable products usually come with warranties of 10 or more years. Long warranties mean vendors will come on-site and make repairs, reducing the practice of



Just one of many examples of modular workstations comprising the showroom.

discarding furniture that is missing parts but is otherwise in good repair. Some of these products are also made with materials that are recycled, renewable or both. Many are manufactured with little to no volatile organic compounds or other toxins.

Members of the Fort Lewis' Installation Sustainability Program staff continue to expand their outreach efforts by looking for new and innovative ways to both educate the public about the installation's long range sustainability goals and remove barriers to changing the traditional, less sustainable practices.

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Community partnership web site launched

Army Environmental Policy Institute

The Army has launched a new web site to help strengthen partnerships between the Army and the communities around its installations and ranges by providing practical tools, methods, examples, and information related to public involvement.

The *Army Public Involvement Toolbox* was developed by a consortium of people from Army organizations engaged in public involvement. The initiative seeks to help meet the goals of the new *Army Strategy for the Environment* announced in October 2004.

The strategy highlights the necessity of involving the public if the Army is to meet its goals and achieve sustainability in the future. The site, like the strategy, places emphasis on the full range of activities needed to engage stakeholders, known as "4C": communication, coordination, consultation, and collaboration. Viewers can access the site at <https://www.asaie.army.mil/pitoolbox>.

"As the *Army Strategy for the Environment* states, 'the sustainable futures of our installations and our communities are inextricably connected,'" said Geoffrey Prosch, acting Assistant Secretary of the Army for Installations and Environment. "This new strategy mandates that the Army changes how it communicates, moving beyond simply informing others of our activities, to actively collaborating with the public to forge mutually beneficial solutions regarding the limited resources we all share."

The primary purpose of the Web site is to provide Army, Army civilian staff, and Army contractors engaged in public involvement with functional, proven techniques and information. The site is publicly accessible to reinforce the Army's commitment to public involvement, as well as to share information across other government agencies engaged in these types of activities.

"This is an initiative that intends to foster collaboration, and it has truly been a collaborative effort from the start," said Karen Baker, senior fellow for strategic policy at the Army Environmental Policy Institute. Baker pulled together the Army Public Involvement Committee, a team of

Army organizations engaged in public involvement. The committee sought to build upon recommendations from an Army senior leadership panel which had identified the need for more "how to" resources in engaging the public on environmental issues. As the committee assembled material and developed content for the web site, it consulted with other federal agencies, such as the Environmental Protection Agency, state agencies, and several non-governmental organizations.

"The most exciting thing about this project was the enthusiastic feedback from all of the partner organizations," said Baker. "Every time we met, more people came to the table, and every time we showed the test site to a group, we were provided with more resources and ideas."

"From the beginning, we made a conscious effort to avoid reinventing the wheel," Baker said, noting that a great deal of excellent information on best practices developed by the Army, and by other organizations already existed. The challenge was making it easier for Army personnel to find information so they can develop plans and programs that meet their local needs and issues.

The project team selected content for the Web site with an emphasis on providing practical, hands-on information and organizing the information into functional 'buttons' for easy, quick linking to the information. Viewers can quickly access guides on specific public involvement activities, locate training opportunities, find the latest regulations and policy statements on public involvement and link to other resources created by other agencies. The site is designed for frequent updates, with viewers providing suggestions for future web postings through an e-mail feedback feature.

"The project team combined the excellent work already done by many Army organizations to create a 'one-stop shop' for all army practitioners, that extends far beyond the environmental arena. The techniques and material can be applied to any issue in which the Army would need to actively engage with the public," said Col.

Richard Breen, Director of Community Relations & Outreach for Army Public Affairs.

Launching the Army Public Involvement Toolbox is only the first initiative for the Army Public Involvement Committee. The group also is creating pilot public involvement training courses and making recommendations on how to incorporate public involvement practices into Army policy.

"The tool box is a great start to raising awareness and providing resources to the field, but it is only our first step in making the '4C' concept a reality," said Ray Fatz, Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health). "We have much work to do to ensure that involving the public becomes part of how the Army does business."

POC is Karen Baker, AEPI, (703) 604-2300. **PWD**

The Army Installation Design Standards Newsletter (IDS E-News)

The Army Installation Design Standards (IDS) Policy Newsletter (IDS E-News) was created as part of the Assistant Chief of Staff for Installation Management's (ACSIM's) commitment to maintaining standardization of Army installations around the world. The newsletter is an online document that provides official updates on the Army standards.

Register your e-mail subscription at <https://secureapp2.hqda.pentagon.mil/acsimnews/>.

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NEPA and Army installation planning

by Jerry Zekert

Department of Defense (DoD) installations impact the environment where we all live and work. They can be major centers of activity where more than 50,000 military personnel, family members and civilians work or live. Further, most Americans live within at least 150 miles from a DoD base and, thereby, are affected by the activities occurring on these bases. Thus it is imperative that installation planning focus on the comprehensive long-term factors that affect the environment and base development. With these concerns, it is vital that environmental considerations are integrated into the existing Master Planning process.

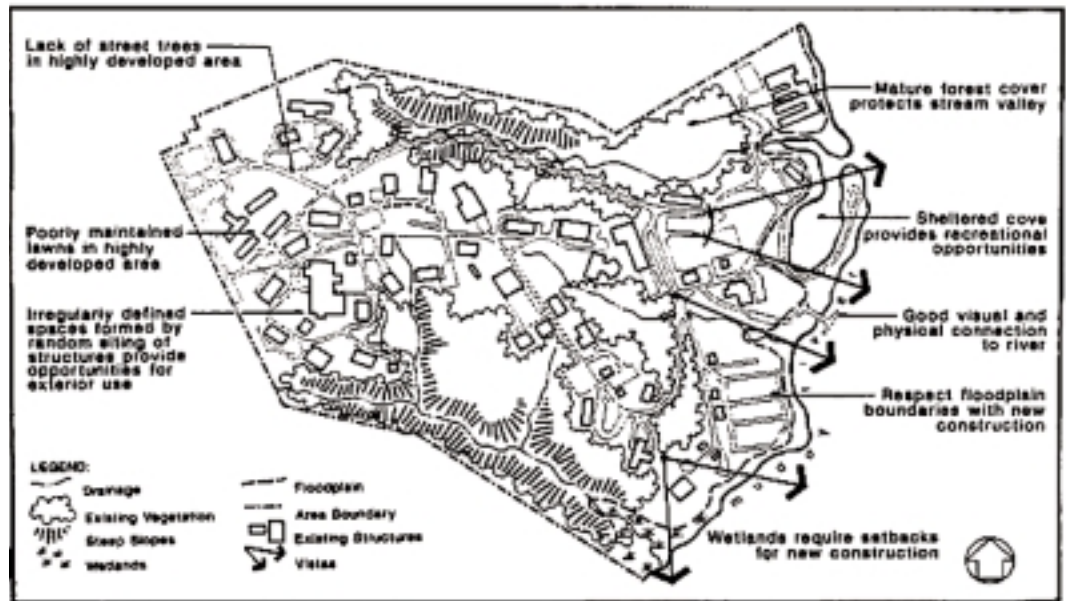
This article provides an overview of the Real Property process and requirement to ensure environmental considerations are imbedded in the planning process. AR 210-20, Master Planning for Army Installations is the over-arching Army policy that describes the Army Real Property Master Planning process. This seven-step comprehensive process includes:

- 1) Establishing a **vision**.
- 2) Collecting and analyzing data.
- 3) Developing goals and objectives.
- 4) Developing and evaluating alternatives.
- 5) Selecting and adopting plans.
- 6) Implementing plans.
- 7) Monitoring and amending plans.

The Army Real Property Master Planning process is a continuous process that results in achieving a vision for orderly development. The National Environmental Policy Act (NEPA) process is very similar. It includes a six-step process which includes:

- 1) Identification of needs.
- 2) Initial data collection (inventory).
- 3) Analysis and synthesis.
- 4) Selection of preferred plan.
- 5) Implementation/adjustment.
- 6) Monitoring.

Based on this, it is logical for Army policy to concurrently integrate environmental review with other Army planning and deci-



Typical environmental overlay.

sion making actions.

