

ENGINEER UPDATE

U.S. ARMY CORPS OF ENGINEERS

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'This is a team effort.'



USACE joins federal response to Hurricane Sandy

Photo by Justin Ward, North Atlantic Division

USACE is working through FEMA with the state of New Jersey to assess damage caused by Hurricane Sandy. This is an aerial photo of destroyed homes near a wrecked bridge at Mantoloking, N.J.

By Bernard Tate
Headquarters

Hurricane Sandy was still spinning up the Atlantic Coast when the U.S. Army Corps of Engineers (USACE) mobilized to support the local and federal disaster response.

"Through the Federal Emergency Management Agency's (FEMA) National Response Framework, we are part of a larger team effort that extends through all levels of government – local, state and federal, as well as non-governmental partners and volunteers," wrote Lt. Gen. Thomas Bostick, USACE commander, in a "The Chief Sends" message to the field. "The team is committed to bringing all available resources to quickly support those affected and to reduce the long-term impacts of this devastating storm."

More than 900 employees from across the country were engaged to support
Continued on page 16



Photo by Patrick Bloodgood, North Atlantic Division

A contractor hooks up an outflow line from a pump that is dewatering the Hugh Carey Tunnel in New York City. FEMA gave USACE the assignment to dewater infrastructure in the city.

Insights

Pray for America's elected officials

By Col. Brent Causey
Chaplain, U.S. Army Corps of Engineers

During the presidential election this month, more and more conversations were about politics. As I have visited some of the districts recently, politics was one of the foremost topics, along with next year's budget and speculations on employment opportunities for continuous service.

As the conversations continued, invariably someone asked me who I was going to vote for. My answer was always the same -- I do not share my political views due to my position and possible influence.

However, there truly is a more important question that comes to mind both before and during the elections and during the term of those elected. Do I pray for our leaders of our country?

Yes, I do. As a man of faith, it is imperative that I not only follow the teachings of my faith but that I also put them into practice. Two scriptures from my faith tradition challenge me concerning my attitude and actions toward our government and elected officials.

Romans 13:1-3 states, "Let everyone be subject to the

governing authorities, for there is no authority except that which God has established. The authorities that exist have been established by God. Consequently, whoever rebels against the authority is rebelling against what God has instituted, and those who do so will bring judgment on themselves."

Now, this is not saying that in a democratic society we cannot have opinions that differ from those elected, nor does it say, come election time, we cannot vote our conscience. But it is saying that once an elected official is in office we should support them. There is always the question, though -- Do we support them in everything?

Well, just like the military and the enlisted oath of office, the orders must be lawful. In the same way, we are to support our elected official in all lawful and moral directions. As a U.S. citizen, this is not difficult since we have so many checks and balances. We also have lawful ways to defend our beliefs and practices, and prevent undue interference with an individual's moral conscience.

Now on the issue of prayer, do I have a responsibility to pray for those in authority over me? 1 Timothy 2:1-2a states, "I urge, then, first of all, that petitions, prayers, intercession and thanksgiving be made for all people, for

kings and all those in authority..."

So not only am I to pray for those who have the same views as me, I am to pray for those who have different views. I think this is what is meant about loving our neighbor. So whether I agree with our elected officials or not, I do have an obligation to pray for them.

Remember that this is a prayer for them, not against them. Can we separate the person from their actions? In my prayer life, I would say yes. These are people just like me. They have family, friends and loved ones who care deeply. Our elected officials are there because we voted them in as a majority. Whether my vote was for them or against them is immaterial on my responsibility to the teaching of my faith.

So I will not tell you who I voted for, but I will tell you the most important answer to my question. Whether an elected official is Republican, Democrat, or Independent, whether I voted for him or not, I will pray for him, and continue to do so.

(The opinions in this article are those of the writer and do not reflect the official policy or position of the U.S. Army Corps of Engineers, the Department of the Army, the Department of Defense, or the U.S. government.)

Commentary

Army Values are for civilians, too

By John Rodgers
Fort Worth District

The Army Values are part of your life and work. Yes, you're a civilian, but you probably work only a few steps away from a Soldier. Many of us have actually deployed to Iraq and Afghanistan and worked alongside Soldiers, wearing the same uniforms they do.

You ask, "Okay, so what? How do I live the Army values in this cubicle?" Read on.

If you need a reminder about the importance of the Army values, you can see them on your annual job performance form. Yes, your TAPES show how your seemingly mundane job can be connected to these high standards.

I did some research by e-mailing my coworkers and asking for their perspectives on the Army Values. None of my coworkers wanted to be quoted by name in this commentary, but what you see here is not just my opinion.

Loyalty

Many people think of this value in regard to keeping loyalty to the U.S. and its Constitution. But we all took the oath of public service when we started our civil service career.

"Loyalty should go up and down the chain of command," a coworker wrote. "Those in leadership positions should be loyal and provide overhead cover for their subordinates for their efforts in accomplishing the mission, maintaining morale and controlling the operational tempo. These three factors maintain a positive work environment and help with retention. Subordinates should remain loyal to their leaders and units in order to support the mission; but if the leadership is not doing its part, the subordinate will lose their sense of loyalty to the organization."

Loyalty is easy except when you think the organization has let you down. Stay with it during the good times and the bad. Long tenure can give you a sense of pride, but only if you choose to be loyal.

Duty

Loyalty is an underlying principle; duty is what you do every day. Check your job description -- yep, that is your duty. It is your responsibility and no one else's. When I watched movies or TV shows about Army life, no one really liked pulling guard duty or the dreaded KP (Kitchen Patrol), but it needed to be done and done right.

"Duty is the sense of pride in accomplishing the mission as a team, but this requires recognition from the leadership," a coworker wrote. "Workload management is key to insuring personnel have a sense of accomplishment, but providing balance to subordinates is critical. Supporting the goals and objectives of the organization is paramount, but requires management support of their subordinates."

"As a military veteran, I fully accept the duty and responsibility of making sure that my brothers and sisters in services have access to every tool needed to fulfill

their mission abroad and Stateside," another coworker wrote.

Respect

Treat people with civility. Respect means treating others as they should be treated. Treating others with respect inspires a climate of mutual cooperation and good will. Being treated with respect instills a sense of pride and self-esteem that drives a willingness to collaborate and contribute to the common good of the organization. Respect given returns respect. Respect the position, if not the person, but that does not mean you have to put up with disrespect from a superior.

Selfless Service

There are times when sacrifice may be necessary -- putting something else before your own interests. When we have to travel for work, it sometimes means missed dinners with loved ones, not tucking your child in at night, or missed little

Continued on next page

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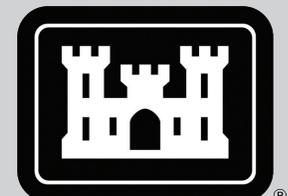
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'Engineer Update' final edition

'Don't cry because it's over. Smile because it happened.'

