



The Corps

Environment

VOLUME 16, ISSUE 4

OCTOBER 2015

2015 sustainability awardees making impact across USACE

By Clare Palo

U.S. Army Corps of Engineers Headquarters Public Affairs Office

The U.S. Army Corps of Engineers is honored to once again present this year's Sustainability Awards to individuals and teams who are working toward a more sustainable future. The award winners came from across USACE, reflecting a diverse group of individuals and teams who are committed to sustainability and ensuring the agency's Environmental Operating Principles are put into practice every day.

"The commitment to sustainability by these exceptional Corps of Engineers employees makes us all proud," said Maj. Gen. Richard Stevens, the Deputy Chief of Engineers. "This year's USACE Sustainability Award winners are champions in a noble endeavor to increase environmental quality, enhance the mission and become more sustainable. They personify our Command's commitment to Environmental Operating Principles that are making the world a better place."

The following 2015 Chief of Engineers Awards of Excellence Sustainability Category winners will be recognized during a video teleconference ceremony in October.

Sustainability Hero: Mike Ternak, Sustainable Engineering Program Manager, South Pacific Division

Green Dream Team: U.S. Army Engineering and Support Center, Huntsville, Energy Savings Performance Contracting Team

Green Innovation: Europe District's Net Zero Planning Team

Good Neighbor: San Francisco District's Solar Project at Lake Sonoma

Lean, Clean and Green: Detroit District's Flex Fuel Program

Building the Future: Sacramento District's Presidio of Monterey General Instruction Building.

All award winners have been sent forward for consideration in the 2015 GreenGov Presidential Awards program.

Sustainability Hero

Ternak has successfully created innovative sustainability practices and improved management approaches throughout his many years with the Corps of Engineers. He was the lead planner and project manager for two of the nation's first large scale river ecosystem restoration projects: The

Rio Salado Project and the Tres Rio Projects, which received recognition as the USACE Chief of Engineers Design and Environmental Awards of Excellence in 2008 and 2012. As the South Pacific Division Sustainable Engineering Program manager, he has helped the division increase the number of employee Leadership in Energy and Environmental Design (LEED) accreditations from 12 in 2009 to 65. Additionally, the division



Mike Ternak
USACE Sustainability Hero

has produced 45 LEED-certified buildings for federal customers through his management. Not only does he strive to improve sustainability practices but he encourages and helps colleagues with leadership management through training courses and webinars, as well as mentoring interns. In his selfless effort to improve our environment, he continues to design a work community that appreciates sustainability as much as he does.

Green Dream Team

The Huntsville Center's Energy Savings Performance Contracting team has been recognized by the Assistant Secretary of the Army for Installations, Energy and Environment (ASA-IEE), Office of the Secretary of Defense (OSD) and the White House Council on Environmental Quality (CEQ) for its expertise in third party acquisition, acquisition

processes, project execution and quality.

In 2014, the Huntsville Center team began the process to initiate a strategic partnership with the Department of Energy Federal Energy Management Program (DOE FEMP) that resulted in a Memorandum of Understanding (MOU) between Headquarters, U.S. Army Corps of Engineers and the DOE FEMP.

The MOU establishes a framework for partnership and collaboration, leverages the strengths of both agencies, enables better support to federal agencies in meeting the President's Performance Contracting Challenge goal, and has spawned a strategic relationship for the Huntsville Center with the U.S. Air Force. This strategic partnership with DOE FEMP is being

See Sustainability Awards, Page 20



The Motor Vessel Mississippi is docked at McGregor Park in Clarksville, Tennessee, Aug. 11 during a stop along the Cumberland River. The vessel is the U.S. Army Corps of Engineers' largest diesel towboat and flagship to the Mississippi River Commission, which inspected USACE projects along the Cumberland River as part of the commission's annual low water inspection trip.

Mississippi River Commission gains fresh perspective of Tennessee, Cumberland rivers

Story and photos by Lee Roberts

U.S. Army Corps of Engineers Nashville District

The Mississippi River Commission navigated the Tennessee and Cumberland rivers for two weeks in August to gain a fresh perspective for the development of plans to improve the condition of the Mississippi River Basin, foster navigation, promote commerce and reduce flood risk.

The commission met with stakeholders while inspecting the waterways and visited U.S. Army Corps of Engineers Nashville District and Tennessee Valley Authority (TVA) projects. The dialogue with community and business leaders and citizens helps the commission with forming a balanced vision and developing water resource engineering solutions for navigation, infrastructure, comprehensive flood control, environmental sustainability and water supply for the entire watershed, which impacts 41 percent of the United States and includes 1.25 million square miles, more than 250 tributaries, 31 states and two Canadian provinces.

Norma Jean Mattei, civilian member of the Mississippi River Commission and a civil engineer from Metairie, Louisiana, visited Chickamauga Lock in Chattanooga, Tennessee, Aug. 8 to learn about its concrete aggregate problem and structural concerns, and to receive an update on the stalled construction of a replacement lock.

President-elect of the American Society of Civil Engineers, Mattei said participating in an inspection trip and seeing things with her own eyes, like this lock on the Tennessee River, is extremely valuable in her role as a commissioner.

"It's one thing to listen to someone's PowerPoint or to their briefing

See Commission, Page 6

CONTENTS

- 5 Savannah River islands attract a different type of tourist
- 7 USACE 'LEEDs' military green building across Europe
- 8 New England District celebrates successful fish ladders at ecosystem restoration project
- 9 Army Garrison in Japan saves loggerhead turtle hatchlings from July typhoon
- 11 Pennsylvania lake balances needs of man, nature
- 13 Central Everglades Planning Project record of decision signed
- 14 Army Reserve equipment storage site using energy-saving zero-discharge wash rack
- 15 'History Girls' complete mission to recognize Native American site
- 16 Middle school, USACE strengthen winning partnership
- 17 Hawaii's housing partner achieving energy goals
- 19 Fort Campbell completes first phase of solar project — largest in Kentucky



Contractors working for the Norfolk District U.S. Army Corps of Engineers place fossilized shell, obtained from the Virginia Marine Resources Commission, on sanctuary reefs in the Great Wicomico River in Burgess, Virginia, in July. The reefs, originally built by USACE in 2004, are receiving the new shell as part of an adaptive management/rehabilitation project, which is building them up to a higher level promoting a healthier oyster reef. (Photo by Patrick Bloodgood, Norfolk District)

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OCTOBER 2015

The Corps Environment

is an online quarterly produced by the U.S. Army Corps of Engineers as an unofficial newsletter under the provisions of AR 360-1. The purpose of this newsletter is to provide information about Corps environmental actions, issues, policies and technologies. Opinions expressed are not necessarily those of the U.S. Army. Inquiries can be addressed to U.S. Army Corps of Engineers, ATTN: CEHNC-PA, P.O. Box 1600, Huntsville, AL 35807-4301. Phone: 256-895-1809.

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Submissions

The Corps Environment welcomes submissions with an environmental, sustainability or energy focus from USACE and Army units worldwide. Send your articles, photos, events, letters or questions to julia.bobick@usace.army.mil.

Deadline for submissions:

Nov. 15 (January issue)

Feb. 15 (April issue)

May 15 (July issue)

Aug. 15 (October issue)

www.usace.army.mil/Missions/Environmental.aspx

Whenever possible, please enjoy *The Corps Environment* without using paper.



Regional Environmental and Energy Offices

Making a positive impact for USACE, DOD

By Karen Baker

*Headquarters, U.S. Army Corps of Engineers
Chief, Environmental Division*

For the past 20 years, the Army Regional Environmental and Energy Offices (REEOs) have monitored and provided input to proposed state laws and regulations, evaluating them for impacts to installation missions.

While there have been many changes, including the addition of the word “Energy” to the office title in 2011, the core mission remains the same — representing Department of Defense (DOD) and Army interests at the state and regional level to support and advocate for military missions and facilities. The REEOs also promote greater understanding of the Army’s commitment to sustainable practices and energy security through strategic communication with state legislators, federal and state regulators, and nongovernmental agencies.

When a law or regulation important to the Army or DOD is being developed at the state or federal level, REEOs work with other military services to assure that DOD and services’ interests are preserved. The REEOs’ close cooperation between the military and policymakers inform and shape legislation so those who make the laws understand the potential impact on military missions.

The Army REEOs have just completed their first year transitioning from the Assistant Secretary of the Army for Installations, Energy and Environment to the U.S. Army Corps of Engineers. Each of the four Regional Office directors reports to a Division: REEO-Northern in Aberdeen to the Great Lakes and Ohio River Division, REEO-Western in Denver and REEO-Central in Fort Leavenworth, Kansas, to the Northwestern Division, and REEO-Southern in Atlanta to the South Atlantic Division.

Having the Army REEOs more closely tied into Corps of Engineers divisions has made for a dynamic transition year. The REEOs have learned more about how the Corps of Engineers operates, and our workforce has discovered just what the REEOs

can bring to the table in support of our projects and initiatives. And what the REEOs accomplish is impressive.

Through active engagement and strategic communication, the REEOs have successfully informed, shaped and influenced environmental and energy policy decisions in state government, to most recently include:

- The creation of state and regional partnerships, such as with the Regulatory Forum of Missouri, help protect military interests and monitor equitable application of state rule enforcement.

- Working with legislators in Louisiana to withdraw a bill that would have prevented installations within the state from training with specific explosives.

- Work in western states to deconflict proposed siting of wind towers to prevent adverse impact to military training routes and missions.

The REEOs also enable Army and DOD readiness and training by

1. monitoring and engaging on state legislative and regulatory activities;
2. coordinating and communicating Army and unified DOD positions;
3. providing legal and technical expertise for Army’s renewable energy, energy security and Net Zero programs; and
4. developing cooperative partnerships and educating stakeholders on issues that support long-term sustainability of the military.

The offices help the Army make wise use of available funds, eliminate unfair or unnecessary environmental requirements, and ensure compliance with state regulations. They share information about administration positions, meet state legislators and regulators on behalf of installations and,

if necessary, provide testimony. They promote greater understanding among state legislatures and regulatory agencies, federal regulatory agencies and nongovernmental organizations of the Army’s commitment to sustainable practices and energy security.

The challenges continue to grow. State

legislatures pass new environmental and energy laws every year — nearly 200 state agencies, through more than 1,850 separate programs, promulgate, amend or update environmental and energy related regulations and procedures with which our districts and military installations must comply. In fiscal year 2014 alone, REEOs monitored more than 2,500 regulatory and 8,000 legislative actions — all of which can have a huge impact on how we operate.

As we prepare for the next 20 years, we can expect the REEOs to proactively represent Army and DOD interests as states pursue new environmental and energy-related initiatives. To address this ongoing challenge in a resource

constrained environment, the REEOs will shortly launch a new strategic plan — their first since coming to the Corps of Engineers, and one that nests within the Chief of Engineers’ Campaign Plan priorities.

The REEO mission, in greater demand than ever, balances both the requirements of military readiness, and our dedication to being a good environmental steward. The REEOs are well-aligned within USACE, and as the intensity of their work grows, they will be positioned for continued success. ☺



Karen Baker

Timeline:

Key dates shaping REEO history

1994: Deputy Under Secretary of Defense (Environmental Security) launches concept for Regional Environmental Coordinators (RECs)

1995: U.S. Army Environmental Center establishes four Regional Environmental Offices (REOs) across the country

1996: REO facilitates formation of the Texas Pollution Prevention (P2) Partnership

1997: Texas P2 Partnership wins White House Closing the Circle Award

1998: REOs receive Vice President’s Hammer Awards for efforts to reduce pollution and promote cooperation among federal, state and nongovernmental agencies

1999: REO becomes DOD representative in Southeast Natural Resource Leaders Group (SENRLG) focused on establishing collaborative relationships among federal agencies

2000: REO co-facilitates Region 8 Formerly Used Defense Sites (FUDS) partnering efforts with the Environmental Protection Agency (EPA), state regulators and U.S. Army Corps of Engineers

2003: Environmental Council of the States (ECOS) partners with DOD to form ECOS-DOD Sustainability Work Group

2004: REOs participate in pilot partnership to build state and regional support of DOD’s Range Sustainment Initiative

2005: Council of State Governments (CSG) includes sample legislative approaches to prevent encroachment of military training lands, prepared by REO, in its annual selection of Suggested State Legislation

(Timeline continued on Page 4)

ENVIROPOINTS

REEOs serve as 'on the ground' resources for state legislative, regulatory activity

By Adriane Miller

Regional Environmental and Energy Office–Northern, U.S. Army Corps of Engineers Great Lakes and Ohio River Division

Louisiana House Resolution No. 172 could have ended military training with explosives across the state. Introduced early in the 2015 state legislative session, the resolution directed the Louisiana National Guard not to accept, burn or detonate waste explosives on any state property. The resolution's sponsors were responding to the 2012 explosion of waste artillery propellant improperly stored on a military site leased by a private company.

