



The Corps

# Environment

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## Corps of Engineers teams earn GreenGov awards

By **Candy Walters**

*Headquarters U.S. Army Corps of Engineers*

**T**wo U.S. Army Corps of Engineers joint teams recently received 2016 GreenGov Presidential Awards for their contributions in making the federal government more sustainable.

The White House Council on Environmental Quality presented 12 GreenGov awards during a Sept. 7 ceremony at the Eisenhower Executive Office Building to federal agency teams and individuals who fulfill President Obama's mandate to "lead by example" in implementing Executive Order 13693: Planning for Federal Sustainability in the Next Decade.



*Receiving the Green Innovation GreenGov Award on Sept. 7 were employees from the U.S. Army Corps of Engineers Fort Worth District, U.S. Army Engineer Research and Development Center Construction Engineer Research Laboratory and Headquarters Corps of Engineers along with senior leadership from the Department of Defense, Army and U.S. Army Corps of Engineers. The award was presented for the work the joint team did in combining two tools, the Net Zero Planner and the Comprehensive Asset Master Planning Solution Dashboard, into one tool that identifies sustainability and energy implications in military installation planning and automates identification of energy efficiency measures. (Photos by Lt. Col. Patrick Dagan)*

The two 2016 awards, the Green Innovation and Building the Future, marked the fifth and sixth GreenGov awards Army Corps of Engineers teams and individuals have received in the past four years. The award winners were previously chosen to receive a 2016 USACE Sustainability Award.

"It was an honor to participate in this important event to recognize the outstanding efforts of DOD personnel that both preserve environmental resources for future generations, and ensure that DOD has the land, water and airspace needed to sustain military resources," said Maureen Sullivan, deputy assistant secretary of Defense for environment, safety and occupational health.

"I am proud of this year's winners – they represent excellence and a tremendous dedication to the nation and its resources," she said.

For Assistant Secretary of the Army (Civil Works) Jo-Ellen Darcy, the ceremony marked the fourth year she has joined Corps of Engineers winners on the GreenGov Awards stage. "This is a chance to show the innovative work that the Corps of Engineers does on the ground and delivers every day," she said.

"We have exceeded our Energy Savings Performance Contract goals (executing nearly \$16 million, \$3.4 million more than the goal of \$12.6 million), and our districts continue to look for more innovative opportunities," Darcy added.

The Green Innovation Award was presented to a joint Corps of Engineers team from Fort Worth District, the U.S. Army Engineer Research and Development Center Construction Engineering Research Laboratory and Headquarters Corps of Engineers. The team combined the Net Zero Planner and Comprehensive Asset Master Planning Solution (CAMPS) Dashboard tools into a Combined Tool that has revolutionized the way planners and installation managers look at sustainability planning by allowing them to identify sustainability and energy implications and automate identification of energy efficiency measures. The final result of using the tool is the generation of a targeted list of energy projects that meet an installation's energy goals, leading to reducing costs and time for energy planning. The team successfully demonstrated the Combined Tool at Fort Hood, Texas, and Joint Base Pearl Harbor-Hickam's Ford Island, Hawaii, under a Department of Defense grant.

Receiving the award were Rumanda Young and Susan Wolters of Fort Worth District, Michael Case and Richard Liesen of the Construction Engineering Research Laboratory, and Jerry Zekert of Headquarters.

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*Aerial view of the solar photovoltaic array at White Sands Missile Range, New Mexico. The panels cover 42 acres and provide more than 4 megawatts of electricity to the base. (Courtesy photo)*

## Huntsville Center helps Army surpass \$1 billion performance contracting milestone

By **Debra Valine**

*U.S. Army Corps of Engineers, Engineering and Support Center, Huntsville*

**W**hen the Army Materiel Command's Anniston Army Depot in Alabama signed a \$20 million Utility Energy Services Contract with Alabama Power Aug. 11, the Army surpassed a presidential challenge to award \$1 billion in Energy Savings Performance Contracts by the end of 2016.

This contract will enhance the Army's readiness efforts by allowing Anniston to run more effective and efficient daily operations.

The President's Performance Contracting Challenge set the goal of \$4 billion in ESPCs and UESCs across the federal government. The Army's share of that goal was \$1 billion.

In response to the PPCC, the Army has contracted for 127 individual projects, or task orders, totaling \$1.015 billion. This represents 33 percent of the federal government's total performance and 68 percent of the Department of Defense's total efforts.

While the Anniston Army Depot contract was not awarded by the U.S. Army Corps of Engineers, Engineering and Support Center, Huntsville, Huntsville Center's Energy Division was instrumental in helping the Army reach the PPCC milestone. Huntsville Center's cumulative ESPC and UESC

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For U.S. Army Corps of Engineers, Albuquerque District regulators, knowing a grass from a sedge is not just a trivial pursuit question. Jurisdictional wetlands are determined in part by what plants are present. In order to protect and restore, it's important to know what's there. Thus, being able to correctly identify wetland plants is critical in making wetland decisions. As part of an ongoing series of collaborated training, the Albuquerque District reached out to other interested state and federal agencies such as the New Mexico Department of Transportation, the New Mexico Environment Department, and the Bureau of Reclamation. Above, one of the class participants puts the training into practice, working on identifying a particular plant, Aug. 17. (Photo by Marcy Leavitt)

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## The Corps Environment

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# October Commentary: 'In Our Lifetime'

By Karen Baker

Chief, Environmental Division

SMART metrics have been used to plan, build and deliver nearly every type of project, from small scale to large, billion-dollar data centers and labs. For those who abide by the SMART method of planning, the "T" – time – is one of the most important aspects and means staying on schedule and meeting major milestones. Without attaching a timeframe to how we do business, we'd have milestones that are Specific, Measurable, Achievable, Timely and Relevant, but may never get done on time (if at all). Simply put, schedules are critical to project planning and execution. Lt. Gen. Todd Semonite, commanding general of the U.S. Army Corps of Engineers, has charged us all to deliver our programs, and staying on schedule is a key component to delivering on our commitments to our stakeholders.

In the environmental community, we are putting special emphasis on the "T." In August, I had the opportunity to join more than 150 representatives from the Department of Defense, USACE headquarters, divisions and districts, state and territory regulators, and federal partners at the 2016 National Formerly Used Defense Sites Forum hosted by DOD. I was joined by Maureen Sullivan, deputy assistant secretary of defense for environment, safety and occupational health, and Eugene Collins, deputy assistant secretary of the Army for environment, safety and occupational health, and together we announced a new vision for FUDS – "Response Complete in Our Lifetime."

This vision reminds us that we have committed to a goal of 90 percent response complete by 2018 and 95 percent complete by 2020. When the FUDS program began more than 30 years ago, 2018 seemed so far away, and it seemed like an impossible mission. Yet, we are closing in at nearly 80 percent response complete at this time.

Still, we know the most challenging and complex sites still remain to be addressed. Accomplishing this mission in a fiscally restrained economic climate will require a comprehensive approach that must leverage innovative technology, strategic partnerships, collaboration, transparency and a commitment to our stakeholders and regulatory community to deliver on time. We have adopted a new set of FUDS Guiding Principles that are helping us focus on bringing us over the finish line. They are as follows:

**1. Goal Focused:** Focus our efforts on leveraging annual funding toward achieving DOD Installation Restoration Program goals of 90 percent response complete by the end

of FY18 and 95 percent response complete by the end of FY21.

**2. Creativity:** Pursue progressive acquisition strategies to address multiple FUDS projects and phases under coordinated procurements that are based on well-defined and achievable objectives.

**3. Innovation:** Effectively assess and implement advanced geophysical classification at all phases of the Comprehensive Environmental Response, Compensation and Liability Act at FUDS Military Munitions Response Program projects to reduce both time and costs for munitions cleanup.

**4. Fiscal Responsibility:** Plan, resource and execute FUDS projects based on a commitment to complete the Remedial Investigation/Feasibility Study phase of work to within four to five years of initiation.

**5. Commitment to Excellence:** Maximize the assignment of qualified, trained and experienced FUDS project management, technical and support staff to serve on high performing virtual project delivery teams that cross traditional boundaries.

**6. Continuous Improvement:** Integrate innovative technology and optimization processes to reduce time and costs to achieve response complete for ongoing FUDS projects with remedial action-construction and remedial action-operation phases with durations greater than five years.

**7. Collaboration:** Elevate regulatory and stakeholder disagreements and delays quickly up the chain of command to resolve through tiered partnering or to support timely decision making to implement response actions under our Defense Environmental Restoration Program authorities even when regulatory or stakeholder concurrence cannot be achieved.

**8. Transparency:** Share information and findings with our regulators, stakeholders and public, and support

collaborative engagements that address issues and uncertainties as part of the decision-making process.

Within my Headquarters team, and among the divisions and districts supporting our military programs environmental work, we recognize we can also achieve many of our other installation remediation goals "in our lifetime," as we continue to draw down the list of sites on active installations and return acres of land back into use for training or other military activities. We have recently



Karen Baker

awarded one of our last large Base Realignment and Closure (BRAC) cleanup contracts at Fort Wingate Depot Activity, New Mexico.

We continue to deliver on our commitment to the military and the nation to ensure that we have fully addressed the risk at these sites. Work continues at our Formerly Utilized Sites Remedial Action Program and in our support to the Environmental Protection Agency's Superfund Program. We know we are not close to working ourselves out of a job completely any time in the near future.

Beyond cleanup, our military partners and installations are faced with enormous challenges. In a time of constrained resources, environmental regulations continue to increase and new advisories and standards for several key chemicals have caused installations to review their operations. The phone continues to ring for USACE technical assistance in ways we have not always thought of under our traditional mission areas. Just a few examples include helping our Air Force and Army partners perform sampling for perflourinated compounds used in firefighting operations in response to a new EPA health advisory, deploying environmental specialists to find wastewater treatment solutions in the U.S. support to the Ebola crises in Liberia, and applying "green energy" practices to our remediation projects.

To the Environmental Community of Practice at-large "In Our Lifetime" has a much deeper and complex meaning. We have more than 4,000 environmental specialists across the organization serving in military programs, civil works, and research and development. Within our community, despite its breadth and diversity of mission areas and technical disciplines, we have always performed two key functions. The first is to restore and repair the environmental impacts of past activities, whether that is cleanup at a FUDS site or restoration of aquatic ecosystems. The second is to "hold the environmental line," which means both assisting our military installations maintain air and water quality standards and comply with regulations, as well as our civil works regulatory functions.

Now a third mission area is emerging that may very well be the challenge of our lifetime. This challenge is how to apply our environmental expertise to support efforts to mitigate greenhouse gas emissions and adapt to our changing climate, and build resilience to uncertain threats into our projects.

So, how do we meet this challenge "in our lifetime"? The answer to this question can seem daunting to those in the Environmental Community of Practice, who don't actually "own" the operations or activities that impact our changing climate. As the senior executive in USACE charged with leading our sustainability scorecard initiatives in support of Executive Order (EO) 13693, "Planning for Federal Sustainability in the Next Decade," I completely understand the dilemma. While my team is responsible for tracking our performance on the scorecard, I do not have responsibility for any of the mission lines on which we report. I'm grateful to have a great team of people in operations and regulatory, logistics, engineering and construction, and contracting who are working collaboratively to drive performance in sustainability. Together we have made amazing progress since FY 2011 when we were red (failing) on all aspects

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# ENVIROPOINTS



## EnviroPoints . . . . .

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of our scorecard to FY 2015 where we just recently received green ratings, indicating we have met our targets, in reducing our scope 3 greenhouse gas emissions, use of renewables and reduction in fleet petroleum use. We also met our President's Presidential Performance Contracting Challenge.

Lt. Gen. Semonite recently renewed USACE's commitment to incorporating environmental consideration into all our mission areas, by re-issuing the Environmental Operating Principles, which have been in effect since 2002. Upon signing the EOPs, Semonite remarked, "Our Corps is a leader in environmental issues, but we can't rest on our laurels. Help us put these principles into action and continue to set a 'world-class' standard." We have come so far, but we have much work still to do.

Lt. Gen. Semonite also remarked that these principles "are not just for our Environmental / Regulatory teammates, they apply to ALL of us – and they guide us to accomplish our public service mission in a noble and sustainable way."

Under Lt. Gen. Semonite's leadership, we are also revising our USACE Campaign Plan, and within Objective 1c, we have an action that addresses how we plan to do that. Action 1c2 – "Integrate Sustainability and the EOPs into all USACE Missions, Activities and Actions" sets forth how we will demonstrate the use of sustainability values, tenets and principles by employing processes and procedures in all USACE operations.