"Don't cry because it's over. Smile because it happened." So said Dr. Seuss.

After 35 years and more than 400 editions, this is the final hard-copy issue of the *Engineer Update*. The decision to cease publication was neither easy nor was it made lightly. But the same forces that challenge civilian newspapers are also challenging and changing military and federal newspapers, with added factors unique to federal service.

Chief among these are the constrained economic times. It costs thousands of dollars a year to produce the *Engineer Update*; we are doing our part to conserve resources, both paper and money. And we are not unique; this is happening all over the Department of Defense. Printed flagship magazines such as *Soldiers*, *All Hands*, *Marines*, and *Airman* have all been eliminated in hard-copy form and now exist only on-line.

The third main reason for ending the hard-copy edition of the *Engineer Update* is the power of the Internet, and the Corps' increasing presence there. This year, USACE began transitioning to the DoD web platform, the American Forces Public Information Management System (AFPIMS). Early this year Headquarters was the first to place its homepage on AFPIMS, and each district and division is following suit with the goal of completing the transition by the end of 2013.

From its beginning 35 years ago, the *Engineer Update* has existed to collect news and feature articles from throughout USACE and distribute them to our workforce and the world beyond. But with AFPIMS, journalists in USACE districts, divisions and labs can post articles and news directly to their own websites and the USACE homepage. With a news resource that can be updated quickly and easily accessed by anyone with a computer, there is much less need for a hard-copy publication like *Engineer Update*.

Despite these reasons, the decision to cease publication was not easy. For decades, the *Engineer Update* has been part of the glue that helped bind together the U.S. Army Corps of Engineers and its people all over the world.

The first edition of the *Engineer Update* was published in January 1977. On the front page, Lt. Gen. John Mor-



Photo by F.T. Eyre, Headquarters

A photo of the first "Engineer Update" front page shows how the publication has changed since 1977.

ris, USACE commander, wrote, "During my travels as Chief of Engineers, I have become aware of the vital need for better communication among members of the Army Corps of Engineers. As men and women serving with the Corps, whether outside of our own offices, shops or divisions, we need command to supporting the national defense and ensuring the planning, engineering and construction management expertise necessary to support our civil works program and to meet other priority needs of our Nation."

"Many formal vehicles exist for exchange of information between organizational elements," Morris continued. "There is a need however, for a more informal medium that will allow better people-to-people communication. This pilot edition of ENGINEER UPDATE has been de-

signed to meet that need. It will focus on our people and the things they do."

Since 1977, the editors of the *Engineer Update* have faithfully followed Lt. Gen. Morris' marching orders. The U.S. Army Corps of Engineers is a community of nearly 36,000. In any American town that size, there are a lot of people leading interesting lives and the *Engineer Update* has chronicled their story. Through peace and war and disaster, we have followed the exploits of USACE people as they went in harm's way to fight the Cold War, Operation Just Cause, Desert Storm and the global war on terror. We have told their stories as they faced wildfires, earthquakes, hurricanes, tornadoes, floods and terrorist attacks.

In the pages of the *Engineer Update*, USACE people have spanned rivers, aided Third World nations, built military bases, designed monuments, pushed the frontiers of science, kept harbors open, shored up the nation's infrastructure, aided disaster victims, and kept material flowing through the arteries of commerce.

Looking back on the past 35 years, we've learned about deployments and programs and construction projects, organ transplants, inventors, car enthusiasts, martial arts experts and adoptive parents. We remember our people who saved lives, built homes, ran races, visited exotic lands, rescued wildlife and pets, played music and created art.

And I wrote hardly any of those stories. Despite the fact that I have been the editor of the *Engineer Update* for about 20 years and produced more than 200 editions, only a tiny fraction of the content was mine. I believe that some of the most talented journalists and writers in America work for Uncle Sam, and the *Engineer Update* is proof. My colleagues around the world have provided the articles for this publication, and behind them are the thousands of people who had the generosity of spirit to sit down with those journalists and tell their stories.

Without them, the *Engineer Update* would have never existed, and we all owe them a debt of gratitude.

I am honored to have brought you, through the *Engineer Update*, all of these wonderful stories. I am smiling because it happened.

Farewell, *Engineer Update*.

Army Values

Continued from previous page league ballgames.

My son once asked me, "Why are you always checking your Blackberry?"

"I have a responsibility," I replied.

"Selfless Service: The ability to place the needs of subordinates above your own," a coworker wrote. "The ability to mentor and develop personnel to understand the roles and responsibilities of the next higher in the chain of command. This requires management to assume a coaching style of leadership so folks will assume more responsibility without the fear of reprisal."

Honor

I found this one difficult to describe.

Define it by its opposite -- shame. I once heard someone describe it this way -- "Do not do or say anything that you would not want published in the Washington Post." (Obviously, they were from inside the DC Beltway). We are faced with ethical dilemmas all the time. Tell the truth. Do not fabricate a cover up, obfuscate or distort the truth. Do not break the rules.

Integrity

Not to be confused with honor. Do the right thing for the right reasons. No matter how inviting it is to take shortcuts, don't. In our work, we deal with laws and regulations all the time -- National Environmental Protection Act, Federal

Acquisition Regulation, Small Business Act, Equal Employment Opportunity Act, Competition in Contracting Act, Davis Bacon Act, Anti-Deficiency Act, Clean Water Act, and many more. If there is a directive, policy, regulation or law, follow it. Follow it to the letter and in the right spirit.

Personal Courage

I once ran the annual Army Ten Miler race. My training encompassed a smart diet and running on a schedule, in short, pushing myself to accomplish my goal of finishing the race with no paramedics.

But when race day arrived, I found myself running next to wounded warriors

who were running on one or both artificial legs or cycling with arms only, which put my little training program to shame.

There are other examples of personal courage in our line of work. One is telling the general or the boss that even he or she has to follow that pesky regulation. Another is the many USACE civilians who have volunteered to serve in Iraq or Afghanistan, some of whom have come under fire.

So it is clear that the Army Values are not just for the Soldiers. They are values that we army employees can live by as well, and must live by if we are to pursue our federal careers with honor and integrity.

Bostick sets high bar at leaders' conference

By Bernard Tate
Headquarters

About 250 senior leaders of the U.S. Army Corps of Engineers and invited partners and stakeholders gathered Aug. 6-10 in Little Rock, Ark., for the USACE 2012 Strategic Leaders' Conference (SLC).

"I think we accomplished a lot during this SLC, but that's what we set out to do," said Alex Dornstauder, chief of the Strategy and Integration Office. "In his opening comments, Lt. Gen. Thomas Bostick, our commanding general, set the bar high. By the end of the conference he expected a common vision for USACE 2020, updated vision and mission statements, and an updated campaign plan with actions for fiscal year 2013 through 2020. And we accomplished that."