What the resolution sponsors didn't anticipate, however, was the effect the ban would have on training at Louisiana military installations, as well as on training of the state police force. Fort Polk, home of the Army's premier joint training facility, is also a training site for Louisiana State Police explosive ordnance disposal (EOD) teams. Soldiers would no longer be able to train using methods that safely dispose of opened and unused bags of artillery and mortar propellant. The EOD teams that aid local law enforcement also would be limited in the type of support they could provide.

Environmental officials at Fort Polk called the Army Regional Environmental and Energy Office (REEO)-Central in Kansas for assistance. Stanley Rasmussen, REEO-Central acting director, and Michael Weaver, Regional Environmental Coordinator, consulted with the Assistant Secretary of the Army (Installations, Energy and Environment), the Deputy Assistant Secretary of the Army (Environmental, Safety and Occupational Health), the Army Office of General Counsel and Army Environmental Law Division. Then Rasmussen traveled to the state capital in Baton Rouge to meet with Rep. James K. Armes, the state representative for the district that includes Fort Polk and

ultimately the resolution's author, Rep. Eugene Reynolds.

Once Reynolds understood the ramifications of Resolution 172 — not just for the Army but for law enforcement throughout his state — he agreed to withdraw the legislation. He also asked Rasmussen for the Army's help in drafting language for a 2016 resolution that would not prohibit training with military explosives.

"We are grateful for both Mr. Weaver and Mr. Rasmussen's mediation on behalf of Fort Polk," said Charles H. Stagg, chief of the Fort Polk Environmental and Natural Resources Management Division.

Since 1995, the Army REEOs have interceded in issues such as the one that unfolded in Louisiana. The REEOs are "on the ground" resources for the Department of Defense, serving as key linkages to the states and engaging in environmental and energy initiatives that may affect military training, testing and readiness.

"The REEOs help us stay on top of and achieve compliance with state laws and regulations," said Katherine Hammack, Assistant Secretary of the Army (Installations, Energy and Environment), to whom the REEOs report. "They work closely with state legislatures and agencies. This helps us preserve the full use of Army training and testing lands, sustain natural resources, and maximize Army energy and environmental dollars."

Impacting favorably on state issues

DOD established a state legislative and regulatory coordination program in the early 1990s, setting up Regional Environmental Coordinators (RECs) in each of the U.S. Environmental Protection Agency's (EPA) 10 federal regions. In September 1995 the U.S. Army Environmental Center (now a command) opened the four Regional Environmental Offices.

Early in the state legislative and regulatory process, the REEOs identify proposed state bills and rules that might have a positive or negative effect on

installation missions. Then they work to help legislators and rule-writers understand the potential impact.

"You have to know who cares most about the bill and who has the most authority to intervene," said Jim Hartman, DOD REC for Region 5 and director of REEO-Northern, on finding the right legislator to ask for help. "We try to build relationships ... before help is needed."

If a newly proposed bill or rule could negatively impact military training, testing or operations, the REEOs quickly engage, said Mark Mahoney, DOD REC for Region 8 and director of REEO-Western. "By coordinating with the other military services, we provide a single voice in response to officials."

In addition, REEOs actively support legislative and regulatory proposals that benefit installations and enhance long-term sustainability and environmental stewardship.

The REEOs also partner with other federal agencies. In 2013, the U.S. Fish and Wildlife Service (FWS) considered listing the Bi-State (Nevada and California) distinct population segment of greater sage-grouse as threatened under the Endangered Species Act (ESA). Listing the species could make broad swaths of military land and air space in the West off-limits for training.

The REEOs worked with DOD and other federal, state and local partners to develop a long-term conservation plan to protect the ground-dwelling bird. Because of the partners' conservation planning, in April the FWS determined that the Bi-State population of greater sage-grouse does not require ESA protection. In late August, the Pentagon agreed to provide a \$2 million grant to help finance habitat restoration beneath thousands of square miles of Navy training airspace in Nevada, habitat used by the great sage-grouse.

"Trust underlies our successful partnerships with state and federal agencies," said Susan Gibson, DOD REC for Region 4 and director of REEO-Southern. "Trust is the REEO's stock in trade." ☞

Timeline (Continued)

- 2005:** CSG issues Resolution on Encroachment of Military Facilities, supporting buffer zones
- 2007:** REOs transferred from Army Environmental Center to Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health)
- 2007:** REO works with New Jersey regulators, including future EPA administrator, to successfully resolve impacts to military construction at Picatinny Arsenal
- 2007:** REO organizes stakeholders to develop a Candidate Conservation Agreement for the gopher tortoise as a tool to preclude listing the species as endangered
- 2008:** National Conference of State Legislatures establishes Task Force on Military and Veterans affairs
- 2008:** ECOS passes resolution endorsing the work of the ECOS-DOD Sustainability Work Group on emerging contaminants and related risk communications issues
- 2009:** REO assists Radford Army Ammunition Plant in expediting a state air permit to facilitate wartime production of TNT
- 2010:** REO secures agreement by Wisconsin Public Utilities Commission to incorporate requirement for notice to DOD in its wind turbine siting regulations
- 2011:** Army adds energy to REO portfolio; name becomes REEO
- 2012:** REEO testifies against Kansas bill to limit length of conservation easements, affecting existing Army Compatible Use Buffer zones; this bill and future versions do not pass
- 2012:** REEOs begin assisting Army Office of General Counsel, providing legal support to the Army's Energy Initiatives Task Force
- 2012:** REEO engages with installations and U.S. Fish & Wildlife Service (FWS) to conserve habitat of the greater sage-grouse and maintain Army and Marine field training capability
- 2012:** REEO secures nearly \$1 million to assist DOD and Army installations in meeting EPA's Total Maximum Daily Load requirement for Chesapeake Bay
- 2013:** REEO facilitates resolution of soil and erosion control permit deficiencies and delays at Fort Gordon, allowing approximately \$57 million of military construction projects to proceed
- 2014:** REEO coordinates with Army Energy Initiatives Task Force (now the Army Office of Energy Initiatives) and a Georgia utility to build and operate three 30-megawatt solar power generating plants on three Georgia Army installations
- 2014:** REEOs transfer to operational control of USACE
- 2015:** Legislation that would prevent Louisiana installations from conducting training with explosives is withdrawn after bill author meets with REEO
- 2015:** Georgia "3X30" renewable energy project breaks ground on Army installations
- 2015:** Conservation partnership on behalf of the greater sage-grouse prompts FWS to determine protection of the species is not warranted in Nevada and California

Savannah River islands attract a different type of tourist

Story and photos
by Jeremy S. Buddemeier
U.S. Army Corps of Engineers
Savannah District

Threatened by development and predators from every side, birds in and around Savannah, Georgia, are finding safe, pristine habitats in an unlikely place: at the bottom of the Savannah River.

As part of environmental mitigation for the Savannah Harbor Navigation Project, the Savannah District uses sediment dredged from the river to create islands along Savannah's Back River. The islands — four elliptical sand-covered strands each ranging from 4 to 8 acres — are nestled within dredged material containment areas, or DMCA's, and designed to encourage threatened species of birds to nest and proliferate.

Biologists like Savannah District's Ellie Covington are already seeing positive results.

"There are definitely more birds here since last week. Just by the noise you can tell there are more," Covington said during a recent visit to Jones/Oysterbed Island.



Ellie Covington, a Savannah District biologist, counts birds through a spotting scope at Jones/Oysterbed Island June 26. The island is one of four created as part of environmental mitigation for the Savannah Harbor Navigation Project and designed to entice threatened species of birds to nest.

During nesting season, from April to August, Covington and fellow Corps biologist Mary Richards make weekly treks to each of the containment areas, along with three trips a month to Tybee Island, to count birds and assess the health of these habitats. Their daily routine is far from ordinary.

A day at the office

It's early morning and Covington bumps along in a four-wheel drive, all-terrain vehicle in a containment area at Jones/Oysterbed Island. Clad in snake boots, camouflaged pants and a lavender shirt, she stops to set up 100 yards from the edge of the cheese puff-shaped island.

Through her spotting scope she quickly counts and documents a variety of species of birds before moving to a different vantage point. Two threatened species from Georgia and South Carolina, least terns and Wilson's plovers, are showing promise.

According to Covington, last year the island in containment area 12A hosted the largest colony of least terns in South Carolina. In May, she and Richards counted approximately 450 pairs, which is more than 40 percent of the least terns nesting in the entire state.

The same island boasts the largest colonies in South Carolina for black skimmers and gull-billed terns, which are listed as a species of concern, a classification just below threatened.

It's no accident the birds are flocking to these islands.

Each of the islands is surrounded by a 50-foot moat, which keeps raccoons and another of the birds' primary predators — wild hogs — at bay. The islands also mimic birds' preferred habitat, bare-ground sand.

Historically, Covington said, least terns and Wilson's plovers would have been found all along the Georgia-South Carolina coast, but another foe — development — has forced them out of those preferred locations.

"Other than wildlife refuges or bird sanctuaries, you don't really find them," Covington said.

Back at Jones/Oysterbed Island, fuzzy Wilson's plover chicks scurry through ankle-high underbrush. The parents make sharp calls as if to say, "Danger! Hide!"

The main types of birds, including black-neck stilts, least terns and Wilson's plovers, have sorted themselves into separate areas on the island. Wilson's plovers and least terns stay higher up toward the middle of the island, while black-neck stilts remain closer to the water. Covington commented on how territorial stilts can be as a pair took turns circling her from 30 feet up, squawking continuously.

"They'll drive you mad," Covington said.

Looking back through her scope, she smiles.

A male least tern on the northern end of the island has partially swallowed a fish more than half its size. The fish's tail extends another 6 to 8 inches out of the tern's beak, which Covington called "a little ambitious." A few feet away, another male waves a fish back and forth in front of a seated, uninterested female.

Males exhibit this behavior to attract mates and show they can bring home the



ABOVE: A wide shot of the island inside dredge material containment site 12A along Savannah's Back River. The manmade island boasts the largest colony of least terns in South Carolina, which are listed as threatened, and also provides nesting areas for black skimmers and gull-billed terns, which are listed as a species of concern, a classification just below threatened, in South Carolina.



BELOW: Birds face into the wind at Tybee Island.

herring. Covington also noted how the islands allow different species of birds, which have unique nest-building styles, to coexist.

In addition to counting and observing birds, the Corps sometimes makes adjustments to entice more birds to nest.

Last year biologists noticed the island within containment area 13A was overgrown with grass and the Corps applied herbicides. The birds, particularly least terns and gull-billed terns, took note and returned.

Further upriver from Savannah near Port Wentworth, Onslow Island is gearing up for birds.