AR 210-20 cites that all installations must have a Real Property Master Plan (RPMP). The RPMP is a five-component document that includes the Real Property Master Plan Digest, the Long-Range Component, the Installation Design Guide, the Capital Investment Strategy, and the Short-Range Component.

As part of the Long-Range Component, an Environmental Assessment of the RPMP is required. The Environmental Assessment establishes the environmental framework for installation operation and development. It covers current and proposed future conditions, provides a cumulative picture of impacts, and links environmental conditions on the installation and surrounding communities.

Many installations have championed lots of great initiatives to promote more effective integration of NEPA and Master Planning processes.

Fort Riley

At Fort Riley, they have developed a Programmatic Environmental Assessment (PEA) that is integrated with the RPMP. The PEA structure allows for a series of Records of Environmental Considerations (RECs) that are tiered from the PEA. Supplemental Environmental Assessments are

also tiered off the PEA to avoid lesson impacts.

The major benefit of this initiative is that it ensures that planning and environmental considerations are comprehensively considered. In addition, it helps reduce/eliminate numerous small environmental assessments that can be expensive.

The PEA also provides the flexibility to place facilities of a similar footprint and impacts within similar land use areas with similar impacts. It allows the installation to deal with cumulative impact concerns involving multiple mission adjustments, and provides a document that effectively supports the Master Plan into the future.

Fort Jackson

At Fort Jackson, they have developed an REC that establishes a formal process to ensure environmental considerations have been formally imbedded into the planning process. To complete a Fort Jackson REC, a team including the project proponent, Environmental & Natural Resource staff and the Master Planning staff must comprehensively assure that all environmental aspects have been considered. Further, it requires development of a Memorandum of Environmental Consideration (MOEC) that defines the conditions for REC/MOEC approval. MOEC



States, EPA offer environmental management system incentives

by Mark Ditmore

The Environmental Protection Agency and many state environmental agencies offer regulatory and non-regulatory incentives to encourage participation in EMS programs.

For example, some regulatory agencies are prioritizing resources by decreasing inspections at facilities with EMS in place and focusing on the facilities that they deem more of an environmental risk.

The U.S. Army Environmental Center recently identified two federal and 23 state regulatory and non-regulatory incentives that may be available to Army installations as a result of implementing an EMS.

“The types of incentive programs identified are hard to ignore,” said Robert Shakeshaft, USAEC Sustainability Team leader. “This is a direct endorsement of the EMS

approach ... and the Army has moved in the right direction in terms of adopting formal environmental management systems.”

These incentive programs vary significantly, and include a range of regulatory and non-regulatory benefits, including:

- Reduced frequency of monitoring or reporting.
- Increased priority for expedited review of permit applications.
- Eligibility for consolidated or streamlined reporting.
- Public recognition.
- Alternative schedules for routine compliance inspections.
- Alternative record-keeping and reporting systems.
- EMS and compliance assistance.

Overall, the programs demonstrate that state and federal regulators tend to accept EMS as a management tool. For example, in the state of Washington a facility may submit an application to have its existing EMS serve as an alternative to a stand-alone Pollution Prevention Plan. Programs such as this increase management efficiency by reducing redundancy and integrating traditional “stovepipe” programs and planning documents.

Participants in some state programs

would be offered operational flexibility, such as reduced inspection and monitoring frequency. This type of flexibility can directly support and enhance the mission by allowing staff to focus efforts on other pressing needs. In New Jersey, participants are offered the following incentives from the New Jersey Department of Environmental Protection: public recognition, single point of contact within the agency, expedited permit processing and consolidated reporting.

Incentive programs such as these can be expected to be adopted by still more states, and they will continue to evolve over time.

“We encourage the entire military community to monitor state EMS Web sites and other information sources to stay current with developments in their specific states,” Shakeshaft said.

For more information on incentives programs, please contact the U.S. Army Environmental Center Integration Branch at (410) 436-1222.

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Mark Ditmore is an Associate at Booz Allen Hamilton, Inc., providing contract support to the U.S. Army Environmental Center. PWD

States With Incentive Programs

| | | |
|---------------|----------------|------------|
| California | Michigan | Tennessee |
| Colorado | Minnesota | Utah |
| Georgia | Missouri | Virginia |
| Idaho | New Jersey | Washington |
| Kentucky | Texas | Wisconsin |
| Louisiana | New York | |
| Maine | North Carolina | |
| New Mexico | Oregon | |
| Massachusetts | South Carolina | |

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approval parameters include a construction permit from Master Planning, site/design approval, and compliance approval with all Federal and State regulations (i.e., lead-based paint).

Fort Jackson also requires that the NEPA coordinator and other Environmental and Natural Resources Division personnel participate in all project planning and design charettes. Through this effort, wetlands encroachment has been prevented; soil erosion minimized, use of solid waste reduced, and disturbance to endangered species minimized.

Fort Bragg

Fort Bragg, through the installation’s Master Planning update process, has imbedded environmental/sustainability considerations into its installation planning and development standards. They have created an installation vision for development that is sustainable, environmentally sound and responsive to long-range Army mission needs. The updating process was comprehensive and collaborative; it included installation stakeholders at all echelons and worked with the surrounding community. Fort Bragg’s successes were acknowledged by the Federal Planning Division of the American Planning Association as an outstanding plan-

ning program in the Federal Sector.

In closing, NEPA is a process, not a product, and should be integrated with the installation comprehensive planning process. Army policy is evolving into enhanced NEPA/Master Planning integration. Our challenge is to be creative. Achieving and maintaining a balance between compliance and mission is our Master Plans’ measure for success. NEPA is a tool for a better plan.

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Jerry Zekert is the Chief of the Master Planning Team at HQ USACE. PWD



Internal EPAS assessments can help installations maintain compliance

by Nicole Kapolka and Matt Andrews

For installation staff struggling to fulfill Environmental Performance Assessment System (EPAS) mandates, help is on the way.

Updated EPAS software and a course on preparing for external EPAS assessments to avoid costly enforcement actions are now available.

The Army's EPAS program helps installations achieve, maintain and monitor environmental compliance. A successful internal EPAS program helps an installation reduce its regulatory burden and achieve continual improvement (one of the primary goals of a healthy Environmental Management System).

In the long run, this saves the Army valuable time and money to otherwise support Soldiers in the global war on terror, according to U.S. Army Environmental Center officials.

"A strong internal EPAS program is the key to reducing enforcement actions and maintaining environmental compliance at an installation," said Col. Tony R. Francis, commander of USAEC. "This training and software is another example of how we're helping make it easier for people at the installations to do their jobs more efficiently, ultimately benefiting the Soldier. I encourage installation staff to take advantage of it."

The software is a centrally funded, Web-based program that is available to all active Army installations. The updated version helps an installation's staff manage and track its internal assessment process.

During an internal assessment, installation staff identify, characterize and document compliance deficiencies. They then define compliance problems and analyze their causes. Finally, they select, implement,

monitor and modify corrective and preventive actions to achieve compliance.

The software gives internal assessors a place to enter findings and track corrective actions. The software documents the assessment in an automatically generated Installation Corrective Action Plan report.

The two-day internal EPAS training course focuses on using the software. It is free to installations and can be held for one installation or for several installations in a region. Training dates are still available in fiscal 2005 and 2006.

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Matt Andrews is the EPAS Team Leader, Integration Branch, Base Operations Support Division at the US Army Environmental Center; and Nicole Kapolka is a Booz Allen Hamilton contractor supporting the EPAS program at the US Army Environmental Center **PWD**

U.S. Army Garrison Hawaii Installation Design Guides win "Outstanding Federal Project" Award

by Vincent Kam

At the recent Federal Planning Division (FPD) workshop the Army Installation Design Guide (IDG) for Schofield Barracks along with Executive Summaries for the other U.S. Army Garrison, Hawaii installations were sponsored by the U.S. Army Installation Management Agency – Pacific Region Office for review and consideration for the 2005 FPD annual project awards. A total of 44 projects were submitted for consideration in six categories.