During this SLC, invited partners and stakeholders were critical participants during all aspects of the conference. "This is not the first time that we have invited stakeholders and partners to our SLC," Dornstauder said.



Photo by F.T. Eyre, Headquarters

Lt. Gen. Thomas Bostick, USACE commander, addresses the Strategic Leaders' Conference.

"This year, however, we wanted to focus on hearing their concerns and guidance in developing our strategic vision. In this, we were very successful."

About 25 partners and stakeholders were invited from federal and civilian agencies, including Katharine Ham-

mack, Assistant Secretary of the Army (Installations, Energy, and Environment), and representatives from Office of the Deputy Undersecretary of Defense (Installations & Environment), U.S. Army Environmental Command, Department of Transportation, Dredging Contractors of America, American Society of Civil Engineers, Waterways Council, Inc., Western States Water Council, Gulf Intracoastal Canal Association, Texas Water Development Board, and the Association of State Floodplain Managers.

At the end of the SLC, the conferees delivered recommendations for a revised Corps Vision statement, revised Commander's Priorities, and a new Campaign Plan. (See sidebar.) "These are emerging, that is, they are living documents that are still being updated," said William Guillaume, chief of Strategic Management and Planning.

"Thanks to everyone's participation and input, we left the Strategic Leaders' Conference with an agreed-upon set of actions, across the agency, that we're going to accomplish in the next few years," Dornstauder said. "It takes great teamwork to do something that impressive."

USACE has new priorities & direction

USACE Emerging Vision

Engineering solutions for the nation.

USACE Emerging Mission

Deliver vital engineering solutions, in collaboration with our partners, to secure our nation, energize our economy, and reduce our risk from disaster.

USACE Emerging Priorities

Military Focus: Defend and protect our nation.

- Support the Central Command commander and ambassador in winning the current fight in Afghanistan, and supporting the combatant commanders' security activities around the globe in support of the strategic direction from the Chairman of the Joint Chiefs of Staff.
- Supporting the Army and the nation in achieving our energy security and sustainability goals -- reducing energy dependence, increasing energy efficiency, and adopting renewable and alternative energy sources.
- Developing a USACE 2020 Vision and Implementation Plan by the end of 2012 that nests with (complements) Army 2020.
- Strengthening and improving teamwork in the joint engineer force to achieve Joint Force 2020.

Civil Works Focus: Transform civil works to deliver the best possible products and services to the nation by:

- Modernizing the project planning process.
- Working with the administration, Congress and our internal team to enhance and refine the budget development process through a systems-oriented watershed approach, collaboration and innovative financing.
- Evaluating the current and required portfolio of water resources projects through a smart infrastructure strategy.
- Improving methods of delivery to produce and deliver critical products and services on schedule.
- Engaging other governmental and non-governmental partners in working to-

ward national, regional and local priorities.
Strategic Focus: Prepare the U.S. Army Corps of Engineers for the future

- Building strong people and teams through leader development and talent management.
- Streamlining USACE business and governance processes.
- Partnering with the installation management community at all echelons to deliver and maintain enduring installations and contingency basing.
- Improving strategic engagement to build and maintain trust and understanding with customers and teammates.
- Supporting the Engineer Regiment to ensure 1) the Army learns the proper lessons from war; 2) the Army properly designs, shapes, prepares and organizes the Engineer Regiment to meet future requirements.
- Enhancing interagency disaster response and recovery capability.
- Ensuring we can maintain and advance DoD and Army critical enabling technologies.
- Improving interagency and international support.

Campaign Plan

Goal 1

Deliver support to the nation that prevents conflict, shapes the strategic environment, wins campaigns through engagement, and is responsive to disasters.

Objective 1a – Deliver support to combatant commands.

Objective 1b – Deliver support to natural or man-made disasters.

Objective 1c – Optimize support to the Engineer Regiment.

Objective 1d – Improve interagency and international support.

Goal 2

Deliver enduring and essential water resource solutions

utilizing effective transformation strategies.

Objective 2a – Transform the civil works program to increase its value to the nation.

Objective 2b – Implement collaborative and integrated approaches to achieve sustainable water resource solutions.

Objective 2c – Implement streamlined and transparent regulatory processes to sustain aquatic resources.

Objective 2d – Provide reliable, resilient and sustainable infrastructure systems.

Goal 3

Deliver innovative, resilient sustainable solutions to DoD and the nation.

Objective 3a – Deliver services and provide infrastructure to enable global operations.

Objective 3b – Provide energy-efficient and sustainable solutions for military communities and USACE facilities and activities.

Objective 3c – Provide sustainable and energy-efficient solutions for contingency operations.

Objective 3d – Identify and implement measures to foster innovation, knowledge sharing and critical technology transfer initiatives.

Goal 4

Build great people and strong teams to sustain a diverse culture of collaboration, innovation and participation to shape and deliver strategic 2020 solutions.

Objective 4a – Strengthen workforce technology and leadership competencies in order to operate and win in a global environment.

Objective 4b – Protect and build public trust through strategic engagement and communication.

Objective 4c – Mitigate business risk. Streamline, standardize, automate and improve business, acquisition and governance processes.

Objective 4d – Transform the workplace to include work-life flexibility and support to families to meet the workforce shaping challenges of 2020.

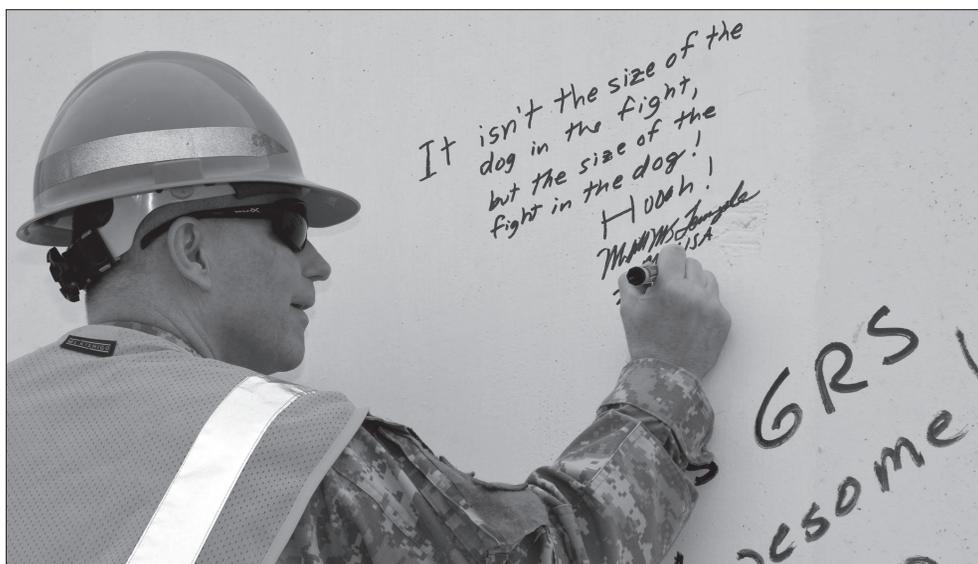
MG Temple retires after 37 years

Maj. Gen. Merdith W.B. (Bo) Temple, deputy commanding general of the U.S. Army Corps of Engineers (USACE), retired from the U.S. Army on Aug. 31 after serving the United States for more than 37 years.