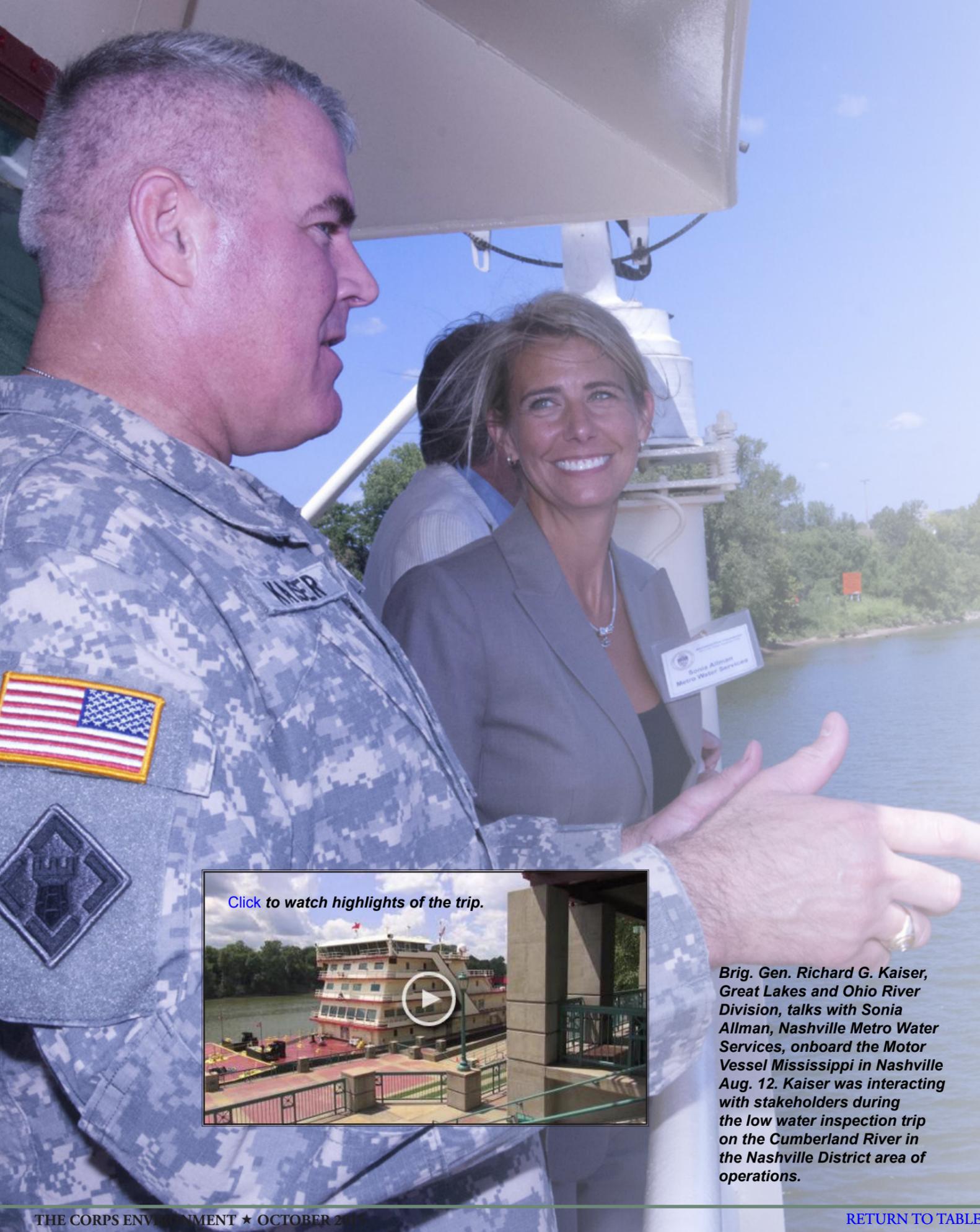
Workers completed construction last spring on a 2-acre bird island set in 120 acres of water. Corps biologists are working with the U.S. Fish and Wildlife Service and

the Georgia Department of Transportation to attract threatened species like least terns and Wilson's plovers to the site, but right now black-neck stilts, herons, ducks and other shorebirds are foraging there.

"It's the first year the area has been available since the late 1990s, so maybe next year more birds will find it," Covington said.

There's no doubt the islands are providing a valuable habitat for birds that have been impacted by development along the coast, and the number of birds that the biologists are observing implies that the word is spreading. But the islands also provide intangibles to others outside the bird community.

"It's the best part of my job," Covington said. "Every day I see something different and learn something new." ☞



Commission

Continued from [Page 1](#)

and look at numbers on a table, and maybe a couple of pretty photos, and have them tell you about the issues that they're experiencing at a certain location," Mattei said. "It's quite another when you get to see what that location actually looks like."

She stressed that being able to visit a project site in person is very beneficial. "It really drives home the issues you've been told and that you've read about in a report."

The commission boarded the Motor Vessel Mississippi in Chattanooga Aug. 8 after touring Chickamauga Lock. Displays were set up to inform visitors about TVA operations at dams on the Tennessee River and Nashville District operations at the navigation locks, and other missions to include recreation and regulatory functions. Stakeholders had access to information on how to receive assistance with water resource stewardship and engineering support for local governments such as ecosystem restoration, emergency response, floodplain management, hydropower and water supply.

The commission then stopped over in Decatur, Alabama, Aug. 9 for additional face-to-face interaction. The 241-foot towboat, which features three 6,300 horsepower diesel engines and is five stories high, continued moving downstream and crossed through the Barkley Canal and Land Between the Lakes into the Cumberland River, arriving at Clarksville, Tennessee, Aug. 11 for another stakeholder meeting while docked at McGregor Park.

The Motor Vessel Mississippi arrived in Nashville Aug. 12 and docked at Riverfront. The commission and local community leaders took a walking tour of the city to learn more about the May 2010 flood. The group then boarded the vessel and traveled back up stream on the Cumberland River to Cheatham Lock.

During the voyage, Nashville District officials briefed stakeholders about post flood actions, recreation and its economic impact to the region, hydropower from a national and regional perspective, and the district's hydropower rehabilitation program.

Participants were encouraged to provide the commission feedback and Greg Batts, owner of Prizer Point Marina and Resort in Cadiz, Kentucky, asked them to foster better communication with the recreation community on the waterways because they want to be partners, contribute and have input in the decisions that directly affect them.

"We can do a lot of things together, but we have to

work together," Batts said.

The commission culminated its trip to the Twin Rivers with a visit to Kentucky Lock in Grand Rivers, Kentucky, Aug. 13. They toured and received an update on the status of construction on an additional lock chamber that will alleviate congestion of commercial traffic on the Tennessee River.

Joanne Mann, executive assistant and Congressional liaison in the Nashville District, said it took about four months of preparation so the commission would have the opportunity to conduct the low water inspection and interact with stakeholders on the Tennessee and Cumberland rivers.

"They're learning about our projects and our challenges and our issues and where we could use help, and how we integrate with other organizations like TVA and the relationships we have with them," Mann said. "We also ensure that the stakeholders are given the opportunity to talk about their issues and challenges and what they hope to gain from what the Corps does for them in the region."

Mattei said the site visits are instrumental because each commissioner sees the rivers and speaks to the people who live, work and recreate on them.

"Whenever I go on these trips it helps me to understand what the issues are in that particular region because the area of the Mississippi River Valley, the entire basin, it's huge," Mattei said.

Each of the commission's seven members is nominated by the Department of Defense or Department of Commerce, appointed by the president and vetted by the senate. Three of the organization's members are officers of the U.S. Army Corps of Engineers; one member is from the National Oceanic and Atmospheric Administration; and three members are civilians - two of whom are civil engineers.

Current members are Maj. Gen. Michael C. Wehr, commander of the U.S. Army Corps of Engineers Mississippi Valley Division and president-nominee of the commission; Honorable Sam E. Angel, Lake Village Arkansas; Honorable R. D. James, New Madrid, Missouri; Mattai; Rear Adm. Gerd F. Glang, National Oceanic and Atmospheric Administration director, Silver Springs, Maryland.; Brig. Gen. Richard G. Kaiser, U.S. Army Corps of Engineers Great Lakes and Ohio River Division commander, Cincinnati; and Brig. Gen. David C. Hill, U.S. Army Corps of Engineers Southwestern Division commander, Dallas. ☞



Brig. Gen. Richard G. Kaiser, Great Lakes and Ohio River Division, talks with Sonia Allman, Nashville Metro Water Services, onboard the Motor Vessel Mississippi in Nashville Aug. 12. Kaiser was interacting with stakeholders during the low water inspection trip on the Cumberland River in the Nashville District area of operations.

USACE LEEDs military green building across Europe

By Jennifer Aldridge
U.S. Army Corps of Engineers
Europe District

Europe District is celebrating sustainable building achievements across the U.S. military footprint in Europe. Located about 1,600 miles apart, in Turkey and Germany, two projects executed by the district earned Leadership in Energy and Environmental Design (LEED) Silver certification earlier this year.

LEED in Turkey

The Ankara Administrative Facility, a \$1.3 million 15,700-square-foot building, houses the legal, traffic management and post offices serving Incirlik Air Base personnel and their families. The building officially opened March 26 and is the first LEED-certified U.S. government facility in Turkey.

It is recognized as a “showcase of sustainable design” by U.S. Green Building Council officials and meets the Department of Defense requirement of LEED-Silver certification, or an equivalent “green” building rating for new construction worldwide.

Volkan Tunay, a project engineer in Europe District’s Turkey Resident Office and a Turkish local national, didn’t know much about LEED before he was assigned to work on the Ankara facility.

“LEED is a really new thing for the Turkish construction industry,” he said. “Working on a USACE LEED project was exciting for me. I would have never been interested in it if it wasn’t for this project.”

As soon as the construction contract was awarded, the team looked at all the LEED credits required to earn certification, he said.

“We determined how to gain points from demolition, excavation and salvaging scrap,” he said. “In the field, we enforced the LEED guidelines to the contractor. We oversaw the segregating of demolition materials — steel and concrete — and their delivery to separate recycling centers in Ankara.”

It was critical to incorporate LEED elements during the design phase, Tunay said. “If we missed credits during design, there was no way to go back and make them up.”

Upon certification, the project earned 53 of 59 possible LEED-Silver points. Some of the sustainable features include installation of materials with high recycled-content value and extra-thick building insulation; application of indoor air-quality management, and erosion and sediment control plans; use of low-volatile, organic-compounds paint, coatings, adhesives and sealants; and installation of landscaping that does not require a permanent irrigation system.

An administrative building is a good candidate for LEED certification, said Rich Gifaldi, the district’s sustainability engineering manager and LEED-accredited professional.

“We are looking at creating an indoor environment that fosters a healthy workplace and really encourages productivity,” he said. “With a rating system like LEED, we can do that.”

In Turkey, a characteristically warm and dry country, this building will use more cooling compared to a similar structure in Germany, Gifaldi said.

“The increased ventilation system will take in fresh air from outside and pass it through a number of filters and then cool it before it gets to the occupants,” he said.

Working through the LEED-certification



The recently completed Ankara Administrative Facility, a \$1.3 million, 15,700-square-foot building, houses the legal, traffic management and post offices serving Incirlik Air Base personnel and their family members. The building officially opened March 26 and is the first LEED-certified U.S. government facility in Turkey. (Photo courtesy 39th Wing Public Affairs)

process, waste management, local material use and water conservation were critical to building a sustainable, energy-efficient facility, Gifaldi said.

For instance, more than 40 percent of this project’s construction materials were manufactured or harvested within 500 miles of the project site — supporting the local economy.

In addition, more than 97 percent of its construction waste was diverted from a landfill and the building is expected to use 57 percent less water than a similar facility, according to LEED-certification documents.

Today, sustainable building is critical in Turkey because the country is running out of energy, Tunay said.

“Everything is about reducing energy consumption,” he said. “To be able to manage the enormous energy needs these days, we have to come up with smart solutions to reduce consumption of natural resources. This way, we can all live in a better world.”

LEED in Germany

In April, Europe District earned its first LEED-Silver certification for a U.S. forces project in Germany executed through the indirect-contracting process. Construction of U.S. Africa Command’s administrative facility on Kelley Barracks was managed by the Baden-Wuerttemberg Bauamt, the district’s German construction-management counterpart. The \$7.2 million project was also the first on U.S. Army Garrison Stuttgart to be LEED certified through the district.

While the Bauamt executes many projects for Europe District in Stuttgart, this was the first LEED project it worked on, said Hoang Hintzsche, a Bauamt project manager. While the district has many LEED projects in progress with the Bauamt, Gifaldi said this is the first to be completed.

“It has been five years in the making,” he said.

The newly renovated administrative facility, believed to have been constructed in the 1930s and used by the German military, is a historic building.

Through the renovation, the contractor was able to maintain the historic façade and appearance while completely changing the inside, Gifaldi said.

“Renovation projects are typically more challenging than new construction,” he said. “This is a good example of what we thought we could do, and we actually did it.”

The facility was designed and constructed to use 64 percent less energy than a similar building with an anticipated energy savings of \$60,000 per year. In addition, it is expected to use 44 percent less water due to the installation of waterless urinals, high-efficiency toilets and low-flow faucets — with an anticipated \$5,000-per-year savings in water and sewage costs, according to LEED-certification documents.

More LEED Silver ahead

In addition to the facilities in Ankara and Stuttgart, the district is set to earn

LEED-Silver certification for three more projects in 2015, including the Consolidated Community Center at Incirlik Air Base, a warehouse facility at McCully Barracks in Wackernheim and the Stuttgart Elementary and High schools in Boeblingen.

Welcoming students, parents and educators this past month, the Stuttgart schools are on track to earn the first LEED certification for a Department of Defense school in Europe.

Together with Department of Defense Education Activity - Europe, U.S. Army Garrison Stuttgart and the Baden-Wuerttemberg Bauamt, Europe District constructed the project with the following sustainable features:

- 150,000-liter rainwater collection and utilization system to supply outside water hoses and be used for fire extinguishing.
- Green roof covering more than 185,000 square feet reduces stormwater runoff and provides added insulation.
- Extensive use of natural light.
- Energy-efficient interior lighting system.
- Operable windows in all classrooms for utilization of fresh air.
- Building is anticipated to save approximately \$250,000 in annual energy costs using 40 percent less energy than a baseline building.

To successfully execute the project, German and American engineers partnered to meet rigorous LEED-Silver standards. Many interesting concepts became a reality here, said Jennifer Regel, the Europe District project engineer.