Following the Model IDG established in Chapter 8 of the *Army Installation Design Standards* (IDS), Black & Veatch Special Projects Corporation developed the Category 1: Outstanding Federal Project award winning document, the Schofield Barracks

IDG. Prof. John Landis, University of California, Berkeley, the contest judge, praised the document and wrote in summary:

"One does not expect the U.S. Army to be a leader in urban design. That's what makes this project so unexpected and so exciting. The project document is nicely organized and presented, with each page carefully designed and arranged. Visually, the site plans are exactly right, and the photos and data tables provide no more but no less information than they need to. But what really sets this document apart is its comprehensiveness. Where others start and end with a list of projects, this document clearly explains the planning process, planning goals and objectives, and visual design

themes and principles. Better yet, this project carefully demystifies site and urban design best practices, making them easy to understand and apply elsewhere."

Black & Veatch did an outstanding job of helping to implement the Army Installation Design Standards. Their excellent infusion of installation specific material into the model and their professional development of maps and other site-specific material is highly commendable. Congratulations to all!

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Vincent Kam is a Program Manager in OACSIM's Facilities Policy Division. **PWD**



Meeting community relations requirements requires a plan

by Joseph Ricci

Fort Detrick, Md.,, faced a tricky and complicated hazardous materials cleanup in 2000. Before completing its plan, the installation made certain to talk to its neighbors: the citizens of Fredrick.

More than 100 residents of the northwestern Maryland city met with Fort Detrick officials to discuss the plan. Most of their concerns were answered in that two-hour session, said now-retired Lt. Col. Jeffrey Springer, director of the installation's safety and environmental programs at that time.

"By addressing public concerns early, honestly and face-to-face at public meetings, many misunderstandings can be avoided," Springer said.

Such engagement is part of a comprehensive Community Relations Plan, a required part of most cleanup actions on Army installations that are expected to last four months or longer.

The U.S. Army Environmental Center is preparing or updating Community Relations Plans (CRP) for eight Army installations to meet federal regulations and Department of Defense requirements regarding public involvement in cleanup activities during fiscal 2005. The Center is in the process of developing a list of installations that may require a new or updated CRP during fiscal 2006.

Each installation will receive a plan documenting what the installation will do to interact with and inform the public about environmental cleanup activities at their installation. Based on community interviews and other relevant information, the CRP serves as a guide to dealing with interested parties from the media to activist groups, local governments and regulators.

The National Contingency Plan, the federal government's blueprint for responding to oil and hazardous substance releases, requires a formal community relations plan for removal actions where on-site action is expected to extend beyond 120 days. A number of regulations, including the Comprehensive Environmental Response, Compensation and Liability Act and the Clean Water Act, require agencies to follow the National Contingency Plan.

The National Contingency Plan requires a formal CRP to support remedial action before fieldwork for the remedial investigation begins. The purpose of the plan is to: "Ensure the public appropriate opportunities for involvement in a wide variety of site-related decisions, including site analysis and characterization, alterna-



tives analysis, and selection of remedy;

Determine, based on community interviews, appropriate activities to ensure such public involvement, and

Provide appropriate opportunities for the community to learn about the site."

Although the Army encourages such action, a CRP is not legally required at Resource Conservation and Recovery Act sites.

Installations interested in being considered for the fiscal 2006 program should contact their USAEC restoration managers.

Joseph Ricci works in the U.S. Army Environmental Center Public Affairs Office **PWD**

Initiative reduces children's pesticide exposure

An initiative to increase children's safety through better pest management helped an Army facility become the first child care center in the nation to earn Star Certification from the Integrated Pest Management Institute (IPM) of North America. The Moore Child Development Center (CDC) at Carlisle Barracks, Pa., received the honor June 2, highlighting more than 20 years of Army efforts to integrate sound pest management policies and practices at its installations. Susan B. Hazen, the Environmental Protection Agency's act-

ing assistant administrator for prevention, pesticides, and toxic substances, presented the certification, recognizing the center as the environmental standard-bearer for child care centers around the country.

The Moore center, serving 134 chil-



dren, employs an Army program called Integrated Pest Management (IPM) in CDCs and Schools. Designed to lower the risk of chemical pesticide exposure to school age and pre-school age children, the program deploys a coordinated array of means to deal with unwanted species, from natural predators to traps to chemicals. It aims to reduce childhood injuries from pest species such as cockroaches, ants, bees, wasps, birds, animals and poisonous plants, and limit damage to buildings and grounds.

"This is a great accomplishment for ➤



Fort Bliss and El Paso water utilities partner to develop world's largest inland desalination plant

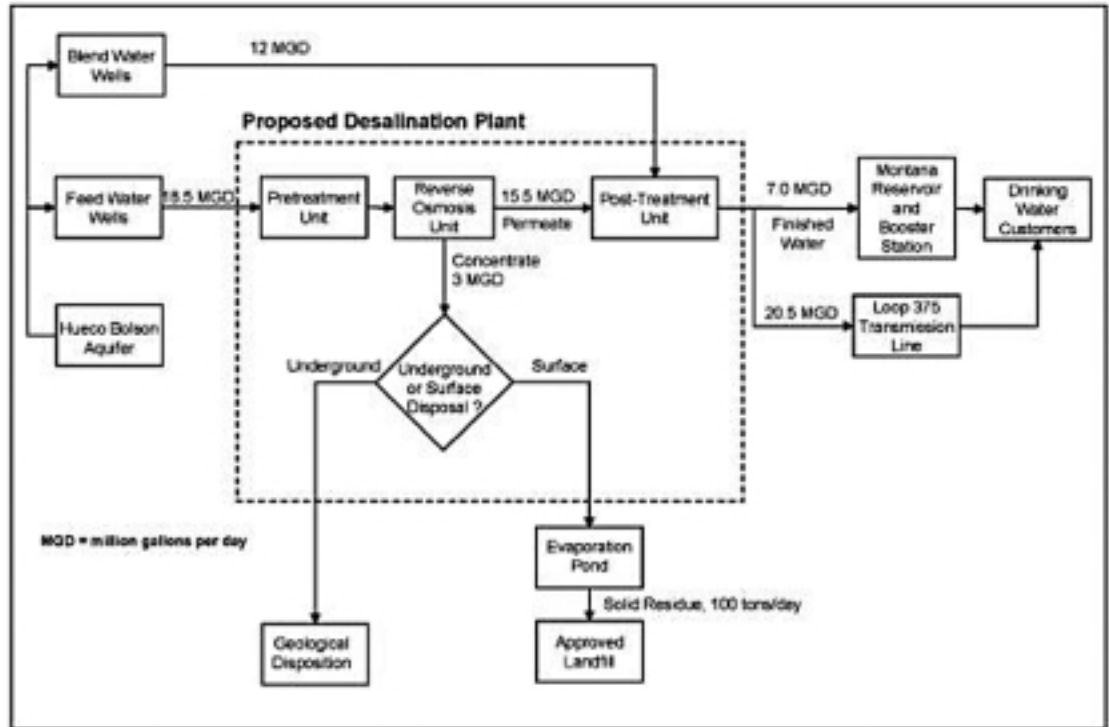
by James D. Steele, Edmund G. Archuleta, Michael Lockamy and Keith Landreth

One of the most challenging issues facing El Paso, Texas, is its water supply.

The region has a current population in excess of two million people, forming one of the largest border communities in the world. El Paso derives its water from the Rio Grande River and the Hueco Bolson, an underground aquifer, which is also used by Fort Bliss.

The Hueco Bolson also contains over 6,900,000 acre feet of recoverable brackish water or over 600 times the amount of potable water, the majority being under Army land. The brackish portion of the Hueco contains less salt than ocean water but more than is allowed in drinking water.

To help extend the life of the Bolson and increase annual recharge, El Paso has undertaken several initiatives including conservation measures, a long-term plan to import water and increased use of 'purple pipe' reclaimed water for turf irrigation. Neighboring Fort Bliss operates its own



wells and water plant. Conservative estimates indicate these wells are good for over a hundred years at their present production capacity. However, as a regional partner in conservation efforts, the post has initiated a strict water conservation policy for parade fields and residential turf watering. Every newly constructed post facility includes:

low-flow plumbing fixtures, ground source heat pumps vice high water consuming evaporative cooling systems, and low water "xeriscape" landscapes.