Temple served as deputy commanding general since January 2010. Among his accomplishments, Temple served the longest stint as acting commander in the history of USACE June 2011 to May 2012, between the retirement of Lt. Gen. Robert L. Van Antwerp and the assumption of command by Lt. Gen. Thomas P. Bostick as the new commanding general and chief of engineers.

"I'm happy and proud to have served the Army and the nation with so many wonderful Soldiers and civilians and in so many different locations," Temple said during his retirement ceremony.

Temple is a native of Richmond, Va., and a 1971 graduate of that city's Thomas Jefferson High School. He graduated from the Virginia Military Institute with a bachelor's degree in civil engineering in 1975, and was commissioned a lieutenant



U.S. Army Corps of Engineers Photo

Maj. Gen. Merdith W.B. "Bo" Temple, deputy commander of the U.S. Army Corps of Engineers, signs a protective wall with a personal motto at the Corps' Gulf Region South compound near Basra, Iraq, in October, 2009.

in the Engineer Branch of the U.S. Army. He also holds a master's degree in civil engineering from Texas A&M University, and is a graduate of the U.S. Army Command and General Staff College and the U.S. Army War College.

Temple has had other assignments with

USACE. He was deputy commanding general for Civil Works and Emergency Operations and deputy commanding general for Military and International Operations (both at USACE Headquarters in Washington, D.C.), commander of North Atlantic Division in New York City, and

commander of Transatlantic Programs Center in Winchester, Va.

Other Army assignments include theater engineer (C7), Combined Joint Task Force Seven in Iraq; assistant chief of staff, Operations (G3), XVIII Airborne Corps; and he commanded the 20th Engineer Brigade (Combat) (Airborne Corps) and the 307th Engineer Battalion (Combat) (Airborne).

Temple's achievements and awards include the Distinguished Service Medal, Legion of Merit (two oak leaf clusters), the Bronze Star Medal (two oak leaf clusters), Joint Service Commendation Medal, Defense Meritorious Medal and other service and unit awards. He holds the Master Parachutist badge. In 2010, Engineering News Record magazine recognized Temple as one of its top 25 newsmakers.

The U.S. Army Corps of Engineers is comprised of about 37,000 civilian and military employees, who provide vital public engineering services in peace and war to strengthen our nation's security, energize the economy and reduce risks from disasters.

SWD, truckers take water safety on the road

By **Martie Cencki**
Southwestern Division

The U.S. Army Corps of Engineers, in partnership with National Carriers Truck Lines, Inc., took their water safety message on the road -- literally. In an Aug. 15 meeting at the company's Irving, Texas, facility, Brig. Gen. Thomas Kula, commander of Southwestern Division, joined with Jim Franck, president of National Carriers, Inc., to place a water safety decal on the first of the company's 600 tractor-trailers that will carry the message nationwide, as well as into Canada and Mexico.

The decal, which depicts a young child wearing a life jacket with the caption "Keep them smiling. Keep them safe," is a strong reminder to safeguard children around the water.

"Life jackets make a difference, especially for kids," Kula said. "As the nation's largest provider of federal recreation, with more than 370 million visitors at USACE projects annually, the Corps provides great value to the nation through these many facilities. In Southwestern Division alone, we are the second largest provider of recreation in USACE, hosting 68 million visitors at our 88 lakes with hundreds of recreation areas in a six-state region.

"We want folks to enjoy our lakes and



U.S. Army Corps of Engineers Photo

Brig. Gen. Thomas Kula, SWD commander, (center) joins with Jim Franck, president of National Carriers, Inc., (right) and Johnny Branstine, maintenance director, to place a water safety sign on one of the 900 tractor-trailers owned by the company.

do it safely," Kula added. "We're working with partners such as National Carriers to spread the word about water safety, with a goal of reducing public fatalities on USACE lakes by 50 percent. With the help of Jim Franck and his company, that message will travel every one of the millions of miles per year that his trucks put on our nation's roads."

National Carriers is a diversified motor carrier servicing all 48 states in the continental U.S. with transportation offerings that include refrigerated, livestock and logistics services. The National Carriers Refrigerated fleet consists of nearly 500 power units and more than 1,000 trailers, and those units alone average 800,000 driving miles per week.

Franck agreed to not only have the decals placed on 600 tractor-trailers, but also to incur all costs to apply the decals to their trailers as an undertaking in the public interest.

"I remember boating on USACE lakes in Iowa even as a child and I know the many hours of relaxation and recreation they provide our communities," Franck said. "If we can help in this way to spread the word about water safety, it is a winning situation for all of us."

The movement from concept to completion is an example of the power of partnerships, according to Alan Bland who came up with the idea. Bland is a USACE park ranger from Beaver Lake in Little Rock District. He discussed the idea with Michael Boyce from the Northwestern Arkansas U. S. Coast Guard Auxiliary, with whom Bland frequently works on water safety. Using Boyce's relationships with the trucking industry, Bland linked up with National Carriers, Inc., and worked the details of the partnership for more than a year.

"I'm happy to see this project come to completion," Bland said. "One life saved is worth all the work we put in to our water safety programs many times over. I'm glad to have had a part in this undertaking."

USACE revamps environmental principles

By Candice Walters
Headquarters

For 10 years, the U.S. Army Corps of Engineers has lived by its Environmental Operating Principles.

The seven principles, often called the Corps' "Green Ethics," have encouraged USACE employees to consider the environment in everything they do. They have served USACE well, setting the direction the Corps would take to achieve greater synergy between sustainability and the execution of its projects and programs.

But during these 10 years, the Nation's resource challenges and priorities have evolved, focusing more on sustainability and the need to conserve water, electricity, fuel and other precious resources. USACE, as well as the nation as a whole, has learned more about the impacts of global factors such as climate and sea level change.

With those challenges and priorities in mind, USACE has "reinvigorated" the Environmental Operating Principles, which Chief of Engineers Lt. Gen. Thomas Bostick, the USACE commander, unveiled Aug. 8 at the Strategic Leaders Conference

in Little Rock, Ark.

The "reinvigorated" principles are more concise, have a clearer format and include an increased emphasis on the proactive nature of each principle.