Being located in Europe, engineers take for granted that the district is doing so many things in so many different countries, Gifaldi said.

“In the U.S., a similar district would probably get excited if they certified a project in a new state, where the standards are somewhat similar. In Europe, we are actually certifying projects in various countries where the standards, culture and local practices are drastically different,” he said. ☺

New fish ladders to help improve fish populations at Ten Mile River Restoration Project celebrated

By Ann Marie R. Harvie
U.S. Army Corps of Engineers
New England District

As a result of the Ten Mile River Ecosystem Restoration Project, fish living in the Ten Mile River can swim to their spawning grounds unassisted for the first time in more than a century.

New England District Commander Col. Christopher Barron joined state and local leaders and other partners in cutting the ribbon on the ecosystem restoration project June 19 in Rumford, Rhode Island.

The Ten Mile River watershed runs approximately 56 square miles through Massachusetts and Rhode Island. Denil fish passages were constructed at the first three dams on the river: Omega Pond, Hunts Mill and Turner Reservoir, all in Rhode Island.

“The Ten Mile River project will support a population of more than 200,000 anadromous fish,” Barron said. “Those fish are an important part of the link between upstream river habitats, Narragansett Bay and the Atlantic Ocean.”

Other speakers included Senator Jack Reed; Senator Sheldon Whitehouse; Congressman David Cicilline; Janet Coit, Director of the Rhode Island Department of Environmental Management; Buck Sutter, National Marine Fisheries Service; Paul Lemont, city of East Providence; Anne Maxwell, Rhode Island Coastal Resources Management Council; Wenley Ferguson, Save the Bay; and Keith Gonsalves, Ten Mile River Watershed Council. Reed, who is on the Senate Appropriations Committee, played a significant role in obtaining the funding for the project.

“Each fishway is composed of 4-foot-wide channels that have a one vertical on eight horizontal floor slope to allow the passage of river herring, such as blueback herring and American Shad,” Barron said.



One of the fish ladders constructed along the Ten Mile River. The Denil Fishways provide for upstream migration of anadromous fish to their historic spawning areas (Photo by Brian Murphy)

“The Denil Fishways provide for upstream migration of anadromous fish to their historic spawning areas,” said Larry Oliver, chief, Evaluation Branch, Engineering/Planning.

Prior to construction of the Denil Fishways, organizations such as the Ten Mile River Watershed Council were assisting the fish over the dams by catching them with fish nets.

“Getting the herring upstream matters,” Whitehouse said. “Herring are incredibly cool fish.”

The New England District team and their partners completed construction of the fish ladders at Hunts Mill Dam and Turner River Reservoir in 2012, and completed the final critical link in the system at Omega Pond Dam this past April.

The contractors that performed the work on this project were John Rocchino

Corporation of Smithfield, Rhode Island, S and R Corporation of Lowell, Massachusetts, and Marguerite Concrete of Hopedale, Massachusetts.

The project was cost-shared under the Section 206 cost shared percentages with additional contributions from several other sources. The federal share for the Section 206 portion of the project, totaling 65 percent was \$5 million. The non-federal share of 35 percent, sponsored by the Rhode Island Department of Environmental Management (RIDEM) was approximately \$2.7 million.

Although the construction of the Denil fish ladders at all three sites is complete, the district team and the RIDEM will be adding eel passes at Omega Pond Dam and Turner Reservoir. They will also be making minor modifications to obstructions downstream of Hunts Mill Dam. ☺

Hospital earns environmental honors

By Suzanne Ovel
Army Medicine

The green efforts of Madigan Army Medical Center at Joint Base Lewis-McChord, Washington, earned it a Practice Greenhealth Environmental Excellence Award this year.

This award is given to healthcare organizations that find innovative ways to improve their environmental programs; Practice Greenhealth is an organization that encourages and recognizes environmentally responsible practices in hospitals.

“As the co-chair for the Green Team, I would say Madigan’s success in greening the hospital is mainly (attributable to) the positive impact demonstrated daily by staff at all levels of the organization,” said Michael Kyser, supervisor of Madigan’s Environmental Health Service. “It’s a direct result of adjusting to new initiatives and innovations supporting the quality of environment of care with regards to the materials we use and the processes we’ve so gracefully accepted as the right thing to do in the best interest of fiscal integrity, patients, visitors, staff and the environment.”

Madigan’s Green Team boasts a trail of other environmental awards in the past few years, to include Practice Greenhealth’s Top 25 Environmental Excellence Award in 2014, its Environmental Leadership Circle in 2013, Partner for Change with Distinction award in 2010, and its Making Medicine Mercury-Free award in 2007.

In the past year, Madigan’s green efforts resulted not only in significant environmental results but also other recognition, to include earning an Energy Star award from the Environmental Protection Agency for obtaining an energy efficiency rating of 91 percent —

largely due to investing in green technology such as LED lighting, green tips on energy-saving bulbs and energy-efficient facility equipment.

Madigan also won first place in a Joint Base Lewis-McChord Net Zero competition in support of sustainability goals for energy, water and waste. Not only did Madigan increase its diversion rate from 45 to 48 percent from 2013 to 2014 (diverting material from the trash that can be recycled, reused, recovered or repurposed), but the hospital took the goal of reducing trash to a new height by making Madigan’s last unit organizational day a waste-free event. Through efforts such as handing out compostable utensils (made of sugar and corn starch), Madigan’s Green Team managed to divert 98 percent of the byproducts of the event to be recycled or composted.

In general, Madigan strives to reduce its environmental impact through efforts such as sending cooking grease to be used for biofuel, returning expired medications to pharmaceutical distributors for credit, and ensuring that regulated medical waste, one of the largest sources of waste at the hospital, is significantly reduced. Madigan shrunk its regulated medical waste by 4 tons from 2013 by focusing on properly separating out trash from medical waste.

“It’s the effort of the [operating room] that’s really making it happen,” Kyser said.

With a long history of environmental improvements (such as increasing its recycling rate from 10 percent in 2005 to 48 percent in 2014), Madigan’s Green Team plans to keep this trend going through the end of 2015. Current projects include installing water bottle fillers throughout Madigan to encourage the use of reusable water bottles, and an effort to repurpose old furniture that cannot be reused by recycling any scrap metal, wood and cloth used. ☺

Torii Station saves turtles from typhoon

By Richard L Rzepka
U.S. Army Garrison Okinawa, Japan

Japanese myth has it that a fisherman named Urashima Taro once saved a turtle from certain death and was rewarded by the emperor of the sea with a journey to a palace at the bottom of the ocean. Upon his return, Taro realized that 300 years had passed and he no longer recognized his home.

The Environmental Division of the Directorate of Public Works at U.S. Army Garrison - Okinawa, Japan, saved 88 loggerhead turtle hatchlings from Typhoon Chan-Hom, which made landfall on Okinawa July 10. According to environmental specialists, the severe winds and rain would have certainly spelled the end for the tiny turtles, which were eventually released July 17 at Torii Beach where nesting occurs from April through August.

One by one, Environmental Specialist Tomoko Ikema plucked the sleepy-eyed hatchlings from a blue bin, setting them on a frenzied journey as they scuttled across the sand and out to sea. The reddish-brown loggerheads, with their heart-shaped top shells, are listed as an endangered species under the protection of the Endangered Species Act of 1973.

Ikema, who takes daily strolls on Torii Beach searching for tracks and nests, is passionate about preserving the diversity of life on Torii Station and Okinawa for future generations.

"Aside from being legally required, we need to maintain a rich diversity and healthy environment for humans and next generations," Ikema said. "If we maintain the biodiversity, humans and other species will better survive any environmental changes. Biodiversity has significant impacts on agriculture, as well as marine and fresh water food resources," she said.

According to the National Oceanic and Atmospheric Administration, loggerheads face danger both in the water and on the beach. The main cause of decline and primary threat to loggerhead turtle populations is capture in fishing gear, like longlines and gillnets, but also in trawls and dredges.

Ikema recommends not fishing at night during nesting season, and picking up drifted plastic and trash on the beach as simple but effective measures to take in protecting the flora and fauna on and around Torii Station.

There are 144 floral species and 487 fauna species observed at Torii Station, 48 of which are protected, according to Environmental Division Chief Brandy Hawley. The biodiversity found at Torii Station makes the installation unique, she said.

"Karst [limestone] features near the shoreline contain the greatest density and diversity of vegetation, which in turn creates potential habitat for several species of mammals, birds, reptiles and amphibians," Hawley said. "Due to the diversified habitat features at Torii Beach, many indigenous flora and fauna can be observed, including several protected species."

Unlike the Japanese myth of Urashima Taro, the garrison's Environmental Division doesn't want future generations to wake up to a unrecognizable environment.

"The [Directorate of Public Works] Environmental Conservation programs are fortunate to have great support from our leadership and we continue to strive to protect our natural resources," Hawley said. ☺



Environmental Specialist Tomoko Ikema plucks sleepy-eyed hatchlings from a blue bin, setting them on a frenzied journey as they scuttled across the sand and out to sea July 17. According to the National Oceanic and Atmospheric Administration, loggerheads face danger both in the water and on the beach. The main cause of decline and primary threat to loggerhead turtle populations is capture in fishing gear, like longlines and gillnets, but also in trawls and dredges. (Courtesy photos)

Partnership blossoming in ‘The Land of the Blue Sky’

By Maj. L. Dot Browning

U.S. Army Corps of Engineers Operations Officer
Far East District, Seoul, Republic of Korea

Instructors from the U.S. Army Corps of Engineers worked side-by-side with leaders from the Mongolian Ministry of Environment, Green Development and Tourism (MEGDT) and the Mongolian University of Science and Technology (MUST) in April as part of a continuing effort to aide Mongolia as they develop their national water resource management strategies.

This workshop focused on educating and training water resource professionals from both government agencies and those within the private sector on a variety of topics and technologies. Lectures and activities introduced participants to components of the USACE dam safety program, as well as the available tools and software to aid in hydraulic and hydrologic analysis. By the end of the workshop, the participants had knowledge of the USACE software and modeling procedures so they can analyze potential risk during the design of new dams and assist in the evaluation of existing water resource projects.

The workshop provided lecture-style instruction, followed by practical exercises through the use of USACE modeling software designed to increase the hydrology and hydraulic modeling capacity. The modeling software bolsters the participants’ ability to predict floods, as well as better analyze the impacts of potential dam breaks.

“The workshop was excellent, especially because it was very intellectually engaging,” said Badamdorj Purev, Policy Regulation Department chief in the MEGDT. “We can use what we learned immediately. Previously, similar modeling efforts would have taken nearly 30 people, over the course of many days to produce comparable results. With the information gained and the software USACE has provided, we will be able to greatly reduce the time and personnel required to complete the studies and analysis needed for dam safety throughout Mongolia.”

In order to truly understand the importance of these workshops, I had to learn a little bit more about Mongolia, as a country, and more importantly, its people. What I discovered during my time there was their history, climate and geography have created a culture and people who are rugged yet kind, both environmentally conscience and economically sensible, all while maintaining a balance of humility and national pride.

Known as “The Land of the Blue Sky,” Mongolia has more than 250 sunny days per year. With the Gobi desert

to the south and cold, mountainous regions to the north and west, its geography is extremely diverse. Most of the country is hot in the summer and extremely cold in the winter. Russia borders Mongolia to the north and China is its southern neighbor.

Mongolia is one of the most sparsely populated countries in the world. It is more than double the size of Texas and nearly 16 times larger than South Korea, but only has a population of about 3 million people, of which approximately 30 percent are nomadic or semi-nomadic. The average annual precipitation is highest in the lightly populated northern regions (7.9 to 13.8 inches) and lowest in the more populated southern area (3.9 to 7.9 inches). Managing Mongolia’s limited water resources is of top concern as the nation’s economy continues to develop and it’s a truly challenging problem. The people of Mongolia are facing this challenge head-on and have started with increased emphasis on education.

“All of the participants in the workshop were engaged throughout the week,” said Paul Yoo, workshop coordinator and Special Assistant to Far East District Engineering Division chief.

“They worked together to understand the material presented and asked for additional training and education on multiple topics presented this week. It was impressive to observe and to be a part of it.”

Kent Walker, a hydraulic engineer and part of the USACE team that traveled to Mongolia, was also impressed by the workshop participants.

“It’s great to see this level of interest in hydrology and hydraulics for dam safety studies, especially given the diverse educational backgrounds of those who participated in this workshop,” Walker said. “They asked well informed questions that indicate comprehension of difficult technical concepts even with materials being translated between English and Mongolian. I would be honored to continue working with the Mongolian people as they develop their water resource management strategies.”