As our agency continues to evolve, and the economic climate continues to provide uncertainty, I believe we have an incredible opportunity ahead to begin to change the culture with our directorates, divisions, labs and districts. I have confidence in our environmental experts to lead the charge and help to enable the mission. Recently, the other four executives and I who serve as the charter committee for the Environmental Community of Practice resigned our charter, signaling our continued commitment to ensuring we lead USACE in upholding the EOPs, promote technical competency within our community, and leverage opportunities to share knowledge and expertise across the multiple functions that comprise the community of practice. We have a series of initiatives planned that will help us to strategically tell our story across the USACE enterprise, allow more of our 4,000 environmental specialists to take critically needed professional training, and promote further collaboration among our mission areas.

Despite the challenges ahead, I can't tell you how excited I am about our future. Our world is changing, our environment is changing and so is USACE. I am thrilled to stand by your side as we work to build a healthier, safer and more sustainable future In Our Lifetime and beyond. ☺

# Detroit District's Cat Island project shows early signs of success

**By 1st Lt. Erica Mitchell**  
*U.S. Army Corps of Engineers, Detroit District*

The Detroit District's dredge material disposal facility on Cat Island, Green Bay, Wisconsin, is proving to be an environmental success as wildlife begins to return to the area.

Since 2014, just one year into the project, more than 385,000 cubic yards of clean dredge material from the Green Bay Harbor (outer) has been placed on Cat Island in an effort to restore terrestrial habitat and wetland in the former Pete lake Marsh area.

According to Wisconsin Fish and Wildlife Service's biologist, Betsy Galbraith, because of the placed material, some habitats have already been restored for fish and wildlife. More than 30 species of Great Lakes shorebirds have been spotted around Cat Island to include: state threatened and endangered birds such as the piping plover and several species of terns. Federally threatened and endangered species have also been seen to include: the rufa red knot and whooping crane.

"The fact that we are just at the beginning of this restoration project and wildlife are already returning to use this area is a great sign," said Josh Martinez, a Wisconsin Department of Natural Resources (DNR), Green Bay-based wildlife biologist working on the restoration project. "We're happy to be part of this partnership and know there will be many more great wildlife successes to come."

One of Cat Islands' greatest successes, this past summer, was the nesting of the piping plover

for the first time in 75 years. Since being listed as endangered in 1986, conservationists have worked tirelessly to save this bird.

"Piping plovers are the most endangered species in the Great Lakes," said Charlie Wooley, U.S. Fish and Wildlife Service Midwest deputy regional director. "It's been an honor in my career to see this remarkable bird come back from the brink of extinction. It reflects the hard work of many and is just another example of successful fish and wildlife restoration efforts across the Great Lakes."

Jon Imbrunone, project manager for the U.S. Army Corps of Engineers, Detroit District, said, "Continuous

coordination and communication with the Cat Island Advisory Committee, Wisconsin DNR and the U.S. Fish and Wildlife Service have been key in every aspect of this project to include the success of the piping plover."

"The Service and the Corps worked closely this season to protect the nesting plovers. Our shared goals contributed to three chicks successfully fledging from the nest. This is significant when you consider there were only 75 nests in the Great Lakes this summer" Galbraith said.

The Corps plans to dredge the Outer Green Bay Harbor and place approximately 400,000 cubic yards of clean material onto Cat Island by the

end of December.

"It is amazing to see the benefits of this project come to life, I am proud of our partnerships and team who have made this possible and look forward to the future of Cat Island for many years as this project continues," said Lt. Col. Dennis Sugrue, district engineer, U.S. Army Corps of Engineers, Detroit District.

Dissipated in the 1960s, Cat Island consisted of three islands located west of the mouth of the Fox River in Green Bay. Cat Island reconstruction will restore and protect 274 acres of terrestrial habitat and 1,400 acres of wetland. ☺



*Left: Aerial photo of Cat Island after first year of clean dredge material was placed on the West Island. Photo courtesy of U.S. Army Corps of Engineers, Detroit District.*

*Below: Male piping plover nesting with chick fledged this summer at Cat Island. Photo courtesy of Tom Prestby*





# Fight the Bite: Fort Buchanan works to control mosquitoes

By Jonelle Kimbrough

Army Reserve Sustainability Programs

**D**o you know *Aedes aegypti* and *Aedes albopictus*? The Directorate of Public Works (DPW) at Fort Buchanan, Puerto Rico, knows these fellows all too well. They are not colleagues or Soldiers or even characters in the community. They are mosquitoes, and according to the Centers for Disease Control and Prevention (CDC), they are responsible for the illnesses that are creating major public health concerns in the Caribbean islands, Central America and South America.

With its bounty of natural beauty and its rich heritage, Puerto Rico is an idyllic paradise, but the concentrated population and lush environment on the island also create a “perfect storm” for the proliferation of the Yellow Fever mosquito and Asian Tiger mosquito, which are aggressive biters and the primary carriers of Dengue Fever, Chikungunya virus and Zika virus. Per the 2015 Census, the island boasts over 3 million residents – 1 million of whom live in the San Juan area. In addition, Puerto Rico has a sub-tropical climate with an average temperature of 80 degrees and copious rainfall. According to Victor Rodriguez-Cruz, an

environmental protection specialist at Fort Buchanan, the *Aedes* mosquitoes have a preference for habitats around urban settings, which tend to have many standing pools of water for breeding. “[The climate] provides adequate conditions for mosquitoes to breed, and with our high population density, there is a potential risk of mosquitoes transmitting a variety of arthropod-borne viruses,” he said.

While all mosquito-borne illnesses are dangers to public health, Zika virus is a particularly dire issue. Dengue Fever and Chikungunya virus present symptoms that include fever, headache, muscle ache and joint pain. Although similar to those of Dengue Fever and Chikungunya virus, the symptoms of Zika virus are much milder in and sometimes completely absent from afflicted individuals.

Yet, once contracted, Zika can be equally as harmful. Zika virus can also cause neurological disorders such as Guillain-Barre Syndrome and a brain-damaging birth defect called microcephaly, which is a life-long and incurable condition that can often remain undetected until an infected child is born. Furthermore, Zika is blood borne and can be transmitted from human to human through sexual contact, blood transfusions and in-utero transmission.

The CDC estimates that the Zika virus now affects an estimated 1 million people in South and Central America, Mexico and the Caribbean islands, and the illness is spreading rapidly – even into the United States.

Fort Buchanan is leading the charge against mosquitoes and mosquito-borne diseases in Puerto Rico. “It is important for the installation to protect the community by proactively controlling mosquito populations,” Rodriguez-Cruz said. “Our vector management program is directed towards maintaining mission readiness by protecting the well-being of our Soldiers, their Families and the Civilians who support them.”

In collaboration with Army Public Health Command through Rodriguez Army Health Clinic, Fort Buchanan’s Installation Integrated Pest Management Program has developed a tiered program to control the mosquito population and reduce the spread of Zika. They are using traps to capture and monitor mosquitoes on the installation, and they are implementing mosquito breeding area surveillance to determine the origins of the populations and remove their habitats. When mosquito populations are discovered, larvae are removed in some cases. In cases where source reduction is not feasible, though, ultra-low-volume pesticides are applied. Additionally, Fort Buchanan is partnering with federal and state health departments to share

## PREVENTING MOSQUITO-BORNE ILLNESSES

- ◆ Remove any containers with standing water from your Army Reserve facility or personal property. Standing water is the primary breeding habitat for mosquitoes.
- ◆ Clean and refresh pet water dishes, watering troughs and birdbaths at least once each week.
- ◆ Cover outdoor pools and spas when they are not used, and ensure that they are properly chlorinated.
- ◆ Clear rain gutters and roofs of debris and standing water.
- ◆ Install mosquito-repellant plants such as citronella, mint, marigold and catnip in your garden.
- ◆ Stay inside when mosquitoes are active.
- ◆ Close doors and windows. Use air conditioning to cool your facility.
- ◆ When you are outside, use oscillating fans to deter mosquitoes.
- ◆ Use a mosquito repellent that has been registered by the United States Environmental Protection Agency. Ingredients such as DEET and picaridin are considered to be safe and effective when used as directed.
- ◆ Wear long sleeves and pants when feasible.
- ◆ Monitor your health. If you notice any symptoms of Dengue Fever, Chikungunya virus or Zika virus, seek medical assistance.

their epidemiological and ecological information.

“This tiered approach permits us to attack the mosquito population throughout all stages of the insect’s life cycle: egg, larvae, pupae and adult,” Rodriguez-Cruz said. “This approach implements Integrated Pest Management practices that rely on the judicious use of both chemical and non-chemical treatments to prevent and control mosquitoes. This methodology minimizes potential environmental impacts and prevents pollution by reducing sole reliance on pesticides. Also, surveillance of mosquito populations helps determine the need for control and helps us to monitor the effectiveness of the program.”



Asian Tiger mosquito transmits the Zika virus.



# GreenGov Awards

Continued from Page 1

The Building the Future Award went to a team from Omaha District and Fort Carson, Colorado, for the 13<sup>th</sup> Combat Aviation Brigade Aviation Support Battalion Hangar at Fort Carson, which earned the Army's first Net Zero, Leadership in Energy and Environmental Design Platinum certification for a hangar, producing less waste, generating less pollution, using less water, and putting energy back into the grid.

Fort Carson has a legacy of more than 56 LEED-certified projects, including more than 82 certified buildings, half of them at the LEED Gold level, and, including the hangar, three at the Platinum level.

Receiving the award were James Harding, Vince Turner, John Offen and Robert Collupy of Omaha District and Hal Alguire of Fort Carson.

In introducing the Building the Future Award, Assistant Secretary of the Army for Installations, Energy and Environment Katherine Hammack noted that the team working on the hangar not only reduced the environmental footprint, used renewable energy, enhanced energy security, achieved Net Zero and LEED Platinum, but "came in under budget. It was a win-win for all," she said.

"I'm always impressed with what the Army Corps of Engineers does when it comes to finding innovative and better ways of doing this," she said.

Maj. Gen. Mark Yenter, Corps of Engineers deputy commanding general for military and international operations, said he was impressed with the level of tenacity both teams displayed, having to overcome obstacles on many levels, including policy, technology and financial limitations among others. "I'm absolutely impressed that they were able to stay on task," he said. "It's phenomenal. I'm proud to be an engineer."

Previous Corps of Engineers GreenGov Award winners include:

Jeanette Fiess of Northwestern Division — Sustainability Hero 2013

Kathleen White and Mark Huber, of the Institute for Water Resources and Army Geospatial Center, respectively, who were part of an interagency team that won the Climate Champion award in 2013 for a Sandy Sea Level Rise Tool used in New York and New Jersey as part of the rebuilding efforts after Hurricane Sandy.

William Goran, formerly of the U.S. Army Engineer Research and Development Center Construction Engineering Research Laboratory and director of the Center of Advancement of Sustainability Innovations — Climate Champion 2014

Detroit District for its Flex Fuel Program encouraging its workforce to use E-85 fuel in its fleet vehicles — the Lean, Clean and Green Award 2015



Receiving the Building the Future GreenGov Award on Sept. 7 were employees from the U.S. Army Corps of Engineers Omaha District and the Directorate of Public Works at Fort Carson, Colorado, along with senior leadership from the Department of Defense, Army and U.S. Army Corps of Engineers. The award was presented for the work done at the 13<sup>th</sup> Combat Aviation Brigade Aviation Support Battalion Hangar, Fort Carson, Colorado, the first LEED Platinum and Net Zero hangar in the Army.

## Huntsville programs team up to ensure power for chemical demilitarization operations in Pueblo

By Debra Valine

U.S. Army Corps of Engineers,  
Engineering and Support Center, Huntsville

In 2003, when the Chemical Demilitarization Program at the U.S. Army Engineering and Support Center, Huntsville, started a project to build the Pueblo Chemical Agent Destruction Pilot Plant (PCAPP) in Colorado, safe and secure storage of the chemical munitions was the remaining mission on the Pueblo Chemical Depot. Now, after years of design, construction and systemization, the plant started operations in September.

A power reliability risk assessment review by Huntsville Center's Engineering Directorate in 2013 showed that if the depot's cantonment area mission support and the PCAPP chemical demilitarization facility complex both were operating at full power demand, their collective electricity needs would exceed the capacity of the existing power system, said Steve Light, the Huntsville Center program manager for the Program Executive Office, Assembled Chemical Weapons Alternatives (PEO ACWA). A minimum of 10 MVA (mega volt amps) additional power capacity was needed to meet the mission needs of the PCAPP project and allow for some future growth.

"With the need established, we explored several alternatives," Light said. "One, we went back to Omaha District. Working through Omaha would require a lengthy acquisition strategy; we were looking at a year's worth of time to get that done before we could get the design and installation underway.

"We then looked at in-house alternatives within Huntsville Center's contract capabilities," Light said. "We looked at Facilities Repair and Renewal to see if they could award construction of a power system. Another program within the Installation Support and Programs Management Directorate — one that deals with power all the time — was the Utility Energy Services Contracting Program. UESC offered some obvious alternatives to provide design and installation of a substation. After considering all the viable options, UESC was selected as the delivery mechanism."