With recent advances in membrane technology and private sector competition, the costs for reverse osmosis systems have been reduced. When combined with

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Carlisle Barracks and the Army," said Sandra Alvey, a pest management consultant in the U.S. Army Environmental Center (USAEC) Preservation Branch who helped bring the program to Carlisle Barracks. "This third-party, independent validation from the IPM Institute reinforces the Army's role as an environmental steward, as well as its commitment to Soldiers and their families."

Overall, IPM practices are designed to reduce property damage and human disease caused by pest species in ways that

minimize the risks of pesticides in the environment. It incorporates the Defense Department's IPM principles, including planning and professional oversight, high training standards, record keeping and reporting, and reduced pesticide application strategies, serve as the foundation of the Army school and CDC initiative. The least-toxic pesticides are applied only when necessary and at times when children are not directly exposed.

Program partners include the USAEC, the U.S. Army Center for Health Promotion and Preventive Medicine, the U.S.

Army Installation Management Agency and the Office of the Director for Environmental Programs. The DoD Education Activity, which operates more than 220 schools worldwide, and the Army Community Family Support Center, which operates 152 CDCs at installations worldwide, worked with the diverse team to develop the initiative. The first test of the school IPM initiative took place in the eight schools on Fort Campbell, Ky., in 2002.

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the escalating cost of acquiring additional sources of fresh water, desalination is emerging as a choice for southwestern cities such as El Paso.

Originally Fort Bliss and El Paso were developing plans for two separate facilities. In 2001 the decision was made to partner with the city in the siting and construction of a joint facility with a daily production rate of 27.5 million gallons. The objective was to provide an additional reliable source of potable water for the city and Fort Bliss. Such a plant would be more economical for both, while providing for better management of the aquifer.

A partnership was formed to construct what will be the world's largest inland desalination plant. EPWU will deliver sufficient water to Fort Bliss to meet current and future demand, and Fort Bliss will be positioned to use its existing wells as a backup supply.

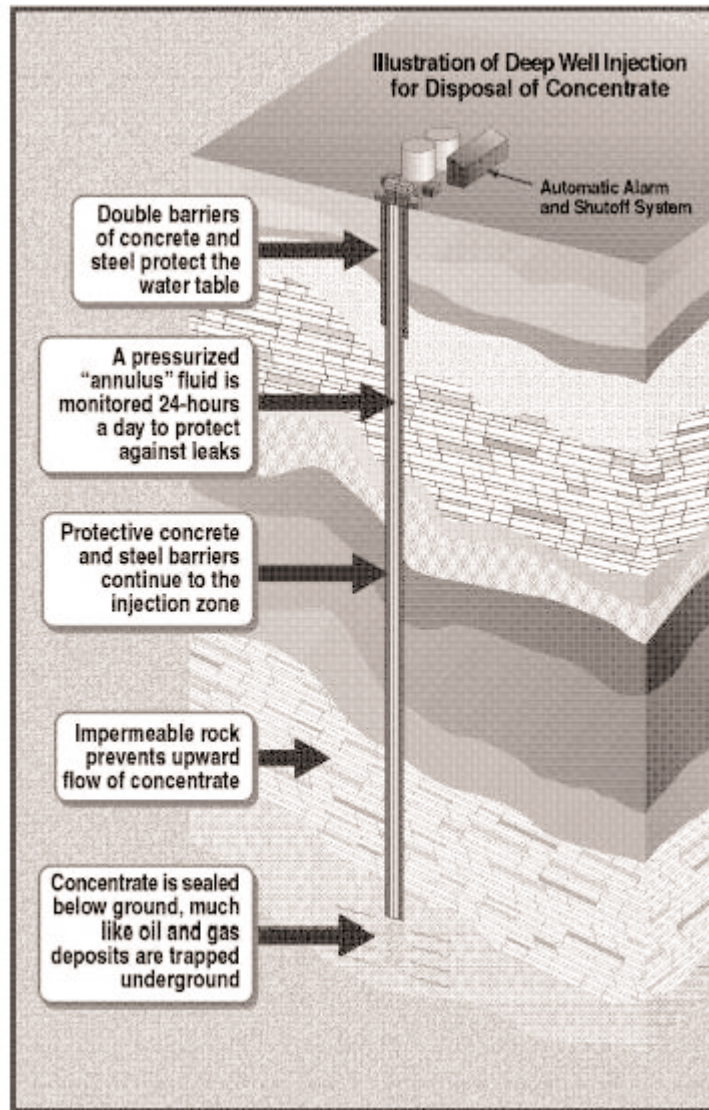
The Army will lease the land for constructing and operating the plant and its infrastructure. It also underwrote the cost of the Environmental Impact Statement, initial investigation of deep well injection of the residual concentrate of the desalination process, and provided sources of additional wells for blending. EPWU agreed to design, build, operate and maintain the plant and supporting facilities, as well as conduct any additional related engineering studies.

The project includes the rehabilitation of 15 existing wells plus three new source well, 16 blend wells, a 27.5 mgd plant, concentrate disposal facilities, and pipelines for collection, transmission, and concentrate disposal. Wells will be located along the northern boundary of the cantonment to protect El Paso's and Fort Bliss' fresh wells from brackish water intrusion, a significant problem in managing the Hueco Bolson. The total project cost is estimated at \$72 million. EPWU has received \$21 million in federal funding to offset the costs. The State of Texas authorized a \$1 million zero interest loan that was used for design purposes.

The desalination plant will use reverse osmosis to obtain potable water from brackish water drawn from the Hueco Bol-

son. In this process, raw water passes through a fine membrane that salts cannot pass through. Reverse osmosis produces purified water called permeate. Raw water from new and existing well fields will be pumped to the plant and flow into the process building through a static mixer and cartridge filters.

The design of the plant will incorporate sustainability principles to reduce energy consumption and pollutant emissions. These would include measures such as use of energy-efficient motors, energy recovery turbines, energy-efficient glass to minimize lighting/heating/cooling costs, and installation of water efficient systems such as waterless urinals.



The Fort Bliss/El Paso Desalination Facilities project is a great example of how a public-public partnership can work beneficially for both parties and an example that many DOD installations can be expected to emulate as demands for potable water continue to exceed resource availability.

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PWD



Installations Symposium focuses on Soldiers

by Stephen Oertwig

KANSAS CITY, Mo. – Lightening the load of a Soldier's rucksack with better support was a common theme at the first Association of U.S. Army's Installations Symposium.

"Soldiers don't need to worry about families. Don't put worry in their rucksacks," said Gen. Richard A. Cody, the Army's vice chief of staff.

Maj. Gen. Geoffrey Miller, assistant chief of staff for Installation Management, echoed the same concern for Soldiers.

"What are we doing to lighten his load?" Miller asked those attending. "We care about the people who do this nation's business."

Improving support to Soldiers in an Army at war was the overriding message at the AUSA Installations Symposium held March 29-31 in Kansas City, Mo. "Building Installations for an All Volunteer Force" was



Gen. Richard A. Cody, Army's Vice Chief of Staff, talks about supporting deployed Soldiers and their families.

the theme of the professional development forum for installation and garrison staff. More than 900 people involved with the management of Army installations attended. Professional development seminars focused on the operations, environmental, public works and logistics career areas.

IMA's support for Soldiers and for the war on terrorism was cited as a reason life is getting better for Soldiers and their families.

"IMA is Army's main effort of an Army at war," Cody said. "IMA is the future of Army. We recruit Soldiers but definitely we reenlist families."

Taking care of families when Soldiers deploy is key to "lightening the

load" and helping reduce the stress Soldiers face, Miller said.

"The Army is supporting them with quality installations, schools, and morale, welfare and recreation facilities," he said. "Garrisons are becoming the hometowns of the Army's fighting power with initiatives to transform installations."

One program that is a big success is the Residential Communities Initiative, Cody said. He said RCI is the right thing to do for families and the Army as installations with RCI housing increases. Upgrading family housing and barracks is a priority for the Army.