After spending time with the workshop participants, attending various meetings and experiencing their warm culture, it was clear the Mongolian people we met understand the challenging prospect of managing the country’s water resources. Additionally, they recognize and appreciate the value of workshops and training opportunities provided by the USACE enterprise.

The trip to Mongolia was an experience I will never forget. I am truly looking forward to the next workshop, as collaboration with Mongolia continues. ☺

Sustainable Training Area workshop in Italy targets environmental balance

7th Army Joint Multinational Training Command, Grafenwoehr, Germany

There is no conflict between respecting the environment and ensuring that the United States and Italian armies can continue to train in Italy. This was the conclusion of the Friuli Venezia Giulia officials and U.S. and Italian military representatives who gathered for a two-day U.S.-Italy Sustainable Training Area Management Workshop June 9-10 in Udine, Italy.

“The biodiversity in Friuli is also thanks to the presence of the American military,” said Mariagrazia Santoro, Friuli Venezia Giulia Minister for Infrastructure. “Without the U.S. Army here, there would be shopping centers and industrial plants in these training areas.”

Santoro underscored the importance of continued environmental monitoring, but also noted that recent tests have indicated there are no problems.

The relationship the U.S. Army wants and needs with Friuli is one of trust, transparency and regular dialogue, Brig. Gen. Chris Cavoli, commander of the U.S. Army’s 7th Army Joint Multinational Training Command, told the workshop participants. Cavoli outlined some of the environmental protection programs the U.S. Army is conducting in Europe and pledged an increased outreach in Friuli, which is fundamental for the training needs of the U.S. Army in Italy.

After outlining the types of Army training in Friuli and the technical ways the U.S. mitigates environmental impact, training expert Perry Doerr said that leaving behind clean training areas is a matter of pride and professionalism.

“There is an etiquette that outdoorsmen have — leave no trace — return the outdoors in the condition in which you found it. It is a matter of personal discipline for Soldiers not to leave a mess — also because in a war zone it can be an intelligence risk,” Doerr said.

In addition to Friuli Region officials, the 70-person audience included representatives from the U.S. Embassy in Rome and senior Italian military officers from both Friuli and Rome. The workshop participants spent one afternoon at the training site in Dandolo to gain a better understanding of the training the U.S. Army conducts in Friuli. Later in June the U.S. Army hosted Friuli Region officials to observe training, including a parachute jump. ☺



Army Brig. Gen. Christopher Cavoli, commanding general of the 7th Army Joint Multinational Training Command, speaks with Mariagrazia Santoro, Region Friuli Venezia Giulia Minister for Infrastructure, during the Sustainable Training Area Management Conference June 9 in Udine, Italy. (Photo by Paolo Bovo)

Lake staff strives to balance needs of man, nature

By Fred Furney

*U.S. Army Corps of Engineers
Baltimore District geographer*

For years, the staff at central Pennsylvania's Raystown Lake has incorporated several principles into the operation of its facility, which is managed by the Baltimore District. One of the most prevalent principles is Aldo Leopold's "Conservation is a state of harmony between men and land." The lake's unique diversity of natural resources and those affected by the project's existence are managed through good stewardship and sound land-management techniques.

One of the goals of the project is to maintain and enhance the quality of existing resources through an active management program designed to optimize the natural-resource potential.

These management practices must also align with the needs and desires of the approximately 1.2 million people who annually visit the project. The effects of these practices are not only felt locally and regionally, but also have impacts downstream to the Chesapeake Bay.

The Natural Resource Management Program at Raystown Lake is divided into three main programs: wildlife management, forest and habitat management and fisheries management.

The primary objectives for wildlife management are to maintain or enhance habitat components, such as conifer cover, grassland habitat and riparian buffers.

Forest and habitat management objectives are focused on diversification within the major vegetation types to include different age classes and a diversity of field types. The objective of the fisheries management program continues to be the establishment of an integrated fisheries management plan that includes fish-structure placement, fish stocking and fisheries population research.

Due to Raystown Lake's hilly terrain, barren substrate, and regular wind and wave generation, the lake constantly faces severe shoreline deterioration and subsequent siltation. As a tributary to the Chesapeake Bay, it is important to limit sedimentation entering the waterway.

Raystown Lake staff has partnered with the Pennsylvania Fish and Boat Commission (PFBC) to initiate and design a unique, cost-effective, habitat-supporting and aesthetically pleasing solution to shoreline erosion. Both vegetative management and mechanical practices like live stakes and riprap are employed at the lake to reduce erosion and soil runoff, preserve water storage capacity for flood risk management, maintain water quality, and preserve and enhance the lake's water quality and fishery.

Raystown Lake staff has been at the forefront of the Federal Land and Resource Management watershed approach by leveraging partnerships with various state and federal governmental agencies like the PFBC and developing ties to volunteer groups, local universities and public and private entities to come up with innovative and cost-effective solutions to manage resources — even through resource constraints.

Through an innovative partnership, the Corps worked with The American Chestnut Foundation (TACF) and Friends of Raystown Lake to establish an American chestnut orchard in 1999 in order to maintain a continued genetic stock of the species for use by TACF. The benefits of this program are multi-faceted. Re-establishment of the valued native tree at the lake would directly improve degraded forest lands, educational opportunities and sustainability. Habitat tours at the lake now include a special visit to the orchard site to highlight



Raystown Lake hosts its annual Wheelin' Sportsmen event in Huntingdon County, Pennsylvania. The Baltimore District hosts this event in coordination with the National Wild Turkey Federation to allow hunters with disabilities the chance to harvest a deer on the last day of Pennsylvania's regular firearm whitetail deer season. (Courtesy photo)

the cooperative project.

To further highlight Raystown's commitment to education, for more than 40 years, Raystown Lake has partnered with Juniata College, which operates an on-site education and research center for students. This allows the facility to obtain quality data at virtually no cost. The students use this lakeside facility to perform studies on vegetation, the life cycles of fence lizards, song birds and turtles, water quality and aquatic invasive species.

Raystown Lake and the Ruffed Grouse Society entered into an agreement in the late 1990s that created two unique habitat improvement projects in memory of Jim Bashline, a well-known outdoor writer and conservationist. The Jim Bashline Wildlife Habitat Management Area is managed through timber harvesting. Management activities are also coordinated by the Pennsylvania Game Commission (PGC). Timber harvest operations provide the dense, young forest habitats required by ruffed grouse, American woodcock, golden-winged warblers and numerous other species. Additional activities include the establishment of conifer seedlings and fruiting shrub plantings to augment local food sources and provide cover.

The project also offers interpretive stations designed to educate on the benefits of tree identification, timber harvest, plantings and wetland habitat.

The National Wild Turkey Federation (NWTF) has also been an invaluable partner to Raystown Lake. The Terrace Mountain Chapter of NWTF has worked with the Corps to plant flowering crab-apples; clear locust trees; and plant clover, warm season grasses, corn, sorghum, buckwheat and sunflowers.

Raystown Lake and NWTF also annually host the popular Wheelin' Sportsmen Hunt, which allows hunters with disabilities the chance to harvest a deer on the last day of Pennsylvania's regular firearm whitetail deer season. This specialized hunt also functions to control the over-abundant deer population and to reduce damage to native vegetation. Raystown Lake has also worked with PGC, Ducks Unlimited, and the U.S. Fish and Wildlife Service to establish wetlands.

"What makes Raystown Lake so dynamic is the balance between the recreational and environmental stewardship programs," said Jude Harrington, lead park manager. "What makes these two high-profile programs so effective is the various private-public partnerships we have been able to forge." ❧

Park rangers share passion for outdoors, flood mitigation

By John Budnik

U.S. Army Corps of Engineers Alaska District

Much like the Chena River snaking through the heart of downtown Fairbanks, a passion for the outdoors flows through the veins of the park rangers at Alaska District's Chena River Lakes Flood Control Project. The two are contributing members of a team overseeing 20,000 acres of multipurpose public land.

Senior Park Ranger and Natural Resource Specialist Jacob Kresel and Park Ranger Cole Van Beusekom are easy to recognize with their forest green uniforms, "Smokey Bear" hats and Corps castle belt buckles. The opportunity to work at the Chena Project in North Pole is a fulfilling vocation for both.

"I have always loved being outside and in the woods. I grew up on a nice chunk of land in Elk Mound, Wisconsin," said Kresel, 27. "It seemed like becoming a park ranger for the Corps was that access to a career where I get to be an outdoorsman."

Growing up in Delano, Minnesota, it only took a short time for Van Beusekom, 25, to realize his calling. "I wanted to be a ranger since I was a young lad," he said. "My office is the wilderness."

During their childhoods, backwoods experiences filled with boating, hiking and subsistence expeditions shaped these two men into their current roles at the project. Kresel said his fondest outdoor memory was a 60-mile, six-day canoe adventure down the Flambeau River. Whereas Van Beusekom described a two-week family canoe and camping trip through the Superior National Forest as a rustic chapter during his upbringing.

"These two bring a special energy to the project, which is especially enhanced by their high interests in hunting, fishing and the outdoors," said Tim Feavel, Chena Project manager. "As every Alaskan knows, it takes a special breed to thrive in the Interior and park rangers are no exception."

The two are equipped with educations that translate well into their daily duties, which include law enforcement and public safety patrols; community engagements; contract management for the Corps public land; special use permit issue and monitoring; and wildlife habitat enhancement.

Kresel studied conservation at the University of Wisconsin - River Falls with an emphasis in biology, environmental studies and outdoor education. Meanwhile, Van Beusekom earned his degree from the University of Minnesota in recreation and resource management.

Overall, the duo claims there is great satisfaction from interacting with visitors using the land.

"Since I have been working here, learning how to talk to people, whether to de-escalate a situation or answer general questions has provided me with the greatest lessons," Van Beusekom said.

Furthermore, strong relations with the visitors and members of the North Pole and Fairbanks communities are critical for mission success.

"Maintaining a good rapport with the public and helping them understand how the gates and dam operate is important," Kresel explained. "This way,

people know what our capabilities are and what we are mandated to do at the project."

The Chena Project is the most northern flood risk mitigation operation within the Corps and is responsible for protecting Fairbanks, North Pole and Fort Wainwright from high water on the Chena River. In 1979, its construction was completed for \$256 million in response to the devastating 1967 Fairbanks flood. During that event, heavy rains swelled the Chena and Little Chena rivers causing water to pour into downtown Fairbanks and the outlying region. Nearly 7,000 people were displaced from their homes and damage estimates totaled more than \$80 million.

Located 20 miles east of Fairbanks, the key components of the Chena Project include Moose Creek Dam, an 8-mile-long earthen dam, four large flood gates and a 3,000-acre grassy floodway. Since its completion, the dam has been operated successfully 22 times — most recently in the summer of 2014. Based on flood prediction and modeling charts, it is estimated that the culmination of these activations have resulted in a cost savings of more than \$370 million in damage prevention, said Julie Anderson, civil engineer in the Operations Branch.

"The Chena Project dam is there for a reason, serving a purpose along with the floodway," Van Beusekom said. "The dike systems are not just earth and embankments. There is a purpose to them."

The integrity of Moose Creek Dam is critical to avoiding property damage or worse. Therefore, preservation of the embankment is a community effort that requires public understanding of the destructive impacts from all-terrain vehicles to its gravel surface and silt-blanket, Feavel said. With more than 165,000 visitors each year, two rangers enforcing illegal off-road use on the dam cannot stop the problem, but can help slow it down, Kresel said.

"We try to reduce the amount of [all-terrain vehicle] traffic in the floodway to protect the area from damage from the tires that may cause rutting," Van Beusekom said. "Otherwise, it increases the risk of dam failure."

Ultimately, as part of an engineer team that monitors and regulates river flow during high-water events, the rangers' primary duties are to manage



Park Ranger Cole Van Beusekom and Senior Park Ranger and Natural Resource Specialist Jacob Kresel consider the opportunity to work at the Chena Project in North Pole a fulfilling vocation. (Courtesy photo)

all public use of the land, enforce rules, answer questions, and control crowds and traffic. Also, they help project and district staff observe water levels, embankment and floodway conditions as well as manipulate gate functions.

"Flood risk management becomes the No. 1 priority and recreation second," Kresel said. "However, we do not shut down recreation during an event."

The Chena Project offers a myriad of recreational opportunities such as hunting, hiking, fishing, horseback and walking trails, paved bike paths and excellent wildlife viewing.

If water conditions are right, throughout July, salmon can be seen swimming up the Chena River to spawn and the top of the outlet works control structure is an excellent place to see them. Project staff sets up displays, star tent and picnic tables on the deck to encourage the public to view the migration upstream, Feavel said. The Alaska Department of Fish and Game also establishes a counting station every year. In previous years, about 10,000

salmon have passed through the dam on their way to their spawning grounds through mid-August.