"Chem Demil came to us and asked us to install a substation at the Pueblo Chemical Agent Destruction Pilot Plant in Colorado to take the load off the existing substation," said Lisa Harris, the Huntsville Center's UESC program manager. "We used an existing General Services Administration areawide utility contract to award the project to Black Hills Energy in March."

BHE, the energy service provider, installed a 20MVA 115 kilovolt (kV) substation adjacent to the PCAPP existing substation, Harris said. The new (third) substation is segregated from the existing 20 MVA PCAPP substation to demark the difference in ownership. The Army will own, operate and maintain the new substation that will include a new independent switchgear/control house. Two of the existing 13.8 kV feeders originating from the existing control house will be intercepted and rerouted to the new substation control house in order for the depot power to be separated from the PCAPP power.

"Installation required a lot of coordination," Harris said. "We had to execute critically timed power outages and coordinate outages with the installation and the PCAAP contractor, Bechtel, to assure no mission impacts. We had to have a backup generator in place to ensure 100 percent operational capability."

Due to the nature of the electrical work, extensive Huntsville Center Safety Office work was done by Will Eggleston, safety engineer, to coordinate electrical outage procedures and safety measures.

"During the UESC project installation, Chem Demil and BHE team members called upon Sebesta Inc. for design, Hooper Corporation for installation, Electrical Power Systems for integrated system testing and Energy Systems Group (ESG) for project integration and management," Light said. "Billy Swinnea, ESG's onsite project manager, did an extraordinary job to ensure everything was installed correctly and safely and ensure no mission upsets. Dave Micklewright, representing USACE's Omaha District, was the government's onsite quality assurance manager.

"This high-performance team collectively contributed toward a very successful project," Light said. "Because of this team's effort, we were able to deliver power requirements on time to assure mission execution of weapons destruction for PEO ACWA."



## Environmental Quality

# Louisville lends hand to Reserve's 88th Regional Support Command

By Katie Newton

U.S. Army Corps of Engineers, Louisville District

As part of the environmental quality program, the U.S. Army Corps of Engineers Louisville District performs an array of environmental services for the U.S. Army Reserve 88th Regional Support Command (RSC), from ensuring reservists have safe drinking water to performing prescribed burns for invasive species control.

While the Louisville District supports all of the U.S. Army Reserve regional commands with environmental services, this year the 88th RSC, which makes up a 19-state area from the Midwest to the Northwest coast, is the biggest customer with 14 projects on the docket.

"A vast majority of the 88th RSC Environmental Division's work goes to the Louisville District as the environmental service program managers are very diligent

and responsive, not only in the execution of the work but to any questions or concerns we have," said Melani Tescher, chief, Department of Public Works Environmental Division, 88th RSC.

The district provides support services and contract management for a multitude of environmental service projects including Safe Drinking Water Act surveys, air mission surveys, invasive species control, natural resource management plans including forest management, indoor firing range cleanups, National Environmental Policy Act (NEPA) support, radiological surveys, radon mitigation, storm-water pollution/prevention plans and preparing environmental condition of property reports.

"We're happy that the 88th continues to choose us as their preferred mechanism for environmental services," said Craig Coombs, Louisville District environmental engineer. "We've been cultivating this relationship

since 2006, and they're great customers."

Recently, the Louisville District completed asbestos surveys at 14 U.S. Army Reserve Centers within the command. The contractor conducted visual inspections throughout the facilities, collected samples and prepared a report for the 88th with their findings.

"The survey's intent is to identify asbestos-containing materials at the Reserve Centers," Coombs said. "To protect the workers, the 88th then decides whether to abate or manage in place."

USACE also conducts drinking water surveys for the Reserve under the Safe Drinking Water Act. Surveys have been completed at 15 facilities in Wisconsin and Minnesota with two more facilities scheduled.

The contractor selects two locations at each facility — the closest and the farthest from the tap — and sends off samples to be used for comparison to drinking water standards.

"If there are any exceedances, we make recommendations for the 88th to implement," Coombs said. "We're ensuring our Reserve Soldiers have a safe source of drinking water when they're in their facilities."

Another environmental service USACE provides is cleaning up lead dust from historical indoor firing ranges in many Reserve Centers nationwide. The process is simple, but necessary: wash it, vacuum it, put a sealer on it and test it again for any contaminants/lead particles. "By doing so, it maximizes the Army Reserve's useable space by reusing the area as office space or storage," Coombs said.

USACE also prepares Forest Management Plans that maintain a diverse and healthy ecosystem while supporting mission requirements. "This entails taking inventory of forests on site and making recommendations for managing them," Coombs said. "Sometimes it's harvesting, sometime it's leave it be, or maybe even a controlled burn is necessary."

Controlled burns, which are used for invasive species control, help maintain healthy and diverse ecosystems for fire-dependent species like pine trees.

The 88th RSC had issues at the Silver Springs Local Training Area (LTA) in Wisconsin and Sunflower LTA in Kansas, as tree growth in certain areas was so dense vehicular and foot traffic, necessary for field training exercises, was constrained and there were potential dangers from falling trees.

"In order to maximize the training space available for the RSC, we recommend what trees and vegetation need to be removed," Coombs said. In some instances, the Corps will perform the actual tree removal.

Because of the district's relationship with the 88th, when any environmental issue comes up, they can call for a quick fix. In April the 88th requested support at Fort Snelling in Minnesota to remove 19 ash trees that had been infested by the invasive Emerald Ash Borer.

"We enjoy the diversity of the work," said Carla Heck, USACE Louisville District project manager. "Although some of these projects are smaller, seeing them through to completion makes it nice, and we feel good knowing we're helping the 88th maintain and maximize the size of its facilities." ☺



Controlled burns, conducted at U.S. Army Reserve training areas for the 88th Regional Support Command, are used for invasive species control and help to maintain healthy and diverse ecosystems. (USACE Photo)



# Smoke grenades present challenges to Fort Jackson construction

Story and photo by Sara Corbett

U.S. Army Corps of Engineers, Charleston District

**D**uring the excavation phase of the new Basic Training Complex Four construction project at Fort Jackson, South Carolina, the U.S. Army Corps of Engineers, Charleston District discovered white phosphorous grenades on the site.

“As soon as we saw white smoke erupting from the ground,” said Eric Jones, project manager, “we knew we had a problem. The area was immediately cleared and the Fort Jackson Fire Department and the Explosive Ordnance Disposal unit were called in to assess the situation.”

It was quickly determined by the EOD unit that the smoke was from white phosphorous grenades, also known as ghost grenades, which were used as a signaling device during World War II. The initial findings from Fort Jackson’s EOD unit concluded that eight grenades had ignited at once when the excavator being used on the project scraped the 75-year-old casings. The EOD unit did a surface sweep of the area and found 55 more grenades. They took all of the grenades and properly disposed of them at an approved range on Fort Jackson.

The Corps and Fort Jackson always prepare for anything and everything that could arise during a new construction project, including finding unexploded ordnance. Because of this, the two organizations worked together to remedy the issue quickly and efficiently.

While Corps employees were still on high alert, the immediate alarm subsided and the area was properly roped off by the EOD unit until Corps’ experts from the U.S. Army Engineering and Support Center, Huntsville’s Military Munitions Design Center arrived. Since Fort Jackson’s EOD unit doesn’t perform sub-surface clearing, it was necessary that the Design Center personnel were called in.

“Since safety is the Corps’ number one concern, we wanted to ensure that the entire site had been swept and cleared before moving forward,” Jones said. “The Munitions and Explosives of Concern Reconnaissance (MEC Recon) team swept the area and provided step-by-step guidance to mediate the problem.”

It took the MEC Recon team two days to thoroughly sweep and search approximately 10 acres where they found four more grenades.

Due to finding the grenades, there are several additional precautions that must be taken before proceeding with the completion of this project and Charleston District and Fort Jackson are in the process of weighing all the options prior to making a final decision.

Just like most Army installations, Fort Jackson has a long history and over time locations of barracks, ranges and other facilities shift to different areas on the base, so finding unexploded ordnance on an old Army base is not uncommon.

Luckily, no one was injured in this event, but this provides an example of always being cautious. Even if they are old, munitions can be dangerous. If you think you may have found a possible military munition or an unfamiliar object, please practice the three Rs: Recognize, Retreat, Report. Under no circumstances should you ever disturb or pick up a possible munition. ☺





# MAJOR ARCHAEOLOGY SITES PROTECTED AT YUMA PROVING GROUND

Story and photo by Mark Schauer

Yuma Proving Ground, Arizona

As a military installation, U.S. Army Yuma Proving Ground, Arizona, has a proud history dating back to the 1940s.

Part of Gen. George S. Patton's Desert Training Center/California-Arizona Maneuver Area during World War II, 20 divisions of men trained here for combat, and 10 of these divisions liberated Nazi concentration camps in Europe.

From the 1950s forward, the proving ground has tested virtually every piece of equipment in the ground combat arsenal for the most impressive military in world history. Technologies like the global positioning satellite (GPS) system were pioneered here, and today cutting edge commodities like unmanned aerial systems are put through their paces prior to being fielded to troops.

But the installation larger than the state of Rhode Island is also home to history that is far more ancient. A crossroads for native people for at least 7,000 years, there are hundreds of culturally significant sites within the modern boundaries of Yuma Proving Ground. The stewardship of these irreplaceable sites is a high priority for the installation, with the proving ground performing painstaking ground surveys of between 12,000 and 15,000 acres annually.

Some of the sites are isolated: vestigial remnants of ancient trails with the occasional arrowhead or potshard strewn on the ground. Others are awe inducing: White Tanks is a canyon studded with natural rock cisterns that retain rainwater year-round. Some crevices within this undulating volcanic rock have impressive stone formations rising from the center of the ponds.

The water itself may not be palatable by modern civilization's standards: it is still and

brackish, sporting a thin, but noticeable film of algae across the top. Bees hover near the water, their low drone one of the most audible sounds in the silent canyon. But to a parched desert traveler of hunter-gatherer times, the water was life-saving. Across the millennia, passers-through decorated the canyon walls with hundreds of intricate petroglyphs that remain to this day, a faded but stirring testimony to the importance of this natural wonder to unknown numbers of travelers.

"This is one of the most significant archaeological sites in Arizona," said Andy Laurenzi, southwest field representative of Archaeology Southwest, a non-profit organization dedicated to exploring and protecting the places of the past throughout the American Southwest. "You have this relatively undisturbed landscape with quite a concentration of petroglyphs and indications of human occupation for thousands of years. You find similar places along major river systems, but not very often in arid parts.

The added significance of the area is its association with Malcolm Rogers, one of the pioneering archaeologists in the Southwest: Remnants of his camps in the White Tanks are present today."

Along the top of the canyon are small caves, some of which have ancient potshards and other artifacts, all suggesting human habitation.

"People were living here," Laurenzi said. "Maybe not year-round, but certainly for sizable periods of time. If you're going to go to the trouble of carrying in pottery, it suggests you have plans to stay awhile."

Despite the fact that trespassing on military land is both unsafe and a violation of federal law, people still occasionally slip in to White Tanks and other cultural sites intending to loot or vandalize. Though site surveys over the past two decades show the site is relatively

unchanged, Yuma Proving Ground personnel want to be proactive in preserving the site for generations to come, Laurenzi said. In addition to upgrading gates, the likeliest long-term solution is a site stewardship program comprised of proving ground employees

willing to volunteer their weekend time for periodic site inspections.

"Part of our job is advocating for the preservation of cultural resources," Laurenzi said. "The military has done a great job of stewardship here by recognizing the

importance of White Tanks and others like it. The designation of White Tanks Management Area by Yuma Proving Ground helps minimize intrusions, and that's good news." ❧



Andy Laurenzi, southwest field representative of Archaeology Southwest, views a petroglyph-inscribed canyon wall. "This is one of the most significant archaeological sites in Arizona," he said. "The military has done a great job of stewardship here by recognizing the importance of White Tanks and others like it."



# Regional Support Command recognized for energy efficiency, management

Story and photo by Col. Stewart Fearon  
63rd Regional Support Command  
Director of Public Works

The 63rd Regional Support Command (RSC) recently received the 2016 Secretary of the Army Energy and Water Management Award for reducing energy and water use and improved efficiency in the seven state Southwest Region.

The Honorable Katherine Hammack, assistant secretary of the Army for installations, energy and environment (ASA IE&E) presented the award Aug. 11 at the conclusion of four days of energy and sustainment professionals receiving classes and learning about best practices across the entire United States and military facilities in Europe.

Projects contributing to the award included solar arrays, lighting retrofits and landscaping at various sites.

The 63rd installed carport-mounted solar arrays at March Armed Forces Reserve Center, California, and Barnes Hall Army Reserve Center, Arizona, which produced a total of 293,000 kilowatt hours in FY15. Camp Pike Armed Forces Reserve Complex in Arkansas received recognition from the Lighting Energy Efficiency in Parking Campaign for a parking light retrofit that reduced energy use by 85 percent. Additionally, the 63rd RSC used the [Army Meter Data Management System](#) in managing 74 buildings, reducing energy consumption in some cases by as much as 80 percent.