"Improving housing for Soldiers and families through the Residential Communities Initiative will help meet the challenge of reintegrating Soldiers and families back into military and civilian communities," Miller said.

Guest speakers from across Army and Department of Defense leadership were featured the first day of the symposium. Besides Cody and Miller, speakers included retired Gen. Gordon Sullivan, AUSA president; Philip Grone, deputy under sec- ➤



Maj. Gen. Ronald Johnson (left), Director, Installation Management Agency, and Maj. Gen. Geoffrey Miller, Assistant Chief of Staff for Installation Management, greet participants.



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retary of Defense for Installations and Environment; Geoffrey Prosch, principal deputy assistant secretary of the Army for Installations and Environment; Lt. Gen. Robert Van Antwerp, commander of U.S. Army Accessions Command; and Maj. Gen. Ronald Johnson, director of the Installation Management Agency. The Honorable Raymond F. DuBois, acting under secretary of the Army, was the speaker and guest of honor at the symposium's banquet.

Another common thread among speakers was the Army's recent decision to fund base operations support and sustainment, restoration and modernization (S/RM) at 90 percent for IMA.

"America can afford a top Army," Cody said. "We can build a new Army. We have to stop this roller coaster ride of the Army over two decades."

Increasing funding for BOS and S/RM will help upgrade barracks and family housing.

Miller said the increase in funding by the Army was a bold decision. With the increase in funding installations must learn to streamline business practices and become more effective. Implementing common levels of support (CLS) is part of increasing efficiency, he said. CLS will bring quality, consistency and predictability to the services IMA provides.

Johnson told attendees to be innovative in the business of installation management. "Productivity is the bottom line," he said "You have to reduce costs to increase productivity."

Improving service to Soldiers is important in achieving customer satisfaction, Johnson said. Customer engagement will be more important for IMA in the future, he said.

"What have you done for Soldiers today?" Prosch asked symposium attendees.

He said IMA must take care of Soldiers and their families, help fight the global war on terrorism, provide reach-back capability and help with family support. The Army also must use money wisely to care of its people, Prosch said.

Installations are the focal points for all



Julie Abshire, right, fields a question about the Installation Management Agency at the IMA exhibit during the Association of U.S. Army Installations Symposium March 29-31 in Kansas City, Mo.



Maj. Gen. Geoffrey Miller, Assistant Chief of staff for Installation Management (left), and Maj. Gen. Ronald Johnson, Director of the Installation Management Agency, take questions during the Installations Symposium.

Soldiers because it is where their families live, get health care and are educated, DuBois said. The support Soldiers receive at installations is directly related to recruitment and retention.

"Soldiering is an affair of the heart. Army service is more than a job, but less than an obsession," DuBois said.

Stephen Oertwig is a public affairs officer at HQ IMA. **PWD**



Public Works in the 21st Century

by Alexandra K. Stakhiv

The Installations Symposium sponsored by the Installation Management Agency (IMA) and the Association of the United States Army (AUSA) was held 29-31 March 2005 in Kansas City, Mo.. Under the "Building Installations for an All Volunteer Force" umbrella, the symposium was divided into four tracks: Operations, Environment, Logistics and Public Works. The Army is transforming its installation programs and facilities in order to meet the needs of a Transforming Army at War. The Public Works track presentations explained these changes to the audience of installation/garrison commanders, directors of public works (DPWs), environmental chiefs, HQ IMA and IMA region staff, MACOM Engineer representatives, and USACE personnel involved in the Installation Support Program.

Mr. Joseph W. Whitaker, Deputy Assistant Secretary of the Army (Installations and Housing), commented on the Infrastructure Readiness Report. Facilities quality ratings range from C-1 to C-4, with C-1 indicating minor deficiencies with a negligible impact on mission performance to C-4 having major deficiencies precluding satisfactory mission performance. Whitaker said the Army's overall rating for all facilities in FY 04 was C-3, meaning there are significant deficiencies preventing performance of some missions.

Whitaker also spoke about Congressional concerns including the impact of stationing actions on local communities and the continued use of temporary facilities as well as the expected impacts of BRAC 2005. He addressed the role of installations in getting the Army's message to Congress by following basic rules that include using time efficiently when hosting Congressional members or staffers, having accurate briefing charts that reflect current Army policy; and ensuring the member or staffer has an opportunity to meet with Soldiers and visit the projects/people involved.

As for Congressional inserts, Whitaker advised that the project be consistent with base closure laws, is in the Future Years Defense Program, is necessary for national security and that the contract can be

awarded in the fiscal year that it is authorized and appropriated.

The goal of the Army "90/90" Plan is to bring BOS and S/RM (Base Operations Services/Sustainment, Restoration and Modernization) up to 90% in FY 05 and FY 06, Whitaker said. Currently, about \$1.3 billion is needed to reach 90/90 for FY 05. The plan is for efficiencies to close the gap between 90 and 100%, Whitaker explained. The Army will fund BOS and S/RM at 90% beginning with FY 07.

"We are utilizing all options to maximize our investments by leveraging our resources through initiatives such as the Residential Communities Initiative (RCI), utilities privatization and the Build-to-Lease program in Europe and Korea," Whitaker continued. "We are also taking advantage of assets such as Enhanced Use Leasing where we out lease non-excess, available real property for no less than fair market value; and real property exchange where the fair market value of the land and facilities the Army receives is no less than that of the government-owned real property conveyed; as well as host nation construction programs to provide our Soldiers with the best facilities possible. We have had successes at Walter Reed Army Medical Center, Aberdeen Proving Ground, Fort Monmouth, Fort Bliss and Picatinny Arsenal."

There is a new construction process under development that uses model 1391s for light, heavy and aviation brigade packages, revisions to standards and criteria and adopts innovative acquisition strategies. Whitaker said that installations should start construction in the year of appropriation and stay within the appropriated budget dollars.

"Installations also need to increase the emphasis on energy since energy use in 2004 was up 0.3% from the previous year, primarily due to increased OPTEMPO, energy-inefficient modular buildings and



Mr. Don LaRocque, Chief of IMA's Public Works Division, brings participants up-to-date on public works in the 21st century.

no ESPC authority," Whitaker continued. He suggested restarting ESPCs, promoting energy awareness, adhering to sustainable design in new construction and following through on utilities privatization.

The Army has already exceeded over 258,607 acres with prior rounds of BRAC that affected 143 installations. In mid-May, DoD plans announcement of the BRAC 2005 list. Approval of the list could happen as early as October or as late as December and you need to be ready, Whitaker warned.

Some of the things installations can do to prepare are to update all master plans and facility status documentation, find out the status of all environmental documentation and, most important, speak with ONE voice, Whitaker said. "OSD will issue draft policy guidance in May 05 and we will follow the OSD lead. The Services will use the complete toolbox to transfer property. The Army may use commercial contractors to market real estate. Installations are encouraged to involve their local communities to prepare community redevelopment plans. The goal remains to turn over property no later than when the last Soldier leaves the installation."

It is important that you know where ➤



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the Army is in the budget/programming process and how you fit in, Whitaker cautioned. "You can help by figuring out innovative ways to obtain alternative resources, ensuring the accuracy of data/requirements, and submitting good ideas to legislative proposals promptly," he concluded.

Mr. William Armbruster, Deputy Assistant Secretary of the Army for Privatization and Partnerships, is the Army's champion for RCI and privatization. While privatization plays a big role in helping the Army to transform, it is not the panacea for everything, he cautioned.

The Residential Communities Initiative (RCI) is a program to privatize military family housing functions. It includes the Request for Qualifications (RFQ) solicitation process that takes a project from concept through the transfer of assets and functions. Projects include the out lease of land for 50 years with a 25-year option, title transfer of housing/improvements; operation, management, repair and construction; collection of rents equivalent to BAH, and partnerships with developers, explained Armbruster. The RCI plan covers 45 installations with 35 projects in various stages. The goal is to eliminate inadequate



Chief of Engineers Lt. Gen. Carl A. Strock connects with headquarters during a break.

housing by 2007.

"We are also privatizing utilities to obtain safe, reliable and efficient utilities services," Armbruster said. "We're trying to take advantage of private sector capital and expertise to recapitalize utilities systems to include electric, natural gas, water and wastewater. We have to remember that owning, operating and maintaining utilities systems is not a core Army competency."