Certainly, the rangers' strong friendship helps them achieve success during the tense moments of a dam operation or while conducting general oversight of the land. Growing up in the same part of the country, sharing a love for their professions and partaking in the occasional hunting and fishing trip together has strengthened that bond, Kresel said.

"He is a great role model to look up to," Van Beusekom said. "Kresel has been here a few more years than I have, so he is a great resource of information about the dam and area."

Together these rangers have driven ATVs hundreds of miles into remote parts of the Chena Project to root out timber poachers, squatter shacks, dumped vehicles, land encroachments and off-road violators, Feavel said.

"We went up river on a boat patrol to check out the bear and moose camps," Van Beusekom explained. "We look at those to ensure there are not residential cabins or trash left behind on the project boundaries."

"We are here to protect Fairbanks," Kresel said. "An understanding of what we do here and sharing that with other community members is ideal. That way, we can be as helpful as possible to the public."

Learn more about the Chena Project at <http://1.usa.gov/1JAmKtl>. ☞



Panorama of newly renourished Venice Beach (Photo by Erin Duffy)

Partners celebrate the sand on Venice Beach

By Erica Skolte

U.S. Army Corps of Engineers Jacksonville District

Jacksonville District joined its partners in celebrating the completion of the Venice Beach renourishment project at “Celebrate the Sand” June 5 on Venice Beach, Florida. Mayor John Holic served as master of ceremonies, and U.S. Congressman Vern Buchanan and Sarasota County Commissioner Al Maio addressed more than 100 members of the public in attendance.

The City of Venice and the Army Corps of Engineers signed a shore protection agreement that includes periodic sand placement — or renourishment — every 10 years during the 50-year lifecycle of the project. The initial project started in 1996 added 250 feet of sand to a minimal stretch of beach due to erosion. The beach was renourished in 2005, and again in 2015.

The project helps protect infrastructure and property from storm damage. Additional benefits include habitat for shorebird and sea turtle nesting and support for local recreation and tourism.

“These shore protection projects work, and they save the nation billions of dollars,” said Corps Project Manager Milan Mora at the event. “The project contractor, Great Lakes Dredge and Dock, placed more than 790,000 cubic yards of sand on 3.2 miles of Venice Beach shoreline. This work will go a long

way toward protecting this community.”

“I am very excited to have served as the project engineer on-site for the completion of the second renourishment of Venice Beach, from the south jetty to south of the pier. It is important to me from both a personal and professional standpoint,” said Erin Duffy, Tampa resident engineer. “It is one of the very first beaches I visited after returning home from my deployment to Iraq, prior to joining the Jacksonville District.

“It has been very fulfilling to be a part of the Venice Beach renourishment. The project will protect the area from storm damage, including erosion and surges from hurricanes and tropical storms,” Duffy said. “We are hopeful that this renourishment will provide protection for another 10 years, based on the two previous renourishment projects.

“The coordination between the Corps, the City of Venice, the Florida Department of Environmental Protection, the elected officials and the contractor, Great Lakes Dredge and Dock, was integral to the success of the project,” she added.

“The Venice Beach Shore Protection Project wouldn’t be possible without the collective efforts of all of us working together,” Mora said. “The partnership between the Army Corps of Engineers and the City of Venice, and the cooperation of many state and federal agencies helped to ensure the success of the project.”

Central Everglades Planning Project Record of Decision signed

By Jenn Miller

U.S. Army Corps of Engineers Jacksonville District

Assistant Secretary of the Army for Civil Works Jo-Ellen Darcy signed the Record of Decision for the Central Everglades Planning Project on Aug. 31, signifying the completion of the final administrative review for the ecosystem restoration project’s report.

The Central Everglades Planning Project, also known as CEPP, is the culmination of a three-year planning effort involving the U.S. Army Corps of Engineers Jacksonville District, the South Florida Water Management District and other representatives from all levels of government, stakeholder groups and the public at large. The schedule for this study was driven by the administration’s commitment to Everglades restoration as signified by the president’s inclusion of CEPP within his “We Can’t Wait” initiative.

“Achieving this milestone validates the work of the Jacksonville District team,” said Col. Jason Kirk, U.S. Army Corps of Engineers Jacksonville District commander. “Today we celebrate this important approval that aids our moving forward in the comprehensive effort to restore the central part of America’s Everglades.”

CEPP combines several components of the Comprehensive Everglades Restoration Plan, and is designed to capture water that is currently being discharged to tide and direct additional flows to the Everglades and Florida Bay. The project optimizes the use of public lands to move additional water to the south.

“The latest progress on CEPP reflects the continuing commitment between the Corps, the district and all the stakeholders who share the goal of restoring the Everglades,” said Daniel O’Keefe, chairman of the South Florida Water Management District Governing Board. “CEPP will play an important role in allowing more water flow to the central Everglades, Everglades National Park and Florida Bay while benefiting the coastal estuaries.”

The Corps submitted the final report for administrative review to the Office of Management and

Budget and the Assistant Secretary of the Army for Civil Works in December 2014. With administrative review now complete, the report will be transmitted to Congress for authorization and subsequent appropriations.

“The signed Record of Decision signifies the completion of the final checkpoint in the report’s review process,” said Howard Gonzales Jr., chief of Jacksonville District’s Ecosystem Branch. “With this signed document, we are one step closer to making these plans a reality.”

The Corps prepared the CEPP planning document using a pilot process designed to reduce the overall time allocated for a study of this magnitude. In prior years, plan formulation and review may have taken six years or longer. The CEPP process was completed in half that time.

“Momentum remains strong in our Everglades restoration efforts,” Gonzales said. “The Central Everglades Planning Project is a vital component in our restoration efforts and I am extremely proud of the collaborative effort that was undertaken to get us to where we are today.”

The Corps’ planning process requires robust public participation to ensure stakeholder involvement, understanding and support. For the Central Everglades Planning Project alone, 74 public engagements were conducted within 29 months.

“The dedicated and collaborative efforts undertaken

by the Corps, partnering federal and state agencies and stakeholders was pivotal in the completion of the Central Everglades Planning Project,” said Kim Taplin, Central Everglades Branch chief for the Jacksonville District. “This is not just a success for the district, but for everyone who participated in the process.”

CEPP was implemented successfully as part of the Corps’ modernized planning process. Given the size and complexity of this project, the implementation period will occur over multiple years and the project is expected to be implemented in phases.

The implementation period could range from six to 26 years depending on funding. Information is online at http://bit.ly/CEPP_USACE.



Army Reserve moving toward more sustainable facilities

California Equipment Storage Site using energy-saving zero-discharge wash rack

By Col. Stewart Fearon

U.S. Army Reserve 63rd Regional Support Command
Mountain View, California

The 63rd Regional Support Command (RSC) Directorate of Logistics has the mission to repair and maintain more than 30,000 pieces of military equipment that are stored and maintained at Equipment Concentration Sites (ECS) throughout California, Nevada, Arizona, New Mexico, Texas, Oklahoma and Arkansas.

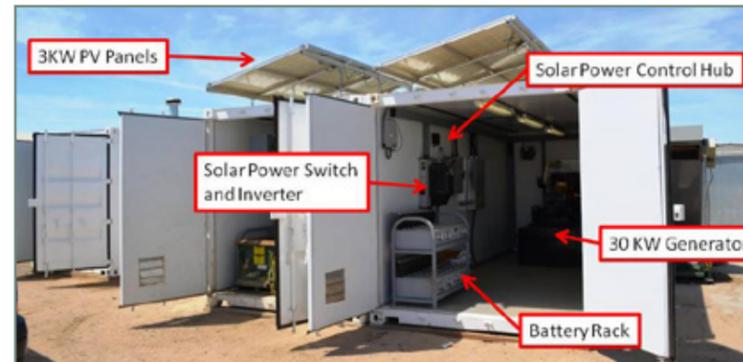
One particular ECS, located in Yermo, California, has 2,066 pieces of equipment worth more than \$208 million. ECS 171 is strategically located near the National Training Center (NTC) at Fort Irwin, California, to provide equipment to U.S. Army Reserve units taking part in training. Yermo's location gives it easy access to California's highway infrastructure and a rail head allows for the rapid movement of military vehicles and equipment to any port along the west coast and the world. More than 120 units store equipment at ECS 171 because of the accessibility and proximity to NTC.

Before working on equipment, it has to be thoroughly cleaned. This makes it easier to identify worn or damaged parts and prevents dirt or contaminants from getting into the equipment, which can cause additional wear and tear.

The equipment also has to be cleaned prior to transporting it across state lines to prevent the spread of non-native vegetation to other regions. This is accomplished by using a wash rack that is basically an industrial sized high pressure car wash. Wash racks normally use a lot of water and are not conveniently located.

Executive Order (EO) 13423, Strengthening Federal Environmental, Energy and Transportation Management, was signed by President George Bush Jan. 24, 2007. It requires all federal agencies to reduce water use by 2 percent annually through fiscal year 2015. EO 13693, Planning for Federal Sustainability in the Next Decade, signed by President Barack Obama March 19, 2015, calls for the reduction of water use in federal buildings by 2 percent per year through fiscal year 2025. On top of that Jerry Brown, the governor of California, issued an executive order mandating water restrictions throughout California.

Several of the maintenance technicians at ECS 171 who served in Iraq and Afghanistan used solar powered decontamination and wash systems that used recycled water while they were deployed. They took their



ABOVE: The ECS 171 wash rack does not require external power to operate. The control system operates off a rack of batteries that are charged by the photovoltaic panels. The pump is driven by a diesel engine and produces a constant stream of hot water at 3,000 pounds per square inch (PSI).

TOP RIGHT: The above ground steel wash rack is a portable custom containment system with a closed loop zero-discharge wash rack that does not need a constant supply of water.

RIGHT: The wash rack at ECS 171 is 18 feet wide and 53 feet long with two 18-foot center troughs with automated conveyor systems to remove solids. The mud or debris is separated out using a wedge wire screen filter and suction pump. The sludge is then deposited into two dewatering quarter yard hoppers with filter bags where it is tested for hazardous materials and then disposed of properly. (Courtesy photos)

experiences in theater and applied them to the problem of maintaining the equipment, saving water and energy, and protecting the environment in Yermo. The above ground steel wash rack they chose is made by Riveer and was provided by and installed by EST Companies.

The Riveer Engineered Wash Water Recover System has zero discharge and is a portable custom containment system that does not require any special permits to operate.

This system is designed for vehicles and equipment up to 15,000 pounds per wheel, which is important when cleaning the Medium Flail Vehicle used to clear mines.

Because it is a closed loop "zero-discharge" wash rack, it does not need a constant supply of water. This also prevents any waste water from being discharged into local streams or rivers, eliminating the need for a storm water pollution prevention plan.

The wash rack at ECS 171 is 18 feet wide and 53 feet long with two 18-foot center troughs with automated conveyor systems to remove solids. The mud or debris is separated out using a wedge wire screen filter and



suction pump. The sludge is then deposited into two dewatering quarter yard hoppers with filter bags where it is tested for hazardous materials and then disposed of properly.

In addition, the ECS 171 wash rack does not require external power to operate. The control system operates off a rack of batteries that are charged by the 3 kilowatt photovoltaic panels. The pump is driven by a diesel engine and produces a constant stream of hot water at 3,000 pounds per square inch. All the components are contained in three 20-foot insulated, climate controlled shipping containers with aluminum interior wall skins. This makes the entire wash rack system easily relocatable.

Hugo Gonzales, 63rd RSC director of logistics, said his goal was to "protect the environment; reduce the water and power consumed; and provide mission ready equipment for Soldiers to train on at a moment's notice." This system helps create

sustainable facilities while reducing water and power consumption in accordance with EO 13693 and California's mandatory water restrictions.

Because of the success at ECS 171, Gonzales is putting in similar systems at ECSs in Gatesville, Texas; Fort Sill, Oklahoma; Fort Hunter Liggett, California, and Fort Sam Houston, Texas. This is just one of the ways the Army Reserve is serving as a good steward of the environment and creating more sustainable facilities. ☺

'History Girls' complete mission to have Native American site recognized

By Ann Marie R. Harvie

U.S. Army Corps of Engineers New England District

After a year of proposals and hard work, a group of Massachusetts eighth-graders was able to have a historical Native American site, Passanageset Knoll, added directly into the Geographic Names Information System (GNIS) — the official geographic names database for the federal government. The "History Girls," as they have become known, launched an effort to rename the Broad Meadows Marsh in Quincy, Massachusetts, to the Passanageset Park after discovering the area was a Native American site.