To reduce water use and create more sustainable facilities, the 63rd RSC used xeriscaping design and native plants to landscape facilities in drought-affected areas of southern California. Annual cost avoidance was \$583,503, saving 31,291 million British thermal units per year. The Army Reserve and 63rd RSC are committed to building sustainable facilities to protect the environment for future generations.

Mike Stocks, the chief of staff for the 63rd RSC said, "This is all part of the initiative by the Army Reserve to comply with Executive Order (EO) 13423, EO 13514 and the Army Reserve Campaign Plan Objective 8.0."

EO 13423 was signed by President Bush in 2007 to Strengthen the Federal Environmental Energy and Transportation Management. The goals were to increase energy efficiency by making it mandatory to reduce energy intensity by 30 percent from fiscal year 2003 to 2015, reduce greenhouse gas emissions, use energy from renewable sources, construct sustainable buildings and conserve water



*A xeriscape project at the U.S. Army Reserve Center in West Los Angeles, California, replaced grass and reduced watering costs/usage and landscaping costs (mowing).*

<http://www.gpo.gov/fdsys/pkg/FR-2007-01-26/pdf/07-374.pdf>.

EO 13514 focuses on **Federal Leadership in Environmental, Energy, and Economic Performance**. This EO strengthened the goals of EO 13423 and revised the greenhouse gas emission reduction targets for FY 2020 using an FY 2008 baseline. EO 13514 mandated that by FY 2030 federal buildings achieve "zero net energy." It also required a reduction of potable water consumption by 26 percent by FY 2020 <https://www.fedcenter.gov/programs/eo13514/>.

The Army Campaign Plan Objective 8.0 is to "Achieve Energy Security and Sustainability Objectives" by enhancing energy and water security by integrating advanced sustainability in civil works projects. ☺

# Emphasizing water's role in Army Reserve's global footprint

By Jonelle Kimbrough  
Army Reserve Sustainability Programs

In life, there is a universal truth: the Earth and its inhabitants cannot live without water.

Water is critical to the health of our global environment and our global economy. The protection of water resources is vital on many levels, and the vulnerabilities of those resources only justify their conservation — especially for the U.S. Army Reserve.

Soldiers and support forces rely on viable, accessible water to maintain readiness and meet mission requirements both at home and overseas. The Army Reserve has a global footprint, so water crises across the world have the potential to impact its abilities to accomplish the mission. Therefore, the Army Reserve must do its part to conserve water and protect vital resources.

According to Paul Wirt, chief of the Army Reserve Sustainability Programs Branch at the Office of the Chief of the Army Reserve, 46 percent of Army facilities are located in vulnerable or high vulnerability areas.

The Army Reserve has been successful in its water conservation efforts. In fiscal year 2015, the Army Reserve achieved a 42 percent reduction in potable water use intensity (potable water use divided by square footage) and a 25 percent reduction in industrial, landscaping and agricultural water use, compared to an FY 07 standard. In FY 15, the Army Reserve saved \$406,198 in overall water costs, compared with FY 14 expenses.

Jaime Kearney, Army Reserve Water Program coordinator, and Kate McMordie Stoughton, Pacific Northwest National Laboratory senior engineer, attribute the reduction to several factors.

The implementation of water efficiency projects is leading the charge. For instance, less efficient plumbing devices were replaced with water efficient models at two facilities at Devens Reserve Forces Training Area in Massachusetts last year. Kearney said those facilities expect to see a 30-percent reduction in water use as a result of those actions. Replicating successes like these will have a significant impact on water use across the Army Reserve enterprise.

Leak detection and repair also have also contributed to the success. Through the Assess, Maintain, Improve (AIM) Program, Building Energy Monitors at Army Reserve facilities are trained to monitor plumbing devices for leaks and other maintenance issues.

"If AIM measures are followed, sites will see reductions in water loss through leaks and wasteful practices," McMordie Stoughton said.

Alternative water source projects such as rainwater harvesting and facility occupant education will also be at the forefront of continued water conservation efforts.

Ultimately, the most effective aspect of the Water Program may be its holistic approach to sustainability. "We have been working with water managers to distribute information on water reduction both in the workplace and the home," said Kearney, emphasizing that water conservation is the responsibility not only of Soldiers but also of citizens.

Everyone in the Army Reserve community can help conserve our resources by remaining conscious of water use and saving water wherever possible. If we all work together, we can conserve water for our current and future missions and lessen the impact on the world's water resources.

Visit [usarsustainability.com](http://usarsustainability.com) to learn more about water conservation. Like us on Facebook at [www.facebook.com/usarsustainability](http://www.facebook.com/usarsustainability) and follow us on Twitter [@USARGoGreen](https://twitter.com/USARGoGreen). ☺





# Corps begins cleanup of Formerly Used Defense Site at Attu Island

Story and photos By Dena O'Dell

U.S. Army Corps of Engineers, Alaska District

Against the backdrop of a crisp, blue sky and snow-scattered mountains, a bright orange excavator sharply claws at the earth near Massacre Bay. With each dip of its bucket, contaminated soil, tar and old, rusted diesel drums are unearthed from their decades-long resting place.

Once a bustling active military site, the remote Aleutian island buzzed again with activity from June to mid-July as the U.S. Army Corps of Engineers, Alaska District, along with its contractor, Bristol Environmental Remediation Services, LLC, cleaned up contaminated remnants from Attu's storied military past.

More than 70 years ago, the area served as a landing hub for U.S. Army Soldiers fighting to recapture the island from the Japanese during World War II. It also operated as an Army base and Naval station during the war, and was later home to the Air Force, Navy and Coast Guard, the latter maintaining its presence there until 2010.

The island is now home to its only remaining inhabitants — hundreds of migratory and Asiatic bird species.

Although human residents are gone from the island, the footprint of their presence still remains through miles of twisted metal, rusted fuel storage tanks

and barrels, flattened Quonset huts and former military quarters scattered throughout the island.

But the biggest concern for the landowner — the Alaska Maritime National Wildlife Refuge, under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS) — is not the rusted fuel storage tanks and barrels themselves, but the petroleum once stored in them, which has leaked and entrapped birds.

The short-term goal for the 2016 cleanup effort was to address the physical entrapment and bird mortality, which has been occurring at two significant petroleum release sites at Attu Island, according to Tim Plucinski, environmental contaminants biologist, USFWS and the refuge.

## Getting to the Bottom of it all

While on the island, the Corps oversaw the removal of about 10,000 tons of petroleum, oil and lubricant-contaminated soil; 5 tons of lead-contaminated soil; 70 tons of tar drums; and 52 above-ground storage tanks from the area formerly known as "Navy Town," said Andy Sorum, project manager for the Corps' Formerly Used Defense Sites program.

Samples were taken from the excavation site, before the contaminated soil was placed in 10-ton bags, numbered and transported to a staging area. In the fall, it will be barged to a permitted disposal area in the Lower 48.

The excavation and offsite disposal of petroleum-contaminated soil, drums and tanks sufficiently addressed the risks posed by the release sites, Plucinski said.

"By removing these source areas, we have cut off that exposure pathway and stopped a continuous release of pollution into our environment," said Ken Andraschko, chief of the FUDS program for the Corps in Alaska.

In addition to the two project sites, the Corps oversaw the excavation of additional lead-contaminated soil for off-site disposal, conducted reconnaissance of a number of other sites in search of contaminant sources and performed archaeological surveys to ensure the protection of the island's cultural and historical resources during future work activities.

One of those involved was 10-year Corps employee and physical scientist Jake Sweet, who collected samples from other potential sources of contamination on the island.

"Out here, we are collecting samples for petroleum products — heavy Bunker C diesel and gasoline. Also the tar coming out of the burn pits," Sweet said. "In addition to the petroleum stuff, we are looking for lead batteries, lead paint and transformers, which are being

analyzed for PCBs."

## Overcoming Challenges

The work was not without its challenges, however, when considering weather in the Aleutians and the logistics of getting equipment out to the site, which is about 1,500 miles from Anchorage at the tip of the island chain.

"Our first goal is to achieve the work with a complete safety-first mindset," Andraschko said. "Having that safety-first mindset is paramount with logistics being such a great challenge."

Bristol began making arrangements for the equipment and materials for the project in November 2015, according to Shane Burgess, site superintendent for the company. Some of the materials were transported in April from Seattle to Dutch Harbor, while the rest were shipped from the Port of Anchorage. Upon their arrival at Dutch Harbor, the materials were transferred to a barge and landing craft, which then left Dutch Harbor for Adak.

Unsure about the condition of the airfield at Attu, the Bristol crew met the barge in Adak and rode with the equipment and materials to the island.

"It took almost four days from Adak to Attu," Burgess said. "That was the slowest days of my life. We were averaging 6 knots an hour — about 4 miles an hour."

The Bristol crew arrived at Attu May 1 and was faced with another challenge — snow drifts where the base camp was slated to be set up and snow covering half the island, Burgess said.

"It took us about a day total to get everything unloaded when we got here, but there was a lot of snow," he said. "The road was snowed in. The airstrip, half of it, was snowed in. We spent two days doing snow removal, so we could get the camp set up."

It took the crew 11 days total to set up camp. The team left the island May 12 to give the snow a chance to melt off and returned to start work June 1. Once the crew was on the ground, the work progressed without a hitch.

"Bristol has great experience at providing all the requirements necessary to operate in remote Alaska for months at a time, and they demonstrated it once again," Sorum said.



A piece of contaminated soil June 20 at Attu Island, Alaska. During an environmental cleanup project on the island, the Corps oversaw the removal of about 10,000 tons of petroleum, oil and lubricant-contaminated soil; 5 tons of lead-contaminated soil; 70 tons of tar drums; and 52 above-ground storage tanks.



Andy Sorum, project manager with the Formerly Used Defense Sites program, U.S. Army Corps of Engineers, Alaska District, looks on as employees with Bristol Environmental Remediation Services, LLC, load and prepare to bag contaminated soil June 20 during an environmental cleanup project at Attu Island.

Continued on [Page 12](#)



# Attu Island.....

Continued from Page 11

## Partnering for Success

While on the island, the team worked diligently to minimize wildlife disturbance, as well as protect the land's resources.

Marianne Aplin, visitor services supervisor for the USFWS and the refuge in Homer, said she appreciated the fact the Corps and Bristol emphasized the point of minimizing those impacts during daily safety briefings.

"The USFWS and the refuge were very pleased with the work conducted by the Corps and Bristol," said Merry Maxwell, FUDS coordinator for the USFWS and the refuge. "The project not only required the removal of contaminants from the environment, but also the protection of the cultural and historical features that are located all over the island. That success was directly related to the positive relationship and teamwork between the USFWS and the Corps."

The clear result was a consistent, well-coordinated and productive effort, she added.

"We have built a solid partnership between USFWS and the Corps over the years, with communication and trust between the people of both agencies," Andraschko said. "I believe

that by working together, communicating with each other regularly and by understanding each person's role, we can all achieve our common goal of restoring and protecting the environment in Alaska."

The Corps is planning some additional cleanup work at Attu in the summer of 2017. The hope of the USFWS and the Corps is the island will one day, again, "go back to the birds."

"All of this beauty and life is set against the background of the landscape and the scars it still bears from the Battle of Attu," Aplin said. "The island was a wildlife refuge before the war, saw valor and sacrifice by civilians and Soldiers, and, with the help of the Corps, the birds are reclaiming safe habitat in this farthest west extent of the (refuge) and North America."

## About the FUDS Program

The work at Attu is part of the Corps' goal of cleaning up 90 percent of Alaska's FUDS properties by the end of fiscal year 2018 and 95 percent by the end of FY2021.

The cost of this year's project was more than \$10 million.

There are more than 530 FUDS properties across Alaska. Of those properties, 395 were found to have no hazards. The remaining 137 properties required additional investigation and remedial action, with more than half of those already completed. About 48 of the FUDS properties are scattered throughout the Aleutians.

Many of the identified properties in Alaska are remnants of World War II and Cold War defense site activities, including Attu. ☞



John Mura, an unexploded ordnance technician for Bristol Environmental Remediation Services, LLC, secures a load of contaminated soil before it is taken to a staging area, where it will be shipped out by barge in the fall to a permitted disposal facility in the Lower 48.



Workers sit down for a meal of prime rib and mashed potatoes June 22 at Attu Island, Alaska. The island, at the tip of the Aleutian chain, became home to more than 20 workers — some for more than a month — this summer during an environmental cleanup project for the U.S. Army Corps of Engineers, Alaska District's Formerly Used Defense Sites program.

Story and photo by Dena O'Dell  
U.S. Army Corps of Engineers, Alaska District

## Attu Island becomes 'home away from home' for cleanup crew

For more than a month this summer, Attu Island became a "home away from home" for more than 20 people from across Alaska and a few from the Lower 48.