"The Corps of Engineers level of environmental commitment must expand and intensify," Bostick said. "As with other Corps guidance and principles, it was necessary to revise the EOPs periodically to reinforce their value to how the Corps operates. The reinvigorated principles provide direction on how the Corps protects and restores natural systems and the environment while encouraging productive, sustainable economic development that improve the quality of life for everyone."

The reinvigorated principles are:

- Foster sustainability as a way of life throughout the organization.
- Proactively consider environmental consequences of all Corps activities and act accordingly.
- Create mutually supporting economic and environmentally sustainable solutions.
- Continue to meet our corporate responsibility and accountability under

the law for activities undertaken by the Corps, which may impact human and natural environments.

- Consider the environment in employing a risk management and systems approach throughout life cycles of projects and programs.
- Leverage scientific, economic and social knowledge to understand the environmental context and effects of Corps actions in a collaborative manner.
- Employ an open, transparent process that respects views of individuals and groups interested in Corps activities.

When the principles were first introduced in 2002, "we were one of the first federal agencies with Environmental Operating Principles," said Maj. Gen. Michael Walsh, deputy commanding general for Civil and Emergency Operations. "They opened the door for us to think about other criteria to measure projects against beyond just the economic cost benefit ratio, to look at other perspectives.

"Throughout the years, though, many USACE employees became a bit complacent when it came to the principles,"

Walsh said. "The mindset became 'OK, we took care of that' and then they moved on," he said. It was time to take another look, to reinvigorate them and remind everyone of their importance and applicability. Besides, it's something that people expect us to be doing."

Helping to reinvigorate the principles were members of the Chief of Engineers Environmental Advisory Board, who took on the project last winter. "We need to thank the EAB for its help with this," Walsh said. "It only took about six months to redo the principles, which is very good."

As part of the reinvigoration process, plans are under way to ensure that USACE training courses include a small module on the principles, metrics that include long-term goals and indicators of success are being developed, and the principles are being included in any new or revised engineer regulations, engineer pamphlets, engineer manuals and other guidance.

More information about the reinvigorated Environmental Operating Principles can be found at www.usace.army.mil/Missions/Environmental/EnvironmentalOperatingPrinciples

Engineering the future

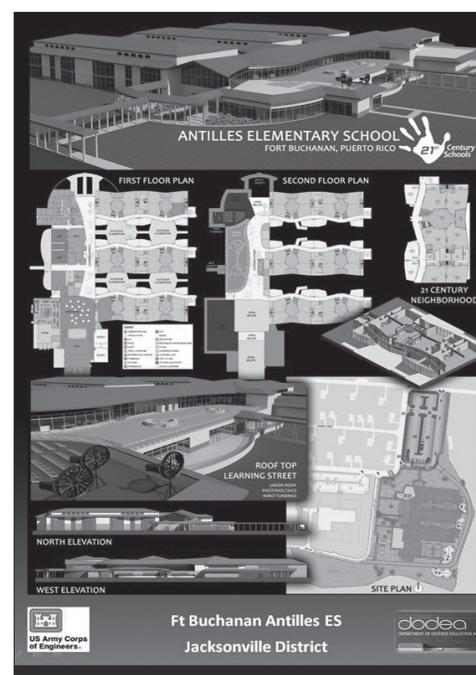
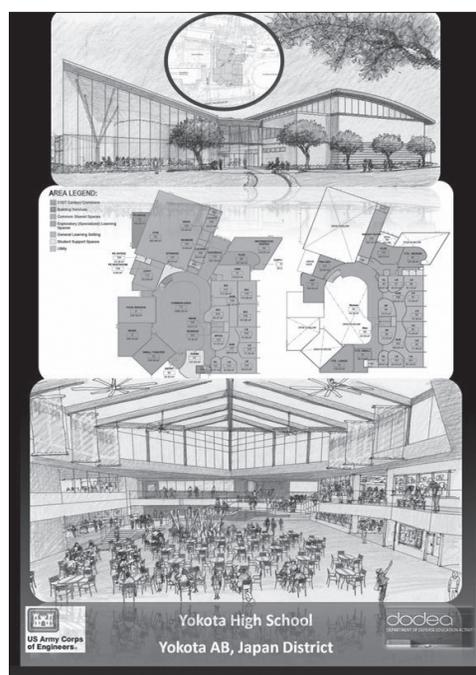
USACE designs, builds Uncle Sam's 21st century schools

By Raini Brunson
Headquarters

For years the U.S. Army Corps of Engineers has collaborated with the Department of Defense Education Activity (DoDEA) on designing education facilities. As studies emerged showing that evidence-based design measurably improves students' academic performance, DoDEA approached USACE to help them develop 21st century schools that would foster more productive learning environments.

The 21st Century Education Initiative is rooted in the philosophy that a child learns best at his or her own pace. Evidence-based design fosters the 21st century concept as desired behaviors in students, educators and supporting personnel are more easily achieved if their environment reinforces and facilitates those behaviors.

"The 21st century school really is the framework for the type of environment that we want children to learn in," said Robert Slockbower, former director of Military Programs at USACE Headquarters. "When you develop a 21st century



Graphics courtesy of Gerry Boyle, USACE

These are sample designs of construction projects for DoDEA. Antilles Elementary School (left) at Fort Buchanan, Puerto Rico, features the Roof Top Learning Street that provides access to the outdoors. Yokota High School at Yokota Air Base, Japan, has an abundance of windows to let in natural light.

school you don't start with the question, 'How do I build the school?' You start

with the question, 'How do I teach in the 21st century?'"

Although the 21st century education concept had been around for some time, in 2011 the concept received momentum with the release of the National Defense Authorization Act (NDAA). The NDAA stated that best practices and design innovations in public and private schools are to be incorporated into the design of DoDEA schools, and that processes should ensure that facility design can adopt and respond to emerging requirements related to dynamic curricula through teaching techniques, and should also incorporate feedback from teachers, parents, military community representatives and local school administrators. The NDAA established the criteria that schools should be built with flexible capabilities so that the learning environment meets the needs of every student.

Technology is one way to introduce flexibility. Other examples of evidence-based design are increasing use of natural lighting through windows and skylights, designing the acoustics so that external noise is reduced, and using adjustable furniture. Studies have connected natural

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LARC crew rescues three swimmers

By Marilyn Phipps

Engineering Research and Development Center

After a day of gathering coastal survey information, it was time to wash the LARC (Lighter, Amphibious, Re-supply, Cargo) amphibious truck and head back to the office, then home for the evening.

At least that was Mark Preisser's thought before a riptide changed the plan.

The Coastal and Hydraulics Laboratory employee heard the cries of someone in trouble coming from the beach at the Field Research Facility in Duck, N.C.