The Army strategy involves centralized management and funding with a team approach to legal, financial, procurement and engineering functions. Following a uniform and consistent process that centralizes pre-award procurement functions at the Defense Energy Support Center and an economic analysis at HQDA and DESC, the Army has also developed an Army standard Request for Proposal. Since they have the greatest potential for success, the focus is on large systems.

"We will start visiting all sites on May 16 pursuing a very aggressive utilities privatization program," said Armbruster. "The DoD goal is to evaluate all systems by September 2005."

Armbruster also talked about privatizing Army Lodging, where more than 80% of installation lodging facilities require major renovation or replacement, and the cost to upgrade them is more than \$1 billion. PAL is seeking to revitalize 18,000 installation transient lodging units at 53 sites in CONUS, Alaska and Hawaii through partnerships with the private sector.

Other initiatives include municipal services partnerships such as the two pilot efforts at Fort Huachuca and Fort Gordon Congress has authorized, Armbruster added. Initially, both installations will pursue library services and grounds maintenance, although Fort Gordon will also attempt refuse collection and disposal.

Chief of Engineers Lt. Gen. Carl Strock spoke about the role USACE plays in supporting installations. "It is important that you consider us an extension of your staff," he said. "One of the benefits of USACE districts being project funded is that you don't have to keep a large staff on your books. With funding, you can access the full capabilities of our 35,000 employees whenever you need us."

Partners and customers expect USACE



Ms. Jan Menig, Deputy Assistant Chief of Staff for Installation Management, shares a message from her Blackberry.

to be responsive and flexible as well as to decrease timelines on all project delivery processes across all projects. Gone are the days when they could design a project to be constructed in five years time and expect the needs of the Army to remain constant, Strock explained. Today's facilities must be designed keeping in mind that the needs of the Army are going to change over the facilities' life cycle.

In the goal to provide effective project delivery that is better, faster, cheaper, safer and greener, Strock said he added safety, to include employees, contractors and the public who use the facilities; and greener to support the Army environmental strategy.

"We must look at the simultaneous, multiple programs in an integrated way," said Strock. "The war on terror, establishing modular forces, the Global Positioning Initiative, and the 2005 Base Realignment and Closure will require us to find innovative ways to build installation facilities.

"In partnership with the Assistant Chief of Staff for Installation Management and the Installation Management Agency, we are developing a new Military Construction strategy with standardized processes to get facilities on the ground faster. Industry has proven ideas that we can emulate or share through partnerships. Resourcing master planning and good, consistent DD Form 1391s upfront will help speed up the construction process and ensure success."

USACE is fully engaged in providing support to DPWs and IMA regions to enable them to successfully accomplish



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their installation and Army missions, Strock said. USACE Districts/Divisions support IMA Regions and installations with one lead USACE division aligned with each IMA Region Headquarters. USACE is working closely with MG Miller, MG Johnson, and other ARSTAF elements to ensure that the Army has a solid, integrated plan to support installations worldwide.

"The Army currently builds facilities to a 50-60 year standard. With GPI, BRAC and Army Modular Force facility requirements in addition to the "normal" MILCON program, we need to stretch the available funds," Strock emphasized. "We are talking with the building industry to bounce our newly drafted standards off of them to get their feedback. Given the expected increase in workload, the Army will have less time and money to spend on designing individual solutions. We are also working with the Facility Standards and Standard Design Committee (the ACSIM chairs this committee) to provide better standard designs that will allow us to move to construction sooner."

Mr. Don LaRocque, Chief of the Public Works Division for the Installation Management Agency (IMA), talked about what is happening in the Army Public Works community. Defining public works as "...housing, business operations, environmental—so much more than just engineering," he discussed "happenings" such as Stationing, Mobilization/Demobilization, billeting for medical holdovers, replacing relocatable buildings, the Barracks Improvement Program, flagship projects, BRAC, and "90/90" S/RM/Base Support funding.

"Stationing is simply putting new Soldiers in old places requiring new facilities," said LaRocque. He noted that the Army is adding 10 brigade combat teams and converting the entire operational Army. At Fort Stewart, where they've added a brigade, the entire Third Infantry Division footprint has been changed, Army Transformation is having a significant impact on non-divisional units like the Engineer brigade and combat support folks. The interim facilities are in place for the 3rd



Mr. Claude Matsui was part of the HQ USACE team attending the Installations Symposium in Kansas City, Mo.

Division, but Aviation will be converted early next summer.

Most of the facilities piece is done for the Modular Force conversion of the 101st Airborne at Fort Campbell. However, the Army is still not sure where it is going to put all the Fire (artillery) brigades and will need to revisit that, said LaRocque.

The 10th Mountain Division has converted to the Modular Force structure at Forts Drum and Polk. The 10th Mountain Division went from two brigades to three, and the 4th Brigade of the 10th Mountain Division is now at Fort Polk. "It is remarkable what we have done for three full brigades. We are doing in 12 months what usually takes 5 years!" LaRocque exclaimed. At Fort Stewart, the acquisition was done as one package by the Fort Stewart-U.S. Army Corps of Engineers' Savannah District-Clark Construction Team. At Forts Campbell and Drum, the acquisition was done by the DPW-ACA Team with the local engineering folks and contractors. LaRocque praised both for doing excellent jobs.

"If a relocatable building costs \$250,000 or more, it must be funded with OPA dollars," explained LaRocque. "If it costs less than \$250,000, we use OMA dollars. Most of the time, OMA money is used for modular admin buildings where we can get as many as we need to make up a company, battalion or brigade headquarters."

The Army is currently using a relocatable barracks footprint using the standard that each Soldier has his own good-sized

room with three Soldiers sharing a common kitchenette area, LaRocque continued. Forts Hood and Lewis have improved on that standard by putting a sink in each room, which provides even more privacy.

The Secretary of the Army told Congress that by the end of the calendar year, there would be no more sub-standard barracks—meaning construction will be completed.

The Secretary is committed to sustained funding at 90% and base operations services at 90%—hence the term 90/90 funding explained LaRocque.

The Barracks Improvement Program, also known as "Triage," will improve living conditions in over 300 permanent barracks. LaRocque said this is a holistic barracks strategy where we plan to replace barracks over the next 3-4 years.

"We cannot afford the cost and time of traditional MILCON," LaRocque said. "We need modular construction of permanent facilities wherever we've acquired relocatable buildings. This has the potential to be a \$500 million a year program. The industry can deliver, but we need to change our own bureaucracy. Beneficial occupancy within 12 months is what Congress will be looking for. We have to build faster and more affordable but permanent facilities," he added.

"Don't wait for centralized DA funding to do Flagship projects, which include repair and improvements made to buildings left vacant by deployed Active components" LaRocque warned. "Use local funds as well as central funds."

"Funding will be as equitable as we can make it!" promised LaRocque. "Master planning is important as we are entering an intense planning effort. The fun begins on May 16 with BRAC. You should be planning and programming now—you need to put pen to paper and get the 1391 on a 5-year defense plan now!"

At the conclusion of the Public Works plenary session, the annual DPW and Energy awards were presented, followed by breakout sessions on topics such as Work Classification, Modularity, Privatization and outsourcing as well as Engineering operations.

Alexandra K. Stakhiv is the editor of the *Public Works Digest* **PWD**



2004 Directorate of Public Works (DPW) Awards

The DPW Awards Program is an annual competition conducted since 1994. The program was initiated to foster a spirit of peer recognition for the best in the DPW business worldwide. It involves selecting the winners for outstanding accomplishments in nine categories of installation Public Works activities. Installations/activities submit nominations to Installation Management Agency (IMA) Regions who forward their selections to HQ IMA for consolidation, and then return to the IMA Regions for ranking. IMA Regions may not vote on their own submissions. When ranking is completed, the packages are returned to HQ for computation. Following are the 2004 winners.