Two women in particular — a self-proclaimed Navy brat and a Colorado native who began cooking at the age of 8 and had her own catering business at 19 — were instrumental in ensuring the base camp ran smoothly during a recent environmental cleanup project for the U.S. Army Corps of Engineers, Alaska District's Formerly Used Defense Sites program.

Hilary Weatherford of Alaska and Jodi Boyd of Colorado, both cooks with Alaska Minerals, worked from sun up to sun down to ensure workers with the Corps and Bristol Environmental Remediation Services, LLC, were served three hot meals a day. Thanks to these efforts, morale remained high while employees worked 12-hour days to remove contaminated soil and fuel drums from the island.

Workers were served menu items that included filet mignon, prime rib, homemade beef stew and homemade cheesecake, to name a few. An array of healthy, salty and sweet snacks and beverages also lined the dining hall, which remained open 24/7.

"We've had a lot of people who have told us this is the best camp they have been at and the best food they have had," Weatherford said. "It means a lot. You work to make them happy as much as you can. You're not cooking for yourself; you're cooking for them."

In addition to making most of their recipes from scratch, the women created a family atmosphere by recognizing birthdays, posting signs like "enjoy family" around the dining hall and playing music to create a fun atmosphere.

"I try to make it family-orientated because people tend to miss their (families) and miss anything that is important in their life," Weatherford said. "If you can kind of get a bond going, it helps them take their minds off of who they're missing as much."

The key to a successful project is keeping workers warm, dry and fed, said Shane Burgess, site supervisor for Bristol.

Accommodations for campers, some of whom spent more than a month on the island, included large heated tents, complete with beds, electricity and internet access.

Burgess said he has worked in camps for the last 30 years — some of which were horrible.

"The intent is there, but it's hard to get a good day's work out of someone when their down time (isn't good). We always make a point to have nice camps. That way you won't have mutiny," he joked. "It keeps the morale up."

John Mura, an unexploded ordnance technician for Bristol, shared Burgess' sentiments.

"People here have been great," he said. "They are some of the hardest working people I've ever seen. And everybody is a team. I'd come back and work with these guys again for sure. Especially if we've got the same cooks. No complaints about the food."

Both Weatherford and Boyd said working at the Attu base camp was a humbling experience.

When the work is complete, Boyd, who previously cooked for a gold exploration camp and at a fishing and hunting lodge in Alaska, will return to Colorado.

"I feel like I'm helping. It's nice to be at a camp where it matters." Boyd said. ☞



# Pollinator program aims to restore bee population

Story and photos By Sara Corbett  
U.S. Army Corps of Engineers, Charleston District

**B**ZZZZZ. BZZ. A new sound is greeting visitors to the St. Stephen Powerhouse and fish lift; bees hard at work! “With the continual loss of bees, a main pollinator, we are excited to welcome 10 hives onto the grounds in support of President Barack Obama’s 2014 Presidential Memorandum establishing the Pollinator Health Task Force and the new USACE Pollinator Program,” said Joe Moran, chief of operations.

Pollination is the act of transferring pollen grains from the male anther of a flower to the female stigma. The goal of every living organism, including plants, is to create offspring for the next generation. Pollinators are defined as animals that assist plants in their reproduction and are responsible for assisting with pollination in more than 80 percent of the world’s flowering plants.

To get this new pollination program up and running, the Charleston District is partnering with Charleston Community Bee Gardens, which is providing the hives and a beekeeper to



Five brightly colored hives are set up on the St. Stephen Powerhouse property. Each hive has approximately 20,000 bees but will eventually grow to 50,000.

maintain the hives.

“I am bringing five hives to start and will bring five more a little bit later in the summer,” said Don Graham, beekeeper. “Each hive will average 20,000 bees in the fall and will build up to around 50,000 in late spring.”

Pollinators contribute substantially to the economy of the U.S. and are vital to keeping fruits, nuts and vegetables in our diets and keeping us healthy. Honey bee pollination alone adds more than \$15 billion in value to agricultural crops each year by pollinating everything from almonds and apples to blueberries and squash. Pollinators need lots of land and native forage to thrive, making St. Stephen the perfect location. The Corps’ land at St. Stephen is nearly 2,500 acres.

“Large tracts of land with ample native wild forage are important for honey bees and all pollinators and are becoming increasingly harder to find,” said Graham. “As a beekeeper, I feel programs like this will help us turn the tide on the dwindling presence of pollinators in our environment.”

Unfortunately, the buzz around the bee industry is bad. Last year beekeepers reported losing about 42 percent of honey bee colonies. The rapid decline is due to infectious diseases carried by varroa mite larvae and insecticides. This alarming number is just one of many reasons the district started a pollinator program.

The district is also working with South Carolina Department of Natural Resources since the hives will sit in one of their Wildlife Management Areas. Currently, SCDNR does not have a WMA Pollinator Program, but the



Above: Don Graham, bee keeper, carefully removes the lids to the hives.

Right: Once the lids to the hives are removed, the bees are free to roam their new home.

district is working closely with DNR in hopes of making this initiative a template for a statewide WMA Pollinator program.

“One of the goals of the pollinator program is to restore or enhance 7 million acres of land for pollinators over the next five years,” Moran said. “DNR has more than 1.1 million acres in their WMA Program; if they introduced a pollinator program they would be drastically increasing the amount of pollinators. The impact would be substantial to the program.”

The Charleston District looks forward to hosting these new residents at St. Stephen. ☞





# Old mines, salamanders, bats and Corps missions!

By Karl Studenroth

U.S. Army Corps of Engineers, Vicksburg District  
Lake Ouachita Field Office

One of the Corps' most important missions is environmental stewardship. A variety of cultural history, landscapes and species fall within the array of management and responsibility assigned under this mission, either directly or indirectly.

You may be wondering how old mines, salamanders and bats can possibly be a part of the Corps' mission. The focus of this article is to highlight unknown aspects of the Corps' day-to-day activities and responsibilities that some people may never have realized. I invite you to read along for a different perspective of resource management.

The geological history of the lands of the Lake Ouachita, Arkansas, project is very interesting and unique due to the lake's location within the Ouachita Mountains. A side effect of the immense pressure and forces that built the Ouachita Mountains resulted in the formation of diamonds, quartz and other crystals and minerals. The lure of these riches has attracted miners and settlers to the Ouachita Mountains since the early 1800s and resulted in one of the nicknames of Arkansas being the "Diamond State." As settlers searched for the riches in the Ouachita Mountains, many mines were dug in search of veins and pockets of hidden riches. One such old mine is located along a mountainside near the bank of Lake Ouachita.

"A rather famous mine." Eventually the mine caught the attention of a rather significant professor and herpetologist, Dr. Stanley Trauth of Arkansas State University. In 1999, Trauth began studies of reproductive behavior of slimy salamanders utilizing the mine.

Slimy salamanders are probably the most common species of terrestrial salamanders in eastern North America. They can be found under rocks and debris in mesic, wooded areas and even yards. As children or adults, some of you may have found these distinguishable black salamanders with numerous white speckles. The occurrence of slimy salamanders

in any given area isn't uncommon, but in this particular case, the salamanders have used the mine for a giant nursery to lay their eggs and raise their young. In fact, this mine is so famous that Trauth's work and the salamanders were featured in Sir David Attenborough's documentary series, "Life in Cold Blood". In July 2006, Attenborough visited the mine and filmed footage for the series.

I was invited by Dr. Trauth to assist him during a recent visit to the mine. During our time in the mine, we observed about 75 salamanders, including about 40 females with their eggs or young.

Another important aspect of this mine is that it has become a roosting site for bats. Bats utilize this mine for a variety of reasons and during our visit, we observed about two dozen on the walls or flying within the mine. Because bats have lost so many of their natural roosting sites, such as caves and large trees, alternative roosting sites like mines and bridges have become very important.

So, you may be wondering: "What do old mines, salamanders and bats have to do with Corps' missions?" To answer that, we need to look at the bigger picture and the importance of salamanders and bats.

Amphibian populations have dropped significantly within the past 20 years. These declines reflect greater environmental issues and changes. Healthy populations of salamanders in a given area can be an indicator of the overall environmental health of that area. The more direct connection to people is the amazing ability salamanders have to regrow entire limbs and regenerate parts of major organs. Studies are now underway to understand these abilities and to replicate



Salamander (*Plethodon albagula*) and a clutch of newly hatched young! (Photo by Dr. Stanley Trauth)

it for human use. Just imagine being able to regrow lost limbs or damaged organs and the thousands of human lives this could benefit and save, all from a lowly, slimy salamander.

Bats are also one of the most ecologically beneficial species on earth. Bats play a critical role in the control of insect populations and one bat can consume up to 3,000 insects in one night. One colony of bats can consume tons of insects in one year. Bats also eat many harmful insects such as mosquitoes that can carry deadly diseases, and agricultural pests such as moths and beetles. The Brazilian free-tailed bat, a common species in Arkansas, consumes approximately 2 million pounds of insects nightly in the Texas Hill country alone. Properties of Vampire bat saliva are also being studied and used to break up blood clots which lead to stroke. All these benefits are being derived from a tiny bat.

Salamanders and bats face many threats and their numbers have declined at an alarming rate. The benefits they both provide ecologically and to humans are immeasurable. In this case, the simple protection and monitoring of one small mine on Corps' property have implications that reach far beyond the mine, Lake Ouachita and the responsibilities entrusted to the Corps. 🐸

## Xeriscaping projects save water despite drought

By Jonelle Kimbrough

Army Reserve Sustainability Programs

In the 1746 edition of "Poor Richard's Almanack," American statesman Benjamin Franklin wrote, "When the well is dry, we will know the worth of water." The U.S. Army Reserve knows the worth of water. In fact, the success of every mission depends on it. At some sites, though, drought is turning water into a limited resource and conservation into a necessity.

The 63rd Regional Support Command (RSC) has found a practical way to combat the drought and reduce water consumption with some unique landscaping projects.

"Water conservation projects were, and are, necessary due to the water use observed at many sites," said Varun Sood, a resource efficiency manager for the 63rd RSC. Many facilities in the command — which includes the states of California, Nevada, Arizona, New Mexico, Texas, Oklahoma and Arkansas — are located in arid geographic areas that continuously experience drought and water scarcity, resulting in high water bills and a lack of water security that threatens to disrupt readiness.

"We want to reduce our total water consumption," Sood said. To that end, the 63rd RSC added xeriscaping to conservation efforts.

Xeriscaping is the practice of landscaping and gardening that reduces or eliminates the need for supplemental irrigation. Originally developed for drought-afflicted areas, the principles of xeriscaping have a broadening appeal as a result of their many benefits.

Typically, xeriscapes have features that are less water intensive such as stone ground covers and native plants, which are plants that have naturally occurred in a particular habitat over time, with no human intervention. Native plants are well adapted to an area's unique climate and environmental characteristics such as its water availability, soil composition and indigenous insects. Xeriscapes therefore require less water, fewer fertilizers and fewer pesticides. As a result, these designs have the long-term potential to conserve water, prevent chemical pollution and save money. Hays Kinslow, an energy manager with the 63rd RSC, said that xeriscapes also improve the aesthetics of their sites and reduce the need for water infrastructure and grounds maintenance.

Over the past two years, xeriscapes have been completed in California at Los Alamitos Reserve Center in Los Alamitos, Holderman Hall Reserve Center in Los Angeles and Bell Reserve Center in Bell Gardens. "They are large facilities where we could make a big impact due to the amount of water used there for irrigation," Sood explained. Currently, another xeriscape is planned for Leymel Hall Reserve Center in Fresno, and the 63rd RSC is exploring ways to incorporate xeriscaping in future projects.

According to Sood, all of the 63rd RSC's projects include plants native to California, stone ground covers, drip irrigation systems and other features of a traditional xeric garden.

When xeriscapes have been combined with additional water conservation methods, such as plumbing improvements, the results have been quite impressive. The 63rd RSC has reduced its water use by nearly 38 percent from fiscal year 2014 to fiscal year 2015. "Xeriscape projects have reduced the need for irrigation and have definitely contributed to a reduction in water use at our sites," Sood said.

With their innovative ideas for landscapes that work with the environmental conditions at their sites, the 63rd RSC is contributing to a culture of conservation across the Army Reserve, and they are making every drop count. 🌿



# Breaking down water

Story and photos by Trisha Dorsey  
U.S. Army Corps of Engineers, Kansas City District

When you think about Corps lakes, do you think about the water pulled from the lake to support local municipalities? Do you wonder about the quality or testing of the water to ensure it's safe for humans, plants and animals?

Many are not aware that the U.S. Army Corps of Engineers has a robust Water Quality Program like the one at Kansas City District. The program monitors lake projects, surface water quality issues related to watersheds, Civil Works projects and the lower Missouri River, to ensure the quality of the water is suitable for project purposes, existing water uses and public health and safety standards.