"I ran over the dune to see three young men, probably 50 yards out in the ocean, crying and waving desperately for help," he said. "The moment I realized those young men were in trouble, my adrenaline kicked in. There was not a question in my mind, or time to think much about what I was about to do. The look of those boys in panic and their desperate yelling for help stirred me to do what I did."

Still wearing his foul weather gear from being on the boat, Preisser quickly started stripping down to his blue jeans. Another young man, Sam (no last name given), on the beach realized the situation and entered the water the same time as the civil engineering technician.

"Of the three in trouble, one was swimming back toward the beach," Preisser said. "He made it back to land on his own."

Sam, knowing that Preisser was behind him, swam to the distressed swimmer that was furthest from the beach.

Preisser, a former competitive swimmer, could hear cries of "Help me!" as he approached the other panicked young man. He calmly assured the scared swimmer that he would be okay and instructed him to "Turn over and float on your back; I am going to put my arm under yours."

The young man replied that he didn't float but trusted his rescuer and turned over as instructed, although he



Photos courtesy of the Coastal and Hydraulics Laboratory

(Left) The Surf Rescue squad board the Coastal and Hydraulics Laboratory amphibious truck after civil engineering technician Mark Preisser (right) saved three swimmers from rip current in the Atlantic Ocean near Duck, N.C.

could not relax.

Preisser realized they were making little headway against the rip current, but remaining calm, told the tired swimmer, "We'll use the waves to help us, so kick hard when the waves approach and we'll ride the waves in."

His strategy worked and soon they were able to touch bottom and walk back onto the beach.

Preisser then looked at the Atlantic Ocean to check on the other rescue. Sam had reached the other young man, but they were still about 65 yards from shore. Preisser decided that the best chance of a rescue was to take the LARC back out and ran over the dune to the vehicle.

"I started it up," Preisser said. "No one was around to assist me, so I drove it over the dune and into the ocean."

The two swimmers were now under the 1,840-foot-long research pier, trying to find a place to hold on until rescued. Having just completed a hydrographic survey of the beach and near shore a few hours earlier, Preisser knew the current would prevent the LARC from crashing into

the pier, so he pulled alongside just 10 yards away and killed the prop.

He then motioned the swimmers to come toward the vessel. Sam boarded first, and together they pulled the exhausted young swimmer out of the water. Preisser then quickly headed the LARC back to the beach.

Once on dry land, Preisser checked on his passengers. The rescued swimmer mumbled a few words but was "too weak to even lift his head," Preisser said. A few minutes after landing on the beach, the emergency rescue squad arrived and transported the exhausted swimmer to the hospital.

The ocean rescue lifeguards informed Preisser that the young man would be okay and credited him with saving his life.

"I don't feel like a hero," Preisser said. "I happened to be in the right place at the right time to help some people out. I believe almost everybody would have done what I did."

DoDEA

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lighting to improved learning in reading and math, reduction of external noise to improve concentration, and adjustable furniture to good posture, all of which improve academic performance.

According to Russell Roberts, chief of the Logistics Division at DoDEA Headquarters, we need to build for the future by looking ahead at the available tools. That way we can build flexible infrastructures. A facility's infrastructure should have adaptable capacity and bandwidth so that it can accommodate any tool that a district, teacher or DoDEA feels is beneficial to students.

In April 2011, USACE worked with DoDEA to develop three symposiums to establish the framework supporting the 21st century education concept. The first symposium solicited external feedback from leaders in the nation's education, information technology, architectural and

engineering arenas. The second symposium solicited internal feedback from DoDEA's students, teachers and other personnel at the division and district levels.

"What I have seen with USACE for 20-something years is that they really are customer-oriented," Roberts said. "The 21st century concept is education driven, not facility driven. The Corps of Engineers was absolutely open about trying to find a solution for us."

The solution came during the third symposium, which brought together the external and internal feedback from the previous symposiums. This collective feedback was used to establish the education specifications that would later become the basis for the designs of the 21st century schools.

In December 2008, USACE established a DoDEA Design Center in Norfolk District. The center's primary mission was to guide the designs of the DoDEA military construction projects. With the emer-

gence of the 21st Century Education Initiative, project engineers at the center took on the mission of developing new facility education specifications for the 21st century schools.

DoDEA construction projects are "primarily new construction with some additions and renovations," said Gerry Boyle, DoDEA national program manager for USACE.

All of the construction focuses on elementary, middle and high schools with locations in the Pacific, Europe and several U.S. installations. Some of the major, multi-million dollar projects are construction of the Antilles Elementary School at Fort Buchanan in Puerto Rico; the renovation of West Point Middle School at the U.S. Military Academy at West Point, N.Y., and construction of elementary, middle and high schools at the Supreme Headquarters Allied Powers Europe in Belgium.

Evidence of the 21st century education concept can be found throughout the designs of these schools. The designs have been patterned from some of the most successful schools in the U.S. An abundance of windows and multiple skylights let in large amounts of natural light. Wireless capabilities and other technologies make the infrastructure flexible to meet current and future needs. Even what may seem like the most trivial of details, the size of a janitor's closet, has been incorporated into the overall school designs.

USACE's design specifications have helped standardize square footage and functional configurations, and are used to communicate with educators. Design improvements based on lessons learned have also been captured. In providing its 21st century solution for DoDEA schools, USACE's designs will serve as a model for public and private school systems nationwide.

New Orleans District prepared for Isaac

By Lee Mueller
New Orleans District

After taking a meandering course toward Louisiana, Hurricane Isaac first made landfall Aug. 28 at the mouth of the Mississippi River, and again for a second time Aug. 29 at Port Fourchon. While only a Category 1 storm on the Saffir-Simpson scale, Isaac's size and winds created substantial storm surge in the Lake Borgne and Lake Pontchartrain basins, and the storm deposited an enormous amount of rainfall on the region as it moved slowly inland.

Hurricane Isaac tested all aspects of the greater New Orleans Hurricane and Storm Damage Risk Reduction System (HSDRRS), from interior drainage to storm surge risk reduction. Seven years to the day after Hurricane Katrina, the newly-built, \$14.6 billion risk reduction system performed as designed. For the first time, all major closure structures in the system were closed and all associated pumps were operated during a tropical storm event, including the Inner Harbor Navigation Canal (IHNC)-Lake Borgne Surge Barrier, the West Closure Complex, the Seabrook Complex and the Bayou Segnette Complex.

Preparation

Several days before Hurricane Isaac's landfall, New Orleans District began preparing for the storm's arrival with a focus on system readiness and personnel preparation. The HSDRRS required several construction closures to close gaps in the system. The two major closures were at Highway 23 in Plaquemines Parish near Oakville, La., and at Highway 90 near the St. Charles and Jefferson Parish line.