DPW William C. Gribble, Jr., Executive of the Year

Patrick Bennett— Technical Director of Public Works, 100th ASG, Grafenwohr, Germany
Mr. Bennett has proven to be a technically superior engineer, an outstanding leader and executive, and a tireless worker. Under his leadership, productivity has increased and morale maintained at a high level while the DPW organization went through a difficult reorganization that combined Grafenwohr and Vilseck operations into the IMA Standard Garrison Organization. Mr. Bennett's wisdom and experience have contributed greatly to the evolution of the \$1.1B Efficient Basing-Grafenwohr project from a concept to its current "under construction" status. He has demonstrated flexibility, effectiveness and a commitment to getting the job done by using a variety of fixed price, indefinite delivery and Job Order contracts plus utility and housing privatization programs to satisfy infrastructure maintenance, modernization, and construction requirements. Mr. Bennett's continuous exceptional performances have measurably improved mission accomplishment and the quality of life for all Soldiers and families in the 100th Area Support Group.

DPW Operations and Maintenance Executive of the Year:

Alan Goo— Chief, Operations and Maintenance Division, Directorate of Public Works, US Army Garrison, Hawaii
Mr. Goo's leadership and personal contributions were instrumental in the development and implementation of a "Telephony" system that utilizes cell phone technology to improve response to customer work requests. Also commendable was the successful implementation of a cyclic maintenance process that reduces customer calls by 50% and the expanded use of energy and water saving devices in all construction maintenance and repair projects. Mr. Goo's unique contributions have improved customer service for all Soldiers and families in the US Army Garrison, Hawaii. Mr. Goo has proven to be a valuable asset to his installation and an inspiration to DPW Operation and Maintenance personnel Armywide.



DPW Engineering, Plans, and Services Executive of the Year:

Michael Lockamy— Chief, Engineer Plans and Services Division, Directorate of Public Works, Fort Bliss, Texas
Mr. Lockamy's selection represents outstanding achievement in all facets of master planning, real property, engineering, con-

struction, and renovation of Fort Bliss facilities. His strong technical knowledge, wisdom and experience were demonstrated in master planning by the development of the \$256M Future Year Defense Program, Military Construction projects, validation of the Real Property Inventory, and improving the accuracy of the Real Property Planning and Analysis System (RPLAN) database. His ability to respond to critical Army priorities were confirmed when he played a central role in resolving facility support issues for deployment of two Brigade Combat Teams and insuring the installation could accept a projected population increase of over 8,000 Soldiers and family members.



DPW Housing Executive of the Year:

Wanda Watson— Chief, Housing Services Division, Directorate of Public Works, Fort Campbell, Kentucky
Ms. Watson's managerial excellence was amply demonstrated in her carrying out the complex activities and responsibilities involved in planning, programming and providing adequate housing for unaccompanied as well as accompanied personnel and their families. Ms. Watson's leadership and management abilities played a key role in the success of Fort Campbell's hous- ➤



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ing program. Her strong technical knowledge, wisdom, and experience have earned many accolades from the installation command and customers. Particularly noteworthy is her leadership and dedication to make the successful transition from government-managed housing to privatized housing under the Residential Communities Initiative as smooth and flawless as possible. Her efforts to re-energize the Community Homefinding, Relocation, and Referral Services office (CHRRS) complemented the RCI initiative during the transition to partnership and reflect Fort Campbell's cutting edge leadership in Army housing.



DPW Support Executive of the Year:

Paul Steucke—Chief, Environmental and Natural Resources Division, Directorate of Public Works, Fort Lewis Washington The DPW Support Executive of the Year award recognizes Mr. Steucke's managerial excellence and productivity in a DPW support function at the installation level. This award also recognizes the complex activities and responsibilities involved in supporting the engineering operations, maintenance, environment and natural resources mission of DPW. Under Mr. Steucke's leadership, Fort Lewis has been remarkably effective in developing and implementing business practice improvements that have significantly enhanced competitiveness and customer support for all Public Works activities. His personal drive and commitment resulted in improvements that earned Fort Lewis the first ISO 14001 certified Environmental Management System in

DOD. Mr. Steucke has fostered the spirits of environmental cooperation and improved relations with the surrounding community, state elected officials and environmental regulators. Notices of Violation have all but ceased. Mr. Steucke has helped raise environmental awareness and improved the quality of life for the entire population of Fort Lewis and the surrounding area.

DPW Business Management Executive of the Year:

Gerhard Hoessel— Chief, Work Management and Customer Services Branch, Directorate of Public Works, Grafenwoehr, Germany

Mr. Gerhard's selection represents outstanding leadership and achievements in all facets of DPW business operations involving requirements identification, programming, budgeting, collection of reimbursements, automation, and personnel management. Particularly noteworthy is the successful merging of the work management and customer services offices of two installations, Grafenwoehr and Vilseck, into a single business office under the Standard Garrison Organization. Mr. Gerhard's work in preparing the ADP Servers for consolidation of the Army's Information Facilities System/Mini-Micro (IFS/M) will help the 100th ASG achieve the IMA goal to streamline the management of infrastructure and resources.



DPW Installation Support Program of the Year:

U.S. Army Engineer District, Seattle, Washington

The Seattle District's is recognized for its support to the Fort Lewis DPW's operation maintenance and repair mission and military construction program. The U.S. Army, Garrison and Fort Lewis, nominated this District for several reasons, including the outstanding assistance as a full partner in the accomplishment of the RPMA, OMA, and MCA missions at Fort Lewis. The exceptional support provided is credited with the successful management of over \$106 million in construction, sustainment, renovation, and modernization projects, the successful implementation of the Residential Communities Initiative for Family Housing Privatization, the ongoing utilities privatization program, and the conversion of Robert Gray Army Airfield into a Joint-Use Airfield. All in the Seattle District can be justly proud of their accomplishments and customer oriented "can-do" attitude that has enhanced readiness and greatly improved the quality of life for all Soldiers, families and civilians at Fort Lewis.



DPW Support Contractor of the Year:

ITT Federal Services GMBH, 415th Base Support Battalion, Kaiserslautern, Germany

ITT Federal Services GMBH is recognized for excellence in its support of an installation's Public Works base operations, real property maintenance and engineer support mission. This selection represents outstanding achievement in the areas of customer relations and customer satisfaction, overall quality and responsiveness to installation requirements and numerous innovations displaying high standards of safety and operational efficiency. A comprehensive ➤



Review of current technologies for erosion control on Army training lands

Military lands need to be maintained to provide realistic and challenging opportunities for Soldiers to practice individual and battle-focused tasks and missions. This means that conservation of soil quality and productivity is an essential component of training. Erosion control is necessary to protect finite military training lands. Controlling erosion requires an understanding of military land-use interactions that can damage or alter environmental resources and appropriate rehabilitation technologies that can be applied to sustain training lands.

A new Public Works Technical Bulletin

(PWTB) reviews current biological and soft erosion control technologies and methods used to prevent soil erosion and degradation of environmental resources. Many of the technologies are cost-effective and can ensure long-term sustainability of Army training lands. Also highlighted within the PWTB are several exceptional and innovative efforts of installation land managers to control erosion with biological engineering techniques. Many land managers have worked together with the Natural Resources Conservation Service (NRCS), U.S. Fish and Wildlife Service (FWS), local universities, and other researchers to devel-

op and implement erosion control plans that incorporate both bioengineering and civil engineering methods that would be suitable for the type of training taking place on their installations.

To learn more about erosion control on military installations visit the U.S. Army Corps of Engineers Public Works Technical Bulletin at <http://www.hnd.usace.army.mil/techinfo/CPW/pwtb.htm>.

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PWD

Evaluation of low-impact tires on military lands

Installations across the country have random off-road vehicles and military vehicles that travel through critical habitat and on fragile soils during training, SPELL (RTLA), Land Rehabilitation and Maintenance (LRAM) and other activities. It has been documented that off-road vehicles can have negative impacts on a system. To counterbalance these effects, both Yuma Proving Ground (YPG) and the Arizona Fish and Wildlife Service (AZ FWS) have used "low-impact" tires on off-road and on-road vehicles while conducting surveys in fragile environments.