Marvin Boyer takes water samples from all 18 Kansas City District lake projects several times a year. (Courtesy photo)

The program compiles data vital to determining long-term trends relative to state and federal water quality standards, watershed conditions, recreational conditions and drinking water quality.

"Water quality is an integral component of all Corps Civil Works missions," said Marvin Boyer, Kansas City District's limnologist who oversees the program. "My job is very unique. I work in a cubicle, a lab and in the field to help inform decision makers at local, state and federal levels."

Boyer studies physical, chemical and biological conditions and interactions in freshwater. Sampling water helps scientists identify baseline conditions and trends to determine whether to take corrective actions.

Each spring, Boyer begins testing waters at each lake project site, collecting monthly samples through September. If testing identifies water quality deficiencies, or there is reason to question the quality, sample collection occurs more frequently.

"Sediments, nutrients and contaminants enter these projects. While some contaminants leave through the lake outflows, others are stored in the reservoirs," Boyer said. "We inherit the stored water and are responsible for what leaves our property. Monitoring ensures it is safe for humans and animals and is critical to support the wide range of uses that depend

on Corps projects for water."

Boyer collects samples from the main arms of the lake looking at physical profiles (temperature, dissolved oxygen, pH, turbidity, conductivity, salinity and suspended solids) using special instruments. Chemical samples follow, checking for nutrient, sediment, herbicides, chlorophyll concentration and metals. Biological components like algae/cyanobacteria counts, algal toxin and bacteria are other measures taken situationally for recreational advisories. He finishes with samples from inflow streams (bridge crossings) and outflow below the dam to complete the picture.

Contract laboratories perform chemical analysis of the samples. Boyer reviews the data monthly and adds it to the public webpage twice a year.

Sharing water quality data and expertise is important to the success of the program. The district works with state and watershed conservation groups, such as the Kansas Watershed Restoration and Protection Strategy. This group relies on Corps data to help prioritize best practices for their efforts, terraces, grass waterways, retention ponds, no-till farming practices and herbicide education programs. Watershed conservation efforts are the foundation of nutrient reduction designed to help manage harmful algae blooms.

"Through partnerships, we've seen results of watershed conservation efforts by sharing our water quality data to help others prioritize their conservation practices and funding. We've noticed improvements in overall water quality and decreased atrazine levels in select Kansas streams due to reduced sediment levels and improved herbicide management following new conservation efforts by the state," Boyer said. "Our program's data has evolved



Marvin Boyer, Kansas City District's limnologist, tests water samples in the lab for E.coli.

into a reliable source of long-term data for states to help designate and manage impaired waters to help reduce non-point sources of pollution impacting streams and lakes."

Boyer's expertise is also instrumental in finding solutions for the growing problems associated with harmful algae blooms, reducing farming impacts on water quality, shoreline or streambank erosion, large recreational events such as triathlons, dam maintenance repairs, fish kills and findings of invasive species.

"Our program vision is to efficiently and effectively implement the water quality management requirements of Engineering Regulations and provide needed technical support on surface water quality issues to effectively plan and operate activities at Corps projects," Boyer said. "Our efforts and role as water quality technical experts support operational decisions related to state and federal water quality regulations based on the Clean Water Act, help maintain function of authorized purposes and protect human health and the environment. As the district's limnologist, I'm thrilled to be part of this rigorous scientific team." ☞



Marvin Boyer, Kansas City District's limnologist, adds media to water samples while testing for E.coli in the lab.



# Listening to the pulse of the Savannah River

## The Nature Conservancy

A soft breeze rustled the marsh grasses as James “Jim” Rothnie carefully placed a fresh canvas on his easel. Morning light sparkled on the waters of the Ashepoo, Combahee and Edisto (ACE) Basin nearby.

Quietly, he crept closer to the dozen lounging birds, their elegant snow-white plumage contrasting sharply with leathery, bald heads. Wood storks were one of his favorite sightings.

Click! The shutter released just in time.



An endangered wood stork comes in for a landing at Pinckney Island National Wildlife Refuge in South Carolina. (Photo by Eric Horan, U.S. Fish & Wildlife Service)

The birds — perhaps showing off — rose majestically into flight.

“It was a fraction of a second,” said Rothnie, an active birder, painter and trustee for The Nature Conservancy in South Carolina. “I took the picture and painted it on the spot. There’s nothing more incredible than capturing nature like that.”

The intersection of good food sources and habitat make the Lowcountry a birder’s (and painter’s) paradise. Both factors depend heavily on the heartbeat of the Savannah River.

The natural flow of a river resembles a healthy human heartbeat. Heavy rains send large pulses of water downstream in spring, flushing out side channels and signaling fish to spawn. Dry stretches in summer allow seedlings to take root.

If a natural river resembles a heartbeat, a heavily dammed river is like a flatline.

“Dams store water in reservoirs and release it slowly throughout the year,” said Eric Krueger, director of science and stewardship for The Nature Conservancy in South Carolina. “Without the river’s ‘pulse,’ natural processes suffer.”

### A River without a Pulse

Much of the Savannah River flows strong and quick, forcing fish to fight a constant current. Fishermen know that species like largemouth bass and redbreast sunfish prefer the slower water of small side channels.

“These channels are only partially connected to the river; that makes them vulnerable,” Krueger said.

“During droughts, water releases from dams are too small to flush them out. The stagnant water left behind doesn’t hold enough oxygen for fish to survive.”

Hérons, egrets and other wading birds feed on the fish in those channels. They also depend on floodplain forests, which grow along the river’s edge, for nesting and roosting sites.

“Adult cypress trees can survive periodic floods, but new seedlings need eight weeks for their roots to grow before they can withstand high water,” Krueger said. “We need to avoid releasing water during those growth periods.”

Iconic species like swallow-tailed kites and prothonotary warblers also thrive in floodplain forests.

“Prothonotary warblers are an amazing thing to see; they’re an incredible bright yellow,” Rothnie said. “The swampy areas along the Savannah River are just what they like.”

### Finding Solutions

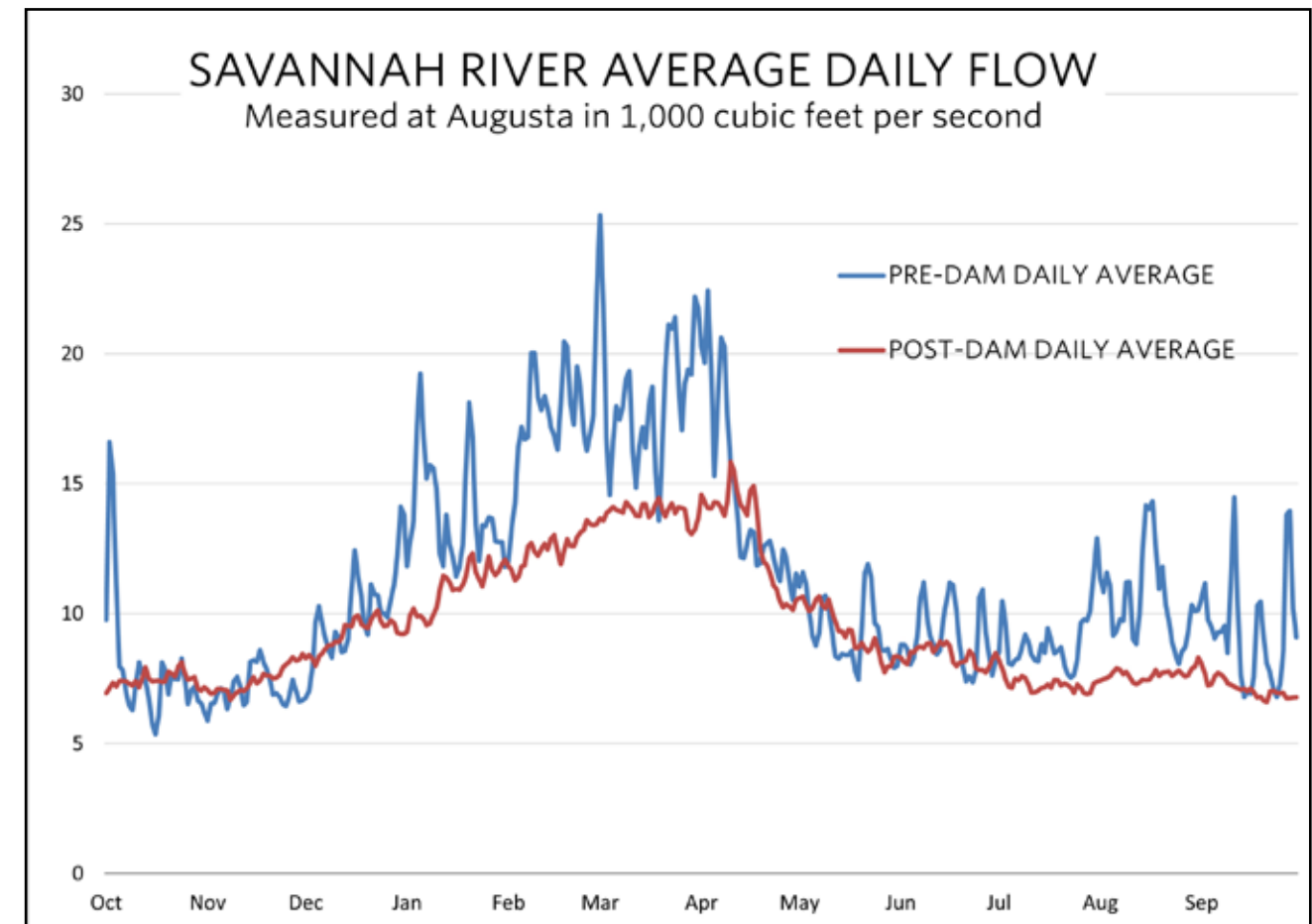
Reservoirs created by the Savannah River’s dams provide electricity for homes, fresh drinking water, and places to boat and fish. Removing the dams isn’t realistic, but changing how they operate is.

“The South Carolina Department of Natural Resources and Georgia Environmental Protection Division first came to us about changing operations for the three dams,” said William Bailey, chief of planning division for the U.S. Army Corps of Engineers Savannah District. The Corps operates publicly owned dams on rivers nationwide, including four on the Savannah River.

“The states’ main concern was lake levels dropping during droughts. We produce hydropower by releasing water from our reservoirs, and those contracts don’t go away during a drought,” Bailey said.

Changing dam operations meant first launching a study on how those changes would affect fish and wildlife, flood control, navigation, recreation and drinking water. By law, half the study’s funding had to come from non-federal sources. Even with SC DNR and GA EPD contributing, the money wasn’t there.

“The Nature Conservancy stepped up,” Bailey said. “They offered not only the



The graph shows the Savannah River’s average daily flow near Augusta before and after dams were introduced. (Graph by Sara Gottlieb, The Nature Conservancy)

remaining funding, but also up-to-date science on how fish, birds and other species would be impacted.”

### A New Plan

In 2013, The Nature Conservancy, Corps of Engineers, SC DNR and GA EPD officially signed on to map out a brighter future for the Savannah River.

“This study is unique in that it covers more than 200 miles of river and several different types of geology,” Bailey said. “It’s a challenge, but we’re always open to doing things better.”

The Nature Conservancy brought together researchers from both states and the federal government to identify which water flow scenarios would most benefit nature on the Savannah River. Krueger now is using those data to develop an ideal “flow prescription” that

will be recommended to the Corps.

Full results of the study aren’t expected until 2017, but initial findings look promising.

“We’ve discovered it takes very little water to keep side channels on life support,” Krueger said. “Just one pulse every two weeks can sustain these areas during droughts. The effect on the lakes is barely visible.”

### A Better Future

Together, these agencies are creating practical, science-based solutions that will help restore the heartbeat of the Savannah River and benefit birds, fish and people.

“I’m very optimistic that our grandkids will be able to enjoy the same natural beauty we have here today,” Rothnie said. 🐾



# Seven receive USACE Sustainability Awards

By **Candy Walters**  
Headquarters, U.S. Army Corps of Engineers

The 2016 U.S. Army Corps of Engineers Sustainability Awards were presented Aug. 25 in a "Virtual Award Ceremony." The awards program provides the opportunity to mark significant contributions the Corps of Engineers is making in implementing energy efficiency and sustainable solutions to reduce our impacts to the environment and surrounding communities and preserve the quality of our natural resources. The winners were nominated for consideration for the 2016 Presidential GreenGov Awards.