The Broad Meadows Middle School students — Michaela O'Gara-Pratt, Eve Anderson, Colleen Connor, Grace Higgins, Abigail Kraunelis and Mackenzie Maguire — received correspondence from the U.S. Board on Geographic Names in May regarding their proposal. "The Board is responsible for approving any new name for an unnamed geographic feature before it can be shown on federal maps and other products," Jennifer Runyon of the U.S. Geological Survey said in the letter to the girls. "However, most of its decisions are

made for features that are natural, such as mountains, rivers, valleys, bays, lakes, and so on. 'Administrative' or man-made features, including parks, are usually named by the agency that manages them. So, in this case, it is not necessary for the board to make a formal decision on the name Passanageset Park at Broad Meadows Marsh."

Because there was already support for the new park name from the mayor of Quincy, the Quincy Park and Recreation Board, the Quincy School Committee, the Massachusetts Tribe and the U.S. Army Corps of Engineers, the board was able to add the park name directly into the GNIS, according to Runyon. Therefore, the name is immediately official for use by any federal department or agency.

The new GNIS entry is available on the board's site: <http://geonames.usgs.gov/domestic/index.html>. The name is displayed, along with the geographic coordinates of the park, as well as links to various mapping services.

The district restored the Broad Meadows Marsh and the city is maintaining the uplands as a public park.

Wendy Gendron, the district's planning study manager, was contacted by the girls early

in their efforts and she referred them to Marc Paiva, the district's archaeologist and tribal liaison. He met with the girls and their teacher Ron Adams in June 2014.

"The History Girls proposed to recognize a significant Native American site known as Passanageset Knoll, which is located behind the Broad Meadows Middle School within the salt marsh, which they discovered through research about the area," Paiva said. "This relatively unknown site was the location of the Native American Massachusetts Tribe's summer village or 'sachem's seat,' before they were forced by disease and epidemic to move to the more well-known Moswetuset Hummock located at the northern end of Wollaston Beach."

The New England District provided its support in consulting with the various Tribal entities and individuals

and assisted in arriving at proper signs and wording to recognize and commemorate the Native American history of Quincy, particularly at this significant Passanageset Knoll site.

Broad Meadows was a tidally influenced salt marsh prior to a Corps navigation improvement project placing dredged material in this area in the early 1950s, which increased its elevation above that of regular tidal flooding converting it to a lower value, non-tidal habitat dominated by the reed species known as *Phragmites australis*. It was recognized as a potentially valuable marsh restoration project (Section 1135 of the Water Resources Development Act of 1986).

The district, together with the city of Quincy, completed the salt marsh restoration at Broad Meadows Marsh in 2013. A portion of the project was partially funded by the Neponset River Watershed Association. The restoration replaced the low value common reed (*Phragmites australis*) with salt marsh, wet meadows and grasslands, improving habitat for fish and wildlife. The district and city improved the walking paths in the summer of 2014 and will continue to manage *Phragmites* throughout the site.

The community celebrated the official opening of Passanageset Park at Broad Meadows Marsh June 24. ☺



Marc Paiva with the History Girls after their presentation June 13, 2014. (Photo by Ron Adams, Broad Meadows Middle School)



The Broad Meadows Environmental Restoration project in Quincy, Massachusetts.

School, Corps strengthen winning partnership

Story and photos by Shayna Brouker
U.S. Army Garrison Wiesbaden, Germany

Forget science fairs with baking soda volcanoes and Pi Day with pies to try and understand the significance of 3.14.

While such activities sure make learning about science and math fun, the students at Wiesbaden Middle School take science seriously with the help of a handful of experts from the U.S. Army Corps of Engineers Europe District. Now they have an award to show for it.

The middle school and the district won the Military Child Education Coalition (MCEC) Pete Taylor Partnership of Excellence Award for Outstanding Individual Project. Principal Dr. Susan Hargis, who secretly submitted the award, and Vanessa Pepi, a Europe District Environmental Branch project manager, attended the awards ceremony in Washington, District of Columbia, in July.

“To me, the award was important because I wanted to honor the Corps for what they’ve done on a larger scale,” Hargis said. “Saying ‘thank you’ and writing emails only goes so far. I hold them in the highest regard, and I wanted them to be honored by the Military Child Education Coalition. This is about the work that five people put into the school.”

The award recognizes successful partnerships and projects that ultimately benefit military-connected children. For the past few years, district engineers and environmental specialists have been showing seventh-grade students firsthand practical application of science, technology, engineering and mathematics in everyday life and careers. Highlights included classes taught by USACE experts, field trips to the golf course to learn about environmental management and a garden planted by the students and Corps employees.



Volunteers tend the garden planted by students and Army Corps experts Aug. 6.

change of pace opened their eyes to a different arena of careers and added relevance to what they were learning.”

The award is the latest in a string of recognitions for the middle school, including the Green Ribbon Award for reducing environmental impact and utility costs, promoting better health and ensuring effective environmental education — an accomplishment that saved the Garrison more than \$27,000 in energy costs. ☺



Wiesbaden Middle School Principal Dr. Susan Hargis and Europe District Project Manager Vanessa Pepi with the Military Child Education Coalition Pete Taylor Partnership of Excellence Award for Outstanding Individual Project.



Napa dry bypass complete

ABOVE: A couple walks along a concrete path Aug. 4 in the new dry bypass in downtown Napa, California. The dry bypass is the latest in a series of flood risk reduction projects on which the U.S. Army Corps of Engineers Sacramento District and Napa County Flood Control and Water Conservation District have partnered to help prevent flooding in downtown Napa. USACE South Pacific Division Deputy Commander Col. Eric McFadden and Tambour Eller, Sacramento District deputy district engineer for programs and project management, joined nearly 200 attendees Aug. 4 to celebrate the completion with state and local officials.

(Photo by Tyler Stalker, Sacramento District) MIDDLE: Shown in July shortly before completion, wooden stakes hold down netting to help plants grow, as thriving vegetation is one key to stabilizing the river bank and helping to prevent erosion.

LEFT: Flood walls lining the bypass are designed to help keep flood waters contained and on course during large storm events. Native plantings in the dry bypass will help prevent erosion to the bypass when used during future storm events. (Photos by Luke Burns, Sacramento District) ☺

Second wind turbine adorns Tooele Army Depot skyline

By **Kathy Anderson**

Tooele Army Depot, Utah

Seven large semi-trucks hauled parts and material for the installation of the second wind turbine in the energy corridor of Tooele Army Depot (TEAD), Utah.

The U.S. Army Corps of Engineers Sacramento District awarded a \$5.5 million contract July 8, 2014, to Icenogle Construction Management Inc. of San Francisco for the installation of a 1.7 megawatt (MW) wind turbine at TEAD.

“This project demonstrates the Army’s continued commitment to help reduce Department of Defense energy dependency,” said Royal Rice, Tooele Army Depot’s energy manager.

The project includes placement of a state-of-the-art 1.7MW wind turbine at TEAD’s designated energy corridor. The turbine will generate 4.7 million kilowatt hours per year — enough to power 500 to 550 homes. With installation completed in August, the turbine stands 262 feet high. Each blade is 165 feet long.

“The new wind turbine, together with the existing wind turbine, solar array, back-up generators, battery storage system, micro grid and other renewable sources planned, will help provide a sustainable and secure power source for the depot,” said Dave Simpson, district project manager. The district is scheduled to turn the wind turbine over to the depot this month. ☞



Tooele Army Depot’s second wind turbine stands 262 feet high and each blade is 165 feet long. When fully operational, the new turbine will generate 4.7 million kwh per year — enough to power 500 to 550 homes. (Courtesy photos)



Hawaii’s military housing communities committed to achieving energy mandates

Island Palm Communities, U.S. Army Garrison - Hawaii

Since the U.S. Army Garrison - Hawaii’s Island Palm Communities (IPC) housing development got underway in 2004, it has gained a lot of momentum in the area of energy efficiency.

Committed to helping the Army achieve mandates to have 20 percent of its energy needs met by renewable resources, the IPC partnership is looking forward to exceeding these requirements upon completing its initial development in 2020.

“Since we started our development in 2004, there’s been tremendous growth in methods, technologies and business models surrounding energy efficiency,” said Pete Sims, regional project director for IPC.

“Through a power purchase agreement with Solar City, we’re able to maximize rooftop photovoltaic (PV) systems on our homes, and along with our solar hot water program, we project nearly 30 percent of IPC’s energy needs will be met through renewable resources.”

Currently, 12 percent of IPC’s energy needs are being met by the 9.85 megawatts of PV installed on homes. When IPC’s development is complete, PVs will generate up to 18 megawatts of power, making IPC one of the largest solar-powered communities in the world.

A new initiative at IPC is the Building Energy Management System (BEMS). Through the application of smart technology and demand management software, IPC is modeling a 20 percent reduction in household energy.

“We installed BEMS in 24 homes last year in a pilot project, and early data shows a 10 percent reduction in home energy use,” Sims said.

BEMS provides residents with real-time energy data, and it can perform an automated analysis that finds energy-wasting equipment in a home. Armed with this information, residents can make informed decisions on how they manage their household consumption and even remotely make changes.

“Our families have welcomed the tools and resources, and they’ve taken the initiative to manage their energy consumption and demonstrate through the pilot program how easily it can be accomplished,” Sims said.

Upon completing the pilot, IPC will develop a schedule to install BEMS throughout the rest of its neighborhoods within the next five years. ☞



U.S. Army Garrison - Hawaii housing communities like Helemano Military Reservation, a housing area for Schofield Barracks, continue to expand the renewable energy program with the installation of photovoltaic systems atop existing homes through builder Island Palm Communities. (Courtesy photo)



The bathroom facility at Supply Park on Fort Supply received an on-grid solar power upgrade July 21 to offset electricity costs for the facility.

Solar power saves Fort Supply Lake energy

Story and photo by Eric Summars

U.S. Army Corps of Engineers Tulsa District

Tulsa District's Fort Supply Lake Office in Oklahoma is making waves when it comes to the USACE Go Green initiative — solar waves. The district installed 18 solar panels and an inverter July 21 to provide up to 5 kilowatt hours of electricity to power a bathroom facility at Supply Park Public Use Area.

"The photovoltaic system at Fort Supply Lake is the first of its kind in the region to be installed in cooperation with Northwestern Electric Cooperative Inc.," said Don Underwood, Fort Supply Lake assistant lake manager.

As an on-grid system, the panels will supplement electricity to one of the buildings in Supply Park Public Use Area and hopefully reduce energy consumption and utility costs.

This solar energy installation was made possible through the award of a sustainability project submitted through a recreation budget request for fiscal year 2015. Inspired by an executive order to strengthen federal environmental, energy and transportation management, the project is improving energy efficiency through sustainable, renewable energy resources.

"Long term, our goal is to see Fort Supply Lake become the greenest project within Tulsa District," Underwood said. "Pole mounted photovoltaic lighting has been in place for about five years on select boat ramps at Fort Supply. This year we added three more pole mounted systems, and we have added three more through the Defense Logistics Agency Purchase Place system. Ultimately all of the security lighting at Fort

Supply will be powered by the sun."

Another way Fort Supply is trying to decrease the use of resources is through the use of waterless urinals at one facility and by continuing the effort to replace all flush urinals at all waterborne facilities with a waterless design to reduce the use of water and electricity.

To date, the largest green project at Fort Supply was the installation of a geothermal heating and cooling system in the lake office.

According to Underwood, all of the energy efficient items in place now have worked flawlessly.

"With the exception of the geothermal unit, these items have all been somewhat experimental and have proved to work extremely well," Underwood said. "While the overwhelming majority of the effort has been geared toward smaller, more affordable items, project staff understands mountains can only be moved inch-by-inch."

Seeing good results makes it easier for personnel to stay engaged and constantly examine new ways to improve energy and resource conservation efforts.

"Transitioning to conservation-friendly amenities takes time," said Kathy Carlson, Fort Supply Lake manager. "These efforts have been bolstered by the American Recovery and Reinvestment Act of 2009, and sustainability funding outside the normal budget and likely wouldn't have been possible otherwise."

"Because of outstanding expertise and technical support from the Tulsa District Engineering and Construction Division, we were encouraged to jump at each opportunity to expand the conservation effort at Fort Supply Lake, and we intend to keep pushing for change in the way services are provided." ☺

Fort Carson collects energy, water conservation awards

By Susan C. Galentine

Fort Carson, Colorado

Fort Carson collected its fourth Federal Energy and Water Management Award and third Secretary of the Army Energy and Water Management Award in July. This year, the Colorado installation earned honors for its overall energy and water conservation program efforts. The Federal Energy Management Program (FEMP), in cooperation with the Federal Interagency Energy Policy Committee, sponsors the annual federal award to recognize individuals and organizations for significant contributions to energy and water efficiency within the federal government.