These highways are major evacuation routes for communities on the west bank of the Mississippi River, and the closures required close coordination with the levee districts, parish officials and Louisiana's Department of Transportation and Development to maximize the evacuation window while allowing enough time to safely install the construction closures before Hurricane Isaac.

The New Orleans District Emergency Operation Center expanded operations to a round-the-clock schedule, and teammates responsible for operating the many closure structures and pump stations throughout the system deployed to their stations. Local government liaison people deployed to parish, state and levee district emergency operation centers to ensure open channels of communication between USACE and its partners, as well as to provide "eyes and ears on the ground" information throughout the storm.

Isaac lingers

On Aug. 28, as water levels began rising in the Lake Borgne area, the team prepared to close the IHNC-Lake Borgne Surge Barrier floodgates for the first time in a storm. With the barge gate already closed, the team focused on the Bayou Bienvenue lift gate and the Gulf Intracoastal Waterway sector gate. Before closure, the team coordinated with the Coast Guard and navigation interests to ensure that all traffic was able to enter or exit the system as necessary to prepare for the storm.

During Isaac's prolonged onslaught, the IHNC Surge Barrier performed as designed, preventing 13.6 feet of



Photos courtesy of New Orleans District

(Left) Jo Ellen Darcy, Assistance Secretary of the Army (Civil Works), and Lt. Gen. Thomas Bostick, USACE commander, (center) joined Col. Edward Fleming, New Orleans District commander, (left) to discuss performance of the HSDRRS during Hurricane Isaac. (Right) The gates at the 17th St. Outfall Canal Interim Closure Structure were closed against rising water levels in Lake Pontchartrain, and pumps were used to evacuate interior drainage water from behind the gates.

storm surge from entering the city's interior. In comparison, Hurricane Katrina's peak storm surge at this location was 15.5 feet, demonstrating that Hurricane Isaac was a true test for the HSDRRS.

Increasing water levels in Lake Pontchartrain triggered operation of the Seabrook Complex, and the Interim Closures Structures at 17th Street and London Avenue Outfall Canals, which also prevent increased water levels in the lake from entering interior canals. The Outfall Canal Interim Closure Structures also operated during Hurricane Isaac's relentless rainfall. These structures not only held back high water levels in Lake Pontchartrain, which reached 6.5 feet, but also allowed the Sewerage and Water Board of New Orleans to operate their city-wide interior drainage and pumping system full capacity throughout the storm.

As Hurricane Isaac made its way onshore, wind patterns shifted and began stacking up water on the west bank of the HSDRRS. On Aug. 29, the West Closure Complex and the Bayou Segnette Complex operated for the first time during a storm. The West Closure Complex's 125-foot sector gate was closed and held back Isaac's five-foot storm surge for several days. The world's largest pump station of its kind pumped out interior drainage water from three separate parishes at an astounding rate, allowing interior drainage systems to drain rainfall from many communities.

Hurricane Isaac took more than 24 hours to move across and out of the greater New Orleans area, which tested the perimeter system of the HSDRRS as well as the interior drainage and pumping system. For the first time in its history, the system held and performed as designed in a tropical storm.

Neighboring communities

While the HSDRRS provided risk reduction for the greater New Orleans area within the system, low-lying communities outside the federal system experienced devastating storm surge and rainfall flooding.

In Plaquemines Parish, Hurricane Isaac's storm surge overwhelmed the local levees and flooded portions of the

parish outside the HSDRRS. Communities that were devastated by Hurricane Katrina, such as Braithwaite, were once again inundated. Areas west and north of Lake Pontchartrain, such as LaPlace and Madisonville, experienced storm surge flooding, and rainfall caused several streams and rivers to overflow.

High water levels in Lake Pontchartrain did not allow this water to drain naturally for several days, extending the struggle for these communities. USACE provided technical assistance for impacted areas with missions such as unwatering, debris removal, infrastructure assessment and temporary power.

There has been speculation that the HSDRRS caused the flooding in communities surrounding Lake Pontchartrain. Before construction of the HSDRRS, USACE conducted extensive pre-construction modeling and analysis that indicated the system would have little to no impact to areas outside the system.

To remain open and transparent with the public, and in keeping with the Corps' intent to learn and apply lessons learned for future storms, USACE has committed to conducting additional modeling and post-storm evaluations to explore this matter further using data collected from Hurricane Isaac. As soon as this effort is complete, the findings will be shared with stakeholders and the public.

Work ahead

Public safety has always been the Corps' top priority. The greater New Orleans Hurricane and Storm Damage Risk Reduction System performed as designed, preventing damage, reducing risk and allowing residents of the area to return promptly to their homes and return to normal activities. Hurricane Isaac has also showed the need for hurricane risk reduction systems and ecosystem restoration throughout coastal Louisiana as shown by the many communities that were inundated with flood waters and now face the challenging road ahead of rebuilding.

Many important lessons have been learned from Hurricane Isaac, and USACE will continue to learn as teammates assess, rebuild and prepare for future tropical storms.

Planning & response teams prepositioned

By Raini Brunson
Headquarters

The U.S. Army Corps of Engineers' Operations Center (UOC) began closely tracking Hurricane Isaac about a week before the storm made landfall as its predicted path became clear.

In advance of the storm making landfall, USACE alerted several of its planning and response teams (PRTs), even prepositioning them on the ground in areas expected to be impacted by Isaac. USACE also supported and coordinated with state operations centers and Federal Emergency Management Agency (FEMA) Regions IV and VI Regional Response Coordination Centers to organize response efforts.

"Due to the track of the storm, we placed 24 of our planning and response teams on alert from all over the nation for the effects of Isaac, beginning in Puerto Rico and the U.S. Virgin Islands, and finally the Gulf Coast from Florida to Louisiana," said Col. Thomas Smith, chief of Contingency Operations at USACE Headquarters.

Hurricane Isaac made landfall as a Category 1 hurricane in Southeast Louisiana Aug. 28. Localized heavy rains caused widespread flooding along the coasts of Mississippi, Louisiana, Alabama and Florida. Since Isaac was a slow-moving storm, remnants were felt in the Middle Atlantic States and Ohio Valley as late as Sept. 5.

As part of the federal government's unified national response to disasters and emergencies, USACE responds to the Department of Homeland Security (DHS) and FEMA as the primary agency for ESF #3, the public works and engineering emergency support function. To aid in the recovery of those areas impacted by Isaac, USACE received 40 mission assignments from FEMA totaling \$20.2 million. At the height of the response effort, several hundred USACE employees were engaged.

"This was truly an 'all hazard' contingency response that reached across an extensive geographic area," said Karen Durham-Aguilera, director of Contingency Operations and Homeland Security at USACE Headquarters. "Our teams were trained, prepared and ready. Along with FEMA and the inter-agencies, we anticipate the needs of the states' emergency managers and communities to ensure we have the right plan, the right people, and the right supplies to best serve the public. People count on us. Our folks from district, divisions, the 249th Engineer Battalion (Prime Power), our HQ, and others contributed mightily and met the myriad of challenges wrought by Isaac."