- The 2016 award recipients are:
- Sustainability Hero — Neil Anderson, Pittsburgh District
  - Green Team — U.S. Army Engineer Research and Development Center Construction Engineering Research Laboratory for partnering with Fort Leonard Wood, Missouri, on the installation's sustainability program
  - Green Innovation — Fort Worth, ERDC Construction Engineering and Research Laboratory, and Headquarters USACE — for the Combined Tool that merged the Net Zero Planner and Comprehensive Asset Master Planning Solution Dashboard — this won a 2016 Presidential GreenGov Award
  - Lean, Clean and Green — two winners: U.S. Army Corps of Engineers Headquarters Logistic Activity's Transportation Fleet Management and Baltimore District's Washington Aqueduct Sustainability Team
  - Building the Future — Omaha District and Fort Carson for their partnership on the 13th Combat Aviation Bridge Aviation Support Battalion Hangar — this won a 2016 Presidential GreenGov Award
  - Good Neighbor Award — U.S. Army Engineering and Support Center Huntsville for its partnership with Energy Huntsville
  - Climate Champion — Patrick O'Brien, San Francisco District

# Partnership leads to Green Team, Green Innovation Awards

By **Michael Jazdyk**  
U.S. Army Corps of Engineers, Engineer Research and Development Center

The U.S. Army Engineer Research and Development Center's Construction Engineering Research Laboratory in Champaign, Illinois, earned two U.S. Army Corps of Engineers Sustainability Awards for their collaborative efforts to improve sustainability and installation planning.

ERDC-CERL received the USACE Green Dream Team Award for their partnership with U.S. Army Garrison Fort Leonard Wood, Missouri, on the installation's sustainability program, and the USACE Green Innovation Award for "Net Zero Planner & CAMPS Tool Integration," a partnership between the Corps' Fort Worth District and CERL.

The USACE Sustainability Awards Program provides the opportunity to mark significant contributions the Corps is making in implementing energy efficiency and sustainable solutions to reduce impacts to the environment and surrounding communities and preserve the quality of natural resources.

"The Directorate of Public Works is proud to be a contributing partner along with the U.S. Army Corps of Engineers, the local communities and governments, and all our fellow U.S. Army Garrison Fort Leonard Wood directorates in our Installation Strategic Sustainability Plan development and execution led by the Plans, Analysis and Integration Office," said Bobby Rakes, DPW director.

USACE, Kansas City District and USAG Fort Leonard Wood worked together to ignite a commitment to sustainability among a broad group of team members.

The team gained expertise from collaboration with approximately 15 directorates and departments at Fort Leonard Wood. CERL provided diverse expertise from civil, mechanical and industrial engineers to community planners and agronomists.

"Our directorate resources the ISSP planning teams with engineers of all disciplines; planners; and, environmental, and cultural and natural resources specialists," Rakes said. "The synergy achieved by this diverse group of highly trained professionals is truly remarkable."

Team collaboration quickly expanded to include local and state agencies, academia and nongovernmental organizations outside of Fort Leonard Wood, as well.

The interagency participation brought together St. Robert and Waynesville, the Missouri Department of Agriculture, the Missouri State Historic Preservation Office, the U.S. Forest Service, Missouri University of Science & Technology and regional sustainability partnerships, like the Sustainable Ozarks Partnership and the Pulaski County Sheltered Workshop.

"Fort Leonard Wood's relationship with USACE is stronger, and the quality of support we receive from USACE is better than any other place I've served around the world. We also enjoy an extremely cooperative and mutually supportive relationship with our local communities and with our state planners, regulators and legislators," Rakes said.

The USACE Green Innovation Award was awarded to "Net Zero Planner & CAMPS Tool Integration," a partnership between the Corps' Fort Worth District and CERL. A USACE team developed and demonstrated new sustainability planning technology at two pilot installations, integrating for the first time two proven software tools.

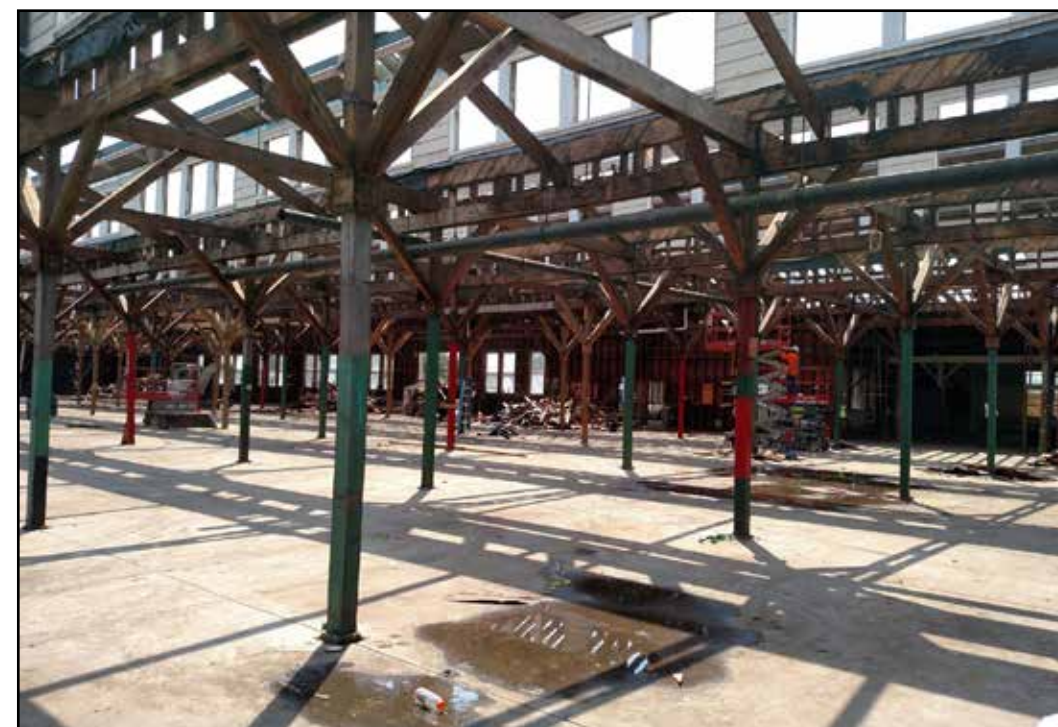
Fort Worth District developed an analytic tool at Fort Hood called the Comprehensive Army Master Planning Solution Dashboard. It began as a mapping program to better use space to meet new mission requirements. CAMPS gives Fort Hood real-time data on how to track people and places across the Army post. CAMPS has already been integrated with area development plans that guide future land use at Fort Hood. The plans detail

where new growth will be directed, where some buildings will be demolished, and how regulations restrict what can and cannot be built. These are critical factors for Directorate of Public Works planners who develop sustainment, restoration and modernization work plans to allocate base capital investment.

CERL's Net Zero team meanwhile developed a processes tool for life-cycle energy use analysis and forecasting. More recently, it added water and solid waste capabilities and was renamed Net Zero Planner. Net Zero Planner gives installation planners a holistic view. It provides a building-by-building or project-by-project analysis that is augmented with a broader, installation-wide vision that incorporates master planning. Net Zero Planner combines conservation of waste, water and power with the installation's supply and distribution.

The Combined Tool identifies sustainability and energy implications in base planning, and automates identification of energy efficiency measures. The Combined Tool generates a list of energy projects to meet energy goals in an analysis of alternatives. All of this is done in a way that reduces the cost and time for energy planning.

"The NZP Tool/CAMPS integration was a very exciting and rewarding project for the entire team. We learned a tremendous amount during the integration phase and are very grateful to ESTCP for funding the project," said Dr. Michael Case, ERDC-CERL project manager. "We're also very appreciative of the time, effort and enthusiasm of the installation personnel at Fort Hood and Joint Base Pearl Harbor/Hickam, Hawaii. The really exciting part about this project was the enthusiastic buy-in by the installation team members as they worked with the combined tools and were able to visualize the alternative investment strategies available to them to meet their mission goals cost effectively."



Fort Leonard Wood's deconstruction, salvage and reuse of the materials from three World War II-era buildings supported the Installation Strategic Sustainability Plan. The post's work with the U.S. Army Corps of Engineers earned a Green Dream Team Award for a sustainable Fort Leonard Wood. (Photo by Bhate Environment Infrastructure)



# Huntsville Energy team named Good Neighbor

## Working with Energy Huntsville earns team 2016 USACE Sustainability Award

By Julia Bobick

U.S. Army Engineering and Support Center, Huntsville

The U.S. Army Engineering and Support Center, Huntsville's Energy Division has earned the U.S. Army Corps of Engineers' 2016 Good Neighbor Award for its collaboration and partnership with Energy Huntsville, a non-profit dedicated to growing the region's economy in the energy sector and establishing the city as the "go-to technology center for solutions to energy programs and projects."

The team award, part of the Army Corps of Engineers' national Sustainability Awards Program, recognizes Huntsville Center's success in sharing experience and technical expertise with the local community in five key segments: local, industry, utilities, government and academia.

"We had a tremendous competition, and it is inspiring to see all of the great work that supports our first USACE Environmental Operating Principle: Foster sustainability as a way of life throughout the organization," said USACE Environmental Division Chief Karen Baker in a June 12 email announcing the winners. This program "provides the opportunity to mark significant contributions the USACE is making in implementing energy efficiency and sustainable solutions to reduce our impacts to the environment and surrounding communities, and preserve the quality of our natural resources."

Through the Energy Huntsville forum, Huntsville Center has been able to deliver an important message for local neighbors on long-term energy sustainability and economic growth for businesses by leveraging and implementing products and services that support Executive Order 13693 "Planning for Federal Sustainability in the Next Decade," according to Paul Robinson, chief of the Energy Division, who was named in the award.



The U.S. Army Engineering and Support Center, Huntsville's Energy Division received the U.S. Army Corps of Engineers' 2016 Good Neighbor Award for its collaboration and partnership with Energy Huntsville during a video teleconference Aug. 25. Energy Huntsville is a non-profit dedicated to growing the region's economy in the energy sector and establishing the city as the go-to technology center for solutions to energy programs and projects. From left: Bill Carswell and Jay Newkirk from Energy Huntsville, and Paul Robinson, Porscha Porter and Jeffrey Watts, Huntsville Center's Energy Division. (Photo by Michael May)

Robinson and former Huntsville Center Commander Col. Robert Ruch actively coordinated with Energy Huntsville on the November 2015 Energy Summit, which featured participants and speakers from across the federal sector — to include Honorable Katherine Hammack, assistant secretary of the Army for installations, energy and environment, presenting the "Army Energy Program, Government and Industry State of Energy Markets and Opportunities." Jeffery Watts, chief of the division's Energy Planning Branch, who was also named in the award, delivered a presentation on Executive Order 13693 (EO13693) and how Huntsville Center programs build a vision for the future.

Huntsville Center "has been an important member of Energy Huntsville," said Jay W. Newkirk, Energy Huntsville Initiative's board chairman, in a recommendation letter to the award panel. "The organization's presence here

has been rewarding for our community... This collaborative relationship brings combined solutions to the Corps' constituents and supports them in satisfying their energy conservation mandates and at the same time supports the private sector energy companies growing in the energy sector."

One of the Energy Division's Strategy and Business Management Branch missions is to help other agencies and communities develop similar partnerships to achieve federal sustainability goals detailed in EO13693.

As a result of the Center's partnership with Energy Huntsville, other members from the city of Huntsville, NASA's Marshall Space Flight Center, the U.S. Army Materiel Command, and the U.S. Army Garrison Redstone Arsenal and its tenants are now also proactively sharing lessons learned and strategies for meeting federal sustainability requirements. ☞

## ESPC

Continued from Page 1

capital investment represents 78 percent of the Army total.

The Huntsville Center is considered the USACE Technical Center of Expertise for ESPC. Much of Huntsville Center's success can be attributed to having all members of the project delivery team co-located and its streamlined acquisition processes.

"In order to help the Army achieve the \$1 billion milestone, not one person could do it alone," said Jason Bray, Huntsville Center's ESPC program manager. "That is why at the Huntsville Center Corps of Engineers, we have program and project managers working with project delivery teams centrally located to strategically plan and execute Energy Savings Performance Contracts and Utility Energy Service Contracts.

"Having all members of the PDT close together assists with keeping the process efficient and effective," Bray said. "Customers come to Huntsville Center because they know that they will be provided with a team effort, and the partnership between the agency, the customer, and the energy service company or energy utility provider brings a holistic approach that both helps meet Army energy initiatives as well as a better quality of life for personnel manning the installations."

Projects such as White Sands Missile Range, Puerto Rico and Rock Island Arsenal, awarded by Huntsville Center, illustrate the value of using third-party financing to achieve energy goals.

At White Sands Missile Range, more than \$2 million in energy costs have already been saved through a 42-acre solar-array project that came online in December 2012, according to Randall Smidt, an engineer working for the Office of the Assistant Chief of Staff for Installation Management. The 4.465-megawatt solar photovoltaic system, completed in December 2012 guarantees energy savings of 35,358M British thermal units per year and reduces the range's energy consumption by 10 percent.

Two wind turbines at Fort Buchanan, Puerto Rico, are estimated to produce more than 5 percent of the installation's power while 21,824 solar photovoltaic panels there will produce about 5.5 megawatts of power, which is at least 60 percent of the post's current power demand at peak periods, Smidt said.