The post also won its third Secretary of the Army Energy and Water Management Award since 2008, in the Energy Efficiency/Energy Management category.

"The accomplishments of Fort Carson demonstrate our installation's total commitment and continuous progress in using resources more efficiently and, ultimately, saving defense dollars," said Garrison Commander Col. Joel D. Hamilton. "The Fort Carson Team is known as a leader throughout the Army and beyond for our legacy of doing the right thing when it comes to conserving energy and water."

The installation earned the top spot in both award rounds for energy projects and outreach efforts in fiscal 2014, which included completing several energy and water projects, pushing energy awareness and continuing to engage critical partnerships to investigate additional renewable energy opportunities.

The Directorate of Public Works Energy Team successfully leveraged multiple funding programs including the Energy Conservation Investment Program, Energy Savings Performance Contracts and Military Construction dollars to improve energy efficiencies and add more renewable energy to Fort Carson's energy portfolio. Outreach efforts to increase energy and water conservation efforts included growing a robust facility manager program and initiating courtesy building energy audits.

These combined efforts helped move Fort Carson closer toward established Net Zero energy and water goals by yielding a 16 percent energy use intensity reduction (energy use per square foot of facility space) over the fiscal 2003 baseline and more than 31 percent water use intensity reduction (water use per square foot of facility space) over its fiscal 2007 baseline.

The cost savings from the efforts completed in fiscal 2014 will save the post an estimated \$450,000 per year in energy and water costs.

Fort Carson's new construction efforts continue to focus on renewable energy. More than 5 megawatts of photovoltaics are installed on Fort Carson, more than a dozen facilities have solar hot water systems, eight facilities operate off ground source heat pumps and three facilities have transpired solar walls which all contribute to its renewable energy portfolio.

One of the major projects highlighted in the award was the expansion of the installation's reclaimed water system to irrigate Iron Horse Park and sports fields, which is anticipated to save close to 90 percent of the annual irrigation water costs instead of using drinking water.

Ultimately, the desired outcome of the reclaimed water system expansion effort is to use 100 percent, roughly 200 million gallons, of Fort Carson's treated waste water for irrigation of priority turf areas during the watering season. ☺



A large-scale project to expand the reclaimed water system to irrigate the majority of the turf areas on Fort Carson included expanding the Cheyenne Shadows Golf Course holding pond to hold up to 16 million gallons of water for use during watering season. (Fort Carson Directorate of Public Works)

Fort Campbell completes Phase 1 of solar project

U.S. Army Corps of Engineers Engineering and Support Center, Huntsville and U.S. Army Garrison Fort Campbell, Kentucky

Fort Campbell celebrated the completion of the first phase of its 5 megawatt (MW) solar array project, the largest in Kentucky, with a ribbon cutting Sept. 21.

The ribbon cutting marked the completion of a 1.9 MW array, executed through a 10-year Utility Energy Services Contract (UESC) with Pennyriple Rural Electric Cooperative Corporation, which received a \$3 million Energy Efficiency/Renewable Energy grant from the State of Kentucky.

Fort Campbell received an additional \$800,000 grant through the Department of Energy's Federal Emergency Management Program to fund Phase 2 of the solar array project, which is tied to a 27-year Power Purchase Agreement (PPA) for a 3.1 MW array to be executed through the U.S. Army Corps of Engineers Engineering and Support Center, Huntsville's renewable energy Multiple Award Task Order Contract small business solar pool.

At the end of July, Huntsville Center in cooperation with the U.S. Army Garrison - Fort Campbell issued a notice of intent to award to BITHENERGY Inc. for the PPA. The notice of intent to award does not constitute a formal contract award, but it is a major milestone that brings Fort Campbell closer to a contract award and groundbreaking. In the coming months, Baltimore-based BITHENERGY and the Army project team will work to finalize the technical and legal requirements of the project.

This is the first time Huntsville Center's Energy Division has used two third-party financing contract vehicles together (PPA and UESC) for a renewable energy project.

"We are excited about this opportunity to demonstrate how our programs can work together to help installations achieve their renewable energy objectives," said Sharon Gresham, PPA program manager with the Huntsville Center, which is providing project management oversight in coordination with the Fort Campbell Directorate of Public Works and Louisville District Army Corps of Engineers Real Estate Division.

Once fully operational — expected in mid-2016 —



Jim Duttweiler, Directorate of Public Works (DPW), Sandy Grogan, Pennyriple Rural Electric Cooperative, John Davies, Kentucky Department for Energy Development and Independence, and Rick McCoy, DPW, join Garrison Commander Col. James "Rob" Salome and Maj. Gen. Gary J. Volesky, 101st Airborne Division and Fort Campbell commander, for the ribbon-cutting for Phase One of the installation's solar array Sept. 21. (Photo by Megan Locke Simpson, Fort Campbell)

the solar array will produce 5MW of energy, or enough to power 463 homes. Preparation to install a solar array began in 2012 when Fort Campbell established a renewable energy plan. This addition of renewable energy sources will lessen Fort Campbell's reliance on coal-powered energy provided by the Tennessee Valley Authority.

"Now this is truly a significant milestone as we move toward achieving that and implementing a total renewable energy plan," said Garrison Commander Col. James "Rob" Salome at the ribbon cutting. "But it's not just about making power. It's about making a difference that will be felt for many years. In addition to this being a renewable energy source, this project will save about 4.7 million tons of carbon dioxide emissions annually."

This change signals a positive impact in the years to come for the environment and future generations, said Garrison Energy Manager Rick McCoy.

The resulting energy will be used solely at Fort Campbell, according to McCoy. Fort Campbell's plan is to operate the solar array continually for three weeks starting Sept. 18, when it officially went "on the grid," so the Directorate of Public Works could see it in action.

"We're thinking past this," McCoy said. "We've got actually more landfill on the other side of those trees.

A footprint big enough to probably put another 3 to 5 megawatts. We're not going to limit ourselves. We'll see how this works."

Even with cloudy skies on [Sept. 18] the solar array still generated some 1.5 megawatts of power, McCoy said. "Right now, it's great. We're making energy at the time of the day when we need it the most."

Fort Campbell identified 25 acres of land formerly used as a landfill for the PPA solar photovoltaic array project. The contractor will finance, design, build, operate, own and maintain the renewable energy generation facility on the identified land leased from Fort Campbell. Through the PPA, the Army will purchase the on-site generated renewable electricity for up to 27 years in accordance with the terms and conditions stipulated in the resulting contract. Renewable energy produced on

Army installations increases energy security, enhances mission effectiveness and provides a means to temper rising energy costs.

"The construction of this solar array is a cooperative effort, and it presents a great example of intergovernmental and interagency cooperation in partnering together to achieve greater energy efficiencies for our future," Salome said. "This project is yet another example of progress and gaining efficiency through renewable energy. We're thrilled to have the amazing support of our partners to make the solar array possible."

Phase Two, which will be located in the same general area as the first, is scheduled to begin in April 2016. McCoy said future plans call for another 5MW solar array on the Tennessee side of Fort Campbell.

McCoy said the solar power is one of the most cost-effective ways to bring renewable energy options to Fort Campbell. Options such as hydro and wind, are not as feasible there. Other possibilities include biogenic shale gas, biomass and waste energy.

Editor's Note: This article is a compilation of Fort Campbell and Huntsville Center press releases and Fort Campbell Courier articles by Megan Locke Simpson. ☺

Power Purchase Agreements (PPA)
Huntsville Center's PPA Program develops and provides life cycle project management for large (10MW or greater) and small scale (less than 10MW) renewable energy projects that leverage private sector (third party) finance. The PPA Program provides a Multiple Award Task Order Contract (MATOC) vehicle for the long-term purchase of energy from renewable alternative energy production facilities that private sector corporations design, finance, construct, operate and maintain on or near Department of Defense installations. The installation then purchases power from these facilities without acquiring any power generation assets, facilities or services costs.

Utility Energy Services Contracting (UESC)
The UESC Program negotiates contracts with local electric, gas and water utility companies that enable the utility companies to provide federal agency customers with comprehensive energy and water efficiency improvements and demand reduction services. UESC projects can encompass a broad range of energy conservation measures (ECMs), including system upgrades and recommissioning, deep retrofit projects, renewable energy, cogeneration plants and microgrids. A UESC contract is a method whereby a selected local electric, gas or water utility company assesses the energy savings opportunities, fronts the capital costs, and designs and installs the equipment in the project. When project financing is required, the utility company is paid from the resulting savings. Project development and implementation costs can be fully or partially financed or be completely paid for upon project acceptance.

Energy Savings Performance Contract (ESPC)
A ESPC is a partnership between the Army and an Energy Service Contractor (ESCO). Working with an installation garrison, the ESCO provides the capital and expertise to make comprehensive energy and water efficiency improvements on facilities or implements new renewable energy capabilities and maintains them in exchange for a portion of the generated savings.

Learn more at <http://1.usa.gov/1LZCbNH>.

Sustainability Awards

Continued from Page 1

viewed by other services, federal agencies and industry as the way forward for success in meeting the federal and Department of Defense energy and water reduction, renewable energy and Net Zero mandates.

Green Innovation

Phillip Cohen, chief of Europe District's planning section, and Rich Gifaldi, the district's Sustainable Engineering Program manager, combined efforts to form the Europe District Net Zero Installation Planning team that developed a cutting edge holistic approach to Net Zero Installation Planning, which is transferrable to DOD installations worldwide. The approach combines two offices within the district, Master Planning and Engineering, to create a strategic road map other installations can use to plan and track their progress toward Net Zero, resulting in saving energy and water in building and using smart land development.

The combined approach identified energy conservation opportunities, renewable energy practices and sought to increase public energy awareness. The efforts of these two innovative and creative strategists provided a fresh approach toward the efforts of water and waste goals. Their partnership efforts made a significant impact and positive improvements for customers in Europe.

Good Neighbor

A new solar and wind power plant on tribal lands that will provide sustainable energy for both the Corps of Engineers San Francisco District and the Dry Creek Rancheria Band of Pomo Indians is being developed by the two entities. The Pomo Indians will install the plant at their cost and then sell green power to the San Francisco District for use at the Lake Sonoma fish hatchery as well as a visitor center and other nearby buildings. The joint projects were developed through the relationships built by Mike Dillabough, San Francisco District's chief of operations, and Harvey Hopkins, the chairman of the Dry Creek Rancheria Band of Pomo Indians.

In November 2014 the two entities signed a 25-year agreement to develop and operate a sustainable renewable energy production plant. The solar project will help bring the Corps of Engineers closer to meeting

the Army's goal of deriving 25 percent of its energy from renewable sources by 2025. The combined effort shows an "exemplary cooperation" between a federal agency and a local community on energy conservation. This project serves as an ideal partnership goal, which all Army Corps of Engineers partnership efforts should aim to emulate.

Lean, Clean and Green

Detroit District's deputy commander and logistics staff strived to find the best and brightest team members to develop a program to encourage the district's workforce to use flex fuel in its flex fuel General Services Administration (GSA) vehicle fleet.

The missions included reducing gasoline consumption by 30 percent, while also increasing GSA fleet use to save on temporary duty costs. The team members sought to educate operators on fuel use by providing fuel maps and logbooks to help them closely monitor their flex fuel usage.

Their hard work paid off. The Detroit District went from using 2 percent usage of E-85 in its flex fuel fleet to E-85 usage of more than 71 percent within the first eight months of implementing the education efforts. In addition, the demand for gasoline decreased from 40,000 gallons in fiscal year 2013 to a little more than 32,000 gallons in 2014, a 20 percent reduction while still executing the same mission. The Detroit District team continues to remind workers that a cleaner and safer environment is needed, especially when it comes to reducing carbon in our atmosphere.

Building the Future

Sacramento District was commissioned to do a job that involved love for sustainability practices as well as a love for the natural environment. The Defense Language Institute at the Presidio of Monterey, California, asked the district for a modern instruction building to not only improve its campus but also be environmentally friendly.

Sacramento District's list of improvements to make the campus more



Green Innovation Award winners Rich Gifaldi, the district's sustainable engineering manager, and Phil Cohen, former district Planning Section chief, developed a holistic approach to Net Zero installation planning that is transferable to DOD installations worldwide. The approach creates a strategic road map for installations to plan and track their progress toward net zero. (Courtesy photo)

environmentally practical included using natural light, recycled rainwater for toilets and modern sustainable practices. The team created a safe, sustainable and simple new building for students, which serves as an "optimum learning environment" for creativity. The building was constructed to meet LEED Silver certification. The collaboration and tireless efforts of the Sacramento District created a top-notch, environmentally friendly building that can help enhance the learning of the students at the Defense Language Institute and will help the Presidio meet its goal of being Net Zero energy by 2030. ☺



The Corps

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