YPG's Land Condition Trend Analysis (LCTA) HMMWV and the Arizona FWS have used the "low-impact" tires with great

success. Through their general observations, it was noted that the new tires left virtually no footprint on the fragile desert soils, thereby reducing environmental impacts. The low cord angle, bias tires have a low rate of blowouts, with the Arizona FWS having not had a single incident during the past year of evaluation. In addition, it was noted that the tire doesn't spit out debris, rather it "floats" on the surface, thereby reducing the need for 4X4.

A new Public Works Technical Bulletin transmits and summarizes laboratory, field, and observational data obtained from evaluation of several low-impact tires currently being used by land managers on several installations.

To learn more about low-impact tires, please visit the U.S. Army Corps of Engineers Public Works Technical Bulletin at <http://www.hnd.usace.army.mil/techinfo/CPW/pwtb.htm>.

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quality control program ensures that all daily routine tasks are performed with utmost care while also responding to unforeseen requirements in support of military missions and contingency operations with flexibility and a teamwork

approach. The company motto "Do things right the first time—all the time" exemplifies a commitment to quality proven true by the customer feedback received through the Interactive Customer Evaluation system. PWD

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Hot Topics.



Waterless urinals are 'flush' with benefits

by Dana Finney

Nine years ago, searching for ways to conserve water at Fort Huachuca, Ariz., Craig Hansen installed a waterless urinal in each of three administrative buildings. He wanted to know if the units could save substantial amounts of water, reduce maintenance needs, and find acceptance among males at the Arizona post.

The outcome was so promising that since then, Hansen, energy management technician in Fort Huachuca's Directorate of Public Works (DPW), has overseen replacement of 570 flush urinals with the no-water models. The dramatic reduction in water use – some 23 million gallons per year – has far outweighed any initial resistance to the no-water urinals.

"People get used to things and no one likes change," said Hansen. "But when we would get specific complaints, it usually turned out to be existing problems that had just been ignored over the years, like dry floor drains or broken pipes. If the urinals are installed properly, they don't cause any problems by themselves."

Fort Huachuca is one of several installations that have replaced fixtures with waterless urinals. These units have multiple benefits. In addition to conserving water, they reduce sewage treatment costs and electricity for pumping, require minimal maintenance, and improve hygiene as there are no flush handles to collect germs.

"No-water urinals are the centerpiece of our water conservation program," said Luke Wyland, energy conservation program manager at Fort McPherson, Ga. "With our water costs up 45 percent from last year, the urinals we installed have had a payback of 13 months." Replacing standard urinals with waterless technology comprises part of an installation-wide energy and water management plan at Fort McPherson.

The U.S. Army Engineer Research and Development Center (ERDC) is evaluating waterless urinals at the request of the Assistant Chief of Staff for Installation Management (ACSIM). Results will be considered in deciding whether to include these fixtures in the Installation Design Standards



Installations that use waterless urinals to replace traditional flush fixtures are conserving millions of gallons of water each year, in addition to avoiding repair costs.

(IDS) for Army-wide use. As a sustainable technology, no-water urinals earn SPiRiT and LEED credits while meeting the intent of the Energy Policy act of 1992.

Products vary among manufacturers, with physical features resembling conventional urinals minus the water supply and flusher. Some models have traps that must be cleaned periodically while others have replaceable cartridges and/or liquid sealants. The ones most feasible for retrofitting at installations are those which can be mounted to the wall in the same location as the old ones and connected to the existing drains.

The success of waterless urinals depends heavily on following the manufacturer's instructions for installation and maintenance. They cannot be used with copper pipes because of the potential for corrosion. For all models, the drainpipe slope is critical and all pipes in the restroom should be routed before replacing any urinals.

According to Hansen, "We check the contractors' work to make sure they did everything right. We changed the specs to require them to snake the whole building out before they start installing the urinals – not something they would normally think about doing. If the drains are not clear to begin with, they get worse real quick."

Maintenance also requires a paradigm shift to keep the urinals operating properly. For example, strong chemicals like those used in conventional urinals can damage some no-water units, as can dumping large volumes of water into them. In the first months after installation, the urinals need to be monitored periodically to determine how often to replace filters or clean traps.

"We modified our janitorial contract to have them replace the cartridges in the no-water urinals versus paying for an hour of a plumber's time to do seven minutes of work," said Fort McPherson's Wyland. "The maintenance process is foolproof."

The 23 million gallons of water conserved by Fort Huachuca's no-water urinals equates to more than \$83,700 a year saved for water costs alone. "There is always some controversy about the true cost of our water because we have to pay for other, related things such as retiring water rights," said Bill Stein, energy manager in the DPW. "Our estimate is conservative, with 567 urinals that each save about 40,000 gallons of water per year and a current combined water and sewer cost of \$3.64 per 1,000 gallons used."

Beyond the simple economics, waterless urinals have many other advantages, according to Annette Stumpf, project manager at ERDC's Construction Engineering Research Laboratory (CERL). "In addition to lessening the Army's environmental burden by saving water and energy, waterless urinals are environmentally friendly in that they require no batteries, transformers, or other electronics. They also reduce the wear and tear on wastewater distribution and treatment systems." With Stumpf's encouragement, the DPW at the CERL complex in Champaign, Ill., installed three waterless urinals two years ago.

An executive summary and draft technical note describe CERL's findings from the waterless urinal evaluation. They include guidance for using this technology successfully along with a partial list of vendors. For more information, please visit <https://eko.usace.army.mil/fa/water/> or contact Ms. Annette Stumpf, 217-373-4492, Annette.L.Stumpf@erdc.usace.army.mil. Visit Fort Huachuca's Water Wise Energy Smart Web site at <http://ag.arizona.edu/cochise/wwes/>

Dana Finney is a public affairs specialist at the U.S. Army Engineer Research and Development Center's Construction Engineering Research Laboratory in Champaign, Ill. **PWD**



Security changes . . .

by Marilyn Uhrich

The time was right: the opportunity and the funding were present. Security plus habitat plus cost savings were built into the plan. With all these factors present, there was no reason not to depart from the sterile security design of iron fencing and concrete barricades and to build a security system that would be a catalyst for community environmental education and outreach.

Thus was the reasoning of the Project Delivery Team, led by landscape architect Rhonda Brown, which was charged with the responsibility of bringing the Galveston District's headquarters up to the standards required by Homeland Security guidance. As a secondary benefit, the project brought the district honorable mention in the 2005 White House "Closing the Circle Award."

Funded through a grant from Homeland Security, the entire project cost was \$428,000. It included relocation of an existing guard house, excavation of two acres of two to six foot deep water barriers, raising and widening of the main entrance road, installation of a new bullet resistant guard house with restroom, installation of new entry gates, conduit and entrance card reader boxers.

The Jadwin Building, built on the eastern end of Galveston Island overlooking the Gulf of Mexico and Galveston Bay, is headquarters for the Corps' Galveston District. The PDT looked at the advantages of creating "soft barriers," i.e., wetlands, as opposed to installing the traditional hard structures. Resistance to the plan faded as the team explained the benefits of such a plan and persuaded District leadership to venture "outside the box."

The district would receive savings of more than \$10,000 a year through the elimination of mowing and fertilizing the areas that would be turned into water barriers. Emissions from the mowing, therefore, would be reduced.

The excavated material would be recycled for use as fill to raise and widen the entrance road for the new guard-house providing a savings of more than \$18,000 on construction costs thru not trucking the



fill to the site. And, most importantly, the creation of a sustainable environment which would serve as a community education tool.

Once established, the wetlands and its typical plantings would require only occasional invasive species control, estimated at around \$4,000 every three years. The typical iron fencing would have cost \$500,000 and would have required thousands of dollars in annual painting due to the corrosive coastal environment.

The Seaborne Challenge Corps, a local program for high school students with personal challenges, and a local Boy Scout Troop joined with the Corps on the project, planning trees and shrubs, installing wetland plants, building benches, and

installing signage to educate others about the "water barriers."

A local non-profit program, Water Education for Teachers, will enable teachers to use the fresh water habitat as an outdoor classroom for environmental education. Other groups that have expressed interest in utilizing the habit include Texas Parks and Wildlife Department, US Fish and Wildlife, the Audubon Society, Coastal America and customers of the Corps of Engineers Regulatory Branch.

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