Not all ESPC contracts involve renewable-energy projects, though, Smidt said. Rock Island Arsenal, Illinois, has a \$39-million infrastructure-modernization project at its Joint Manufacturing and Technology Center. Honeywell is installing high-efficiency HVAC systems and natural-gas heating that will allow the tech center to disconnect from the garrison's coal-fired steam plant. New plating and paint systems at the tech center are also part of the upgrade.

The Army has a long history of using performance contracting that predates the President's challenge. Since 1992, the Army has been aggressively pursuing energy savings and currently has the largest energy savings performance contracting program in federal government. The Army's 624 individual projects, or task orders, represent private investment of more than \$2.5 billion.

These contracts are important to the Army, said Katherine Hammack, assistant secretary of the Army for installations, energy and environment. Federal agencies like the Army can leverage their utility budgets and take the steps essential to enhancing resiliency, achieving cost savings, and improving operations and maintenance, with no up-front costs to the government.

(Editor's note: This article includes information originally released by [Army News Service](#).) ☞



# Medical Command announces Practice Greenhealth 2016 award winners

By Elizabeth Keysar, PhD, Kathy Lahaye and retired Col. Karrie Fristoe

The U.S. Army Medical Command's (MEDCOM) sustainability program is pleased to announce the Practice Greenhealth (PGH) 2016 Environmental Excellence Award winners. Several Army military treatment facilities (MTFs) were recognized for their sustainability achievements and practices.

Winners include:

## Evans Army Community Hospital

**Emerald Award:** PGH Emerald Award recognizes hospitals that demonstrate their sustainability programs are further along the path to sustainability. Award determinations are made from top applicants for the Greenhealth Partner for Change Award.

## Evans Army Community Hospital and Moncrief Army Community Hospital

**Greening the Operating Room:** This award recognizes one top facility applicant for their outstanding efforts to reduce the environmental impact of the surgical environment.

## Madigan Army Medical Center

**Circle of Excellence — Waste:** The award recognizes hospitals for outstanding performance in the following



specific topic areas: Leadership, Waste, Chemicals, Greening the Operating Room, Food, Energy, Water, Climate, Green Building, and Environmentally Preferable Purchasing.

## Bassett Army Community Hospital

## Bayne-Jones Army Community Hospital

## Blanchfield Army Community Hospital

## Evans Army Community Hospital

## Madigan Army Medical Center

## Moncrief Army Community Hospital

**Partner for Change Award:** The PGH award recognizes health care facilities that have implemented a significant number of environmental programs and continuously improve and expand upon these programs on the path to sustainability.

## Brooke Army Medical Center

## Carl R. Darnall Army Medical Center

## Dwight D. Eisenhower Army Medical Center

## Fox Army Health Center

## Martin Army Community Hospital

## Munson Army Health Center

## Reynolds Army Community Hospital

## William Beaumont Army Medical Center

## Tripler Army Medical Center

**Partner Recognition:** PGH Partner Recognition Award recognizes health care facilities that have begun to work on environmental improvements.

PGH is the nation's leading membership and networking organization for institutions in the healthcare community that have made a commitment to sustainable, eco-friendly practices. In order to be recognized by PGH, MTFs must be actively working to reduce energy and water use, reduce generation and disposal of waste, implement sustainable procurement practices, and/or develop local and sustainable nutrition programs. The process includes a detailed application, the results of which MEDCOM Headquarters is also using for annual tracking of progress.

MEDCOM has an active membership in this organization, and many MTFs have competed and achieved the Environmental Excellence Awards in past years. The number of award recipients this year represents a near doubling in the number of sites achieving recognition

status over last year, a significant step forward for MEDCOM's sustainability program.

MEDCOM's sustainability program seeks to ensure continued access to the energy, water and other environmental resources necessary to accomplish the MEDCOM mission and vision today and in the future. Sustainability efforts improve the patient environment by reducing the use of hazardous materials and chemicals of concern in the design, construction and operation of MTFs.

It is MEDCOM policy to deliver sustainable healthcare with all activities striving to: 1) effectively and efficiently minimize all waste streams; 2) optimize lifecycle management of facilities and infrastructure; 3) sustain and enhance the well-being of patients and workforce; and 4) incorporate environmentally preferable purchasing and sustainability into procurement and contracting actions.

PGH is focused on the healthcare community, making its tools and expertise well-suited to the unique mission of MEDCOM. MEDCOM will also receive detailed analysis of all entries as PGH produces a database of industry sustainability information and provides MEDCOM HQ summary reports by location and region, as well as a command-level summary. MEDCOM MTFs will benchmark their progress against like institutions, and each year the "industry best practice" will continue to improve, keeping the targets relevant to MEDCOM as it seeks continual improvement. ☺

## Let there be light: Army Reserve honored for energy efficiency projects

By Jonelle Kimbrough

*Army Reserve Sustainability Programs*

The U.S. Army Reserve's 9th Mission Support Command (MSC) and 99th Regional Support Command (RSC) have garnered accolades from the United States Department of Energy (DOE) 2016 Interior Lighting Campaign (ILC) Awards.

Launched in May 2015 at the DOE Better Buildings Summit, the ILC is a recognition and guidance program designed to help facility owners and managers identify and implement savings opportunities from high-efficiency interior lighting solutions. Currently, the Army Reserve is among 49 participants in the program that includes the 9th MSC, 63rd RSC, 81st RSC, 88th RSC and 99th RSC.

This year, 13 agencies were recognized for outstanding performances in their applications of lighting systems. For their energy conservation and efficiency initiatives, both

the 9th MSC and 99th RSC received awards for Exemplary Federal Government Sector Sites.

The 9th MSC's award was for a lighting replacement project at the Army Reserve Center (ARC) in Guam. They replaced two-lamp (56 watt) and four-lamp (124 watt) fluorescent lights with 36-watt light emitting diodes (LEDs). The project reduced energy use by 62 percent and resulted in an estimated annual energy savings of 125,000 kilowatt hours (kWh), which could power 11 average homes in the United States.

As part of its Energy Savings Performance Contract (ESPC), the 99th RSC replaced three-lamp (86 watt) and four-lamp (108 watt) fluorescent lights with 46-watt and 61-watt LEDs at Technical Sergeant Vernon McGarity ARC in Coraopolis, Pennsylvania. "While many sites in the 99th's area of responsibility received LED upgrades under the ESPC, the McGarity ARC was one of the largest sites

to receive an upgrade and thus was a good candidate to nominate for the award," explained Justin Drigon, energy management coordinator for the 99th RSC. The project saved 184,000 kWh for a total energy reduction of 51 percent.

The efforts of all of the ILC's participants — which also include Target, The Cleveland Clinic and T-Mobile — have saved 130 million kWh and an impressive \$13.5 million in the program's first year, and the Army Reserve is proud to contribute.

"[The project] has reduced our energy consumption and ecological footprint as a whole," said Christina Vicari, energy coordinator for the 9th MSC. Vicari said the receipt of the award is very gratifying and demonstrates "that our efforts are making enough of an impact to be worthy of mention.

"The accumulation of these efforts starts to take effect

eventually," Vicari continued. "Sometimes, you do not see the benefit or the result of all your efforts with all the time and effort that goes into these projects. The award is confirmation that the team here is making a noticeable difference in the 9th MSC's overall energy strategy plan."

Drigon agreed. "The award means a lot for the team here," he said. "It is great to see that hard work and attention to detail pay off. [The award is] also something that the units at the McGarity ARC can take pride in as well. It is their facility, and I'm sure it is a great point of pride to know that it has been recognized."

Drigon went on to acknowledge the even broader impacts of the recognition. "I think the award will go a long way in helping the 99th RSC community, the Army Reserve community and even the active Army component understand the strides the Army Reserve is making in energy conservation," he said. ☺



# Combined heat, power plant expects to save Army \$4.4 million annually

By Yvonne Johnson  
APG News

The culmination of innovative thinking focused on conservation and sustainability was realized, July 19, during the official opening of the new Combined Heat and Power Plant on Aberdeen Proving Ground, Maryland, South (Edgewood).

The product of the Energy Saving Performance Contract project #8 replaces the capabilities of the local Waste-to-Energy plant and supports crucial Army research and development and chemical/biological facilities located on APG South.

APG Senior Commander Maj. Gen. Bruce T. Crawford, commander of the U.S. Army Communications-Electronics Command, said the passion and dedication that went into the project was impressive.

"It's not just a passion for saving money, it's not just a passion for energy, but a passion for things like innovation. As I've said many times, the thing that concerns me most is if we don't come together to collaborate, we miss opportunities."

When the steam supply contract between APG and Harford County, Maryland, ended in March, APG mission activities required an alternate solution, explained Installation Energy Manager Devon Rock. The CHP plant, an emerging new technology, will generate high-quality electricity and steam for Edgewood far exceeding traditional equipment in terms of energy efficiency and emission reductions, she added.

"One of the most critical roles of Army energy managers is to develop the most economic and sustainable solutions possible

to ensure mission readiness," she said. "The electricity and steam from this CHP plant will be used throughout the Edgewood area to provide state-of-the-art laboratories with specific temperature and humidity controls for Army research and development organizations such as the Edgewood Chemical and Biological Center; Public Health Center; and the Medical Research Institute of Chemical Defense."

Rock said the effort was achieved through collaborations with the U.S. Army Corps of Engineers, Engineering and Support Center, Huntsville and energy-saving partnerships with defense contractor Johnson Controls and Baltimore, Gas and Electric.

Representatives on hand from stakeholder organizations included Cecil Rodriguez, deputy administrator, Region 3 of the Environmental Protection Agency, and Kathleen Hogan, deputy assistant secretary for energy efficiency from the Office of Energy Efficiency and Renewable Energy.

Rodriguez said the system requires less fuel to produce the same amount of energy and that the partnership was the greatest example of resource management and attaining Net Zero consumption. Wayne Harbaugh, BGE director of Energy Efficiency presented a \$2.5 million check, representing long-term cost savings, to Crawford and CECOM Command Sgt. Maj. Matthew D. McCoy.

"A combined heat and power facility turning what might otherwise be waste-heat into power is innovative," Harbaugh said. "It's my honor to present Aberdeen Proving Ground with a check for \$2.5 million from the BGE Smart Energy Savers Program. Thank you for being a partner in energy innovation and for inspiring all of us to follow your lead."

The ceremony, which culminated with a ceremonial chain-cutting, was followed by tours of the plant and other facilities managed by the APG Garrison's Directorate of Public Works.

The CHP plant is located at Bldg. E-5126. The project fully replaces the capacity of the WTE plant and generates about 50 percent of the current Edgewood electricity load. This



During a ceremonial chain-cutting representing the opening of the new Combined Heat and Power Plant at Aberdeen Proving Ground, Maryland, July 19, Cecil Rodriguez, Environmental Protection Agency Region 3 deputy administrator, cuts one of seven chains with the assistance of Wayne Harbaugh, Baltimore Gas & Electric director of Energy Efficiency (left), as APG Senior Commander Maj. Gen. Bruce T. Crawford and Installation Energy Manager Devon Rock look on.

improves APG's energy security posture for electricity and steam and can be quantified by nearly \$4.4 million in electrical savings, annually.

"This is yet another great day in the storied history of this installation," Crawford said, adding that the overall savings will exceed \$25 million over the next several years. In addition, he said it speaks to Army Chief of Staff Gen. Mark A. Milley's #1 priority: Readiness.

The Army Readiness Guidance, Calendar Year 2016-17, under Army Readiness Priorities, Strategic Readiness, part 5 stipulates: "Improve our ability to project national power quickly by optimizing our Army's prepositioned stocks; implementing expeditionary mission command systems and concepts; training/evaluating unit, installation and Army-wide processes through Army Emergency Deployment Readiness Exercises and ensuring installation power projection platforms are well

maintained."

"A big part of the readiness conversation is Installation Readiness, and I think that this is a good example," Crawford said. "It's a model of what happens when you bring together like-minded individuals with like goals. Absolutely it's about readiness."

"The other takeaway is what happens next," he continued. "There are relationships at work here that did not exist. The real innovation is the long-term and enduring capabilities. I'm excited about the savings and the energy efficiency, but I'm more excited about the opportunities that now exist."

"Most importantly, when you look in the eyes of those who put this together, there's a sense of pride and accomplishment because they've created something that's going to benefit the great state of Maryland and the U.S. Army, but ultimately it's going to become a model that's going to benefit the nation." ❧



James Wyant, a contractor with Compass Commissioning and Design, provides a tour of the new Combined Heat and Power Plant at Aberdeen Proving Ground, Maryland, highlighting its features and improved efficiencies during the plant's "chain-cutting" ceremony July 19, 2016. The emerging technology will generate high-quality electricity and steam for the Edgewood Area of APG, saving the Army \$4.4 million annually. (Photos by Molly Blosser)