In response to FEMA mission assignments, USACE deployed emergency power teams to Alabama, Mississippi and Louisiana. Commodities, debris and temporary roofing teams were also deployed to Louisiana. Bottled water was sent to Alabama and Louisiana. USACE deployed emergency command and control vehicles to assist with onsite communications in Alabama, Mississippi and Louisiana. In Mississippi, Alabama and Florida, USACE deployed coastal engineers to assist in coastal damage assessments.

Other response teams, such as commodities, debris, temporary roofing and temporary housing, were placed on alert to support Florida, Alabama and Mississippi.

Some mission assignments received were for technical assistance. USACE subject matter experts provided



Photo courtesy of Memphis District

A UH-60 from the Louisiana Air National Guard sling-loads a 125 kilowatt generator during Hurricane Isaac. The Blackhawk crew placed the generator on top of a water storage tank at the Port Sulphur (Louisiana) Water Plant. Soldiers of the 249th Engineer Battalion (Prime Power) installed the generator to power pumps for fresh water.

guidance in debris removal, temporary roofing, and un-watering levees. Temporary power, involved assisting installation of emergency generators in areas without power.

USACE also provided assistance to the states and to FEMA with flooding issues at several non-federal sites – the Percy Quin Dam on Lake Tangipahoa in Mississippi, and Plaquemines Parish and the Pearl River Lock in St. Tammany Parish, both in Louisiana. Pumps were sup-

plied to the Pearl River Lock and the Percy Quin Dam, as well as technical assistance provided for mitigation and repair efforts. USACE also assisted state and Plaquemines Parish leadership with un-watering efforts.

"Our teams are highly trained and credentialed to support the typical missions we perform in support of FEMA and the states," Smith said. "The willingness of these volunteers to deploy on short notice is integral to the Corps' capacity to respond. Thanks to everyone who made the commitment to be available to assist, and to those who actually deployed as part of the response and recovery effort."

As Isaac moved northwest into Missouri and then northeast across Illinois, its strength weakened from a Category 1 hurricane to a tropical depression and then further weakened to a post-tropical storm, before finally moving off into the Atlantic Ocean. According to the National Hurricane Center, the bulk of the heavy rains fell through Sept. 2, although there were lingering heavy rains in some areas as late as Sept. 5.

The majority of USACE PRTs were released by Sept. 8, although the temporary roofing team and infrastructure inspection team stayed on the ground in Louisiana the following week, as well as the coastal engineers who provided technical assistance to FEMA and state teams in Florida and Alabama.

The temporary roofing team provided technical assistance to volunteer agencies leading temporary roofing installations, an innovative pilot "whole community" program. The USACE debris team is expected to remain in Louisiana through at least the end of September to provide advice and monitor debris removal operations.

Blue roof ops changed

By Spencer Schargorodski and Bill Irwin
Headquarters

On Aug. 28, Hurricane Isaac made landfall along the Gulf Coast, impacting coastal and inland communities with tremendous flooding. Roof damage from Hurricane Isaac was relatively minor, but there were still hundreds of homes with significantly damaged roofs.

The Federal Emergency Management Agency (FEMA) often tasks the U.S. Army Corps of Engineers to provide temporary roofs when there is widespread wind damage. Due to the small size of the Hurricane Isaac temporary roofing mission, USACE decided that volunteer organizations could more effectively and efficiently provide this service to the survivors.

A pilot project was initiated, in coordination with Louisiana, FEMA, Southern Baptist Disaster Relief, the Louisiana Voluntary Organizations Active in Disaster (LA-VOAD), and the National Voluntary Organizations Active in Disaster (N-VOAD). The blue roof pilot project enabled these partners to address issues, assess capabilities and evaluate overall cost-savings of the volunteer effort.

It also provided an opportunity for members of the affected community and other volunteers to assist one another in recovery, strengthening bonds and increasing community morale following Hurricane Isaac.

Craig Fugate, FEMA administrator, has emphasized that disaster relief is a whole community effort, requiring the support of many partners. This pilot project was a great example of the whole community working together to benefit survivors.

FEMA provided plastic sheeting, furring strips and other supplies. USACE provided technical assistance, including subject matter experts who deployed to deliver "just-in-time" training, temporary roofing installation handbooks and advice. The Southern Baptists Disaster Relief deployed to coordinate the work with other volunteer organizations and the LA-VOAD.

Overall, this pilot was a success and garnered praise from the community, federal officials and the volunteer organizations. USACE leadership recently met with FEMA officials and leaders from the NVOAD and Southern Baptist Disaster Relief to discuss the next steps needed to make this partnership even more effective in the future. A team will develop partner agreements, procedures and handbooks that will assist in integrating volunteer organizations into the temporary roofing relief efforts in the future.

Most of all, this pilot provided an opportunity for the partners to strengthen relationships and revealed many other areas where USACE, FEMA and volunteer organizations can work together in the future to provide relief to disaster survivors.

ERDC software aids Detroit fire dept.

By Megan Holland

Engineering Research and Development Center

In Detroit, Mich., vacant and abandoned homes are a major problem. After losing a quarter of its population between 2000 and 2010, the city is estimated to have 40,000 such properties that are a breeding ground for criminal activity and create safety hazards, according to a recent Wall Street Journal article. Now, U.S. Army Engineer Research and Development Center (ERDC) technology is helping the city clean up.

ERDC's Mobile Information Collection Application (MICA) software was originally fielded during the historic May 2011 Mississippi River flood to digitally capture vital field data and send it directly to emergency command centers. This allowed much quicker response time and eliminated hours of paperwork and data input. Also eliminated? The need to carry a backpack full of equipment. The software comes loaded on a Smartphone and uses standard camera, GPS, compass, WiFi and computer processing capabilities.

"Fifty Android phones with ERDC's MICA software were deployed to seven flood-affected cities, resulting in more than 12,000 pictures, videos and notes that were transmitted from the field directly to command centers, along with the latitude and longitude for each piece of information," said Robert Walker, MICA lead developer and a computer scientist for ERDC's Information Technology Laboratory (ITL). "Following the success of that mission, we quickly realized that this technology could be easily adapted to fit any mission simply by changing the software's categories."

Enter Detroit.

Using MICA, the city's fire department is cataloguing vacant homes for demolition. The data also gives them the added bonus of knowing whether or not a home is vacant or abandoned when responding to a fire call (the homes account for 80 percent of all fires, and advanced knowledge can be the key to safety), and the ability to one day connect the data to existing utility and land/property record databases.

Detroit officials were introduced to MICA following a recommendation from a consultant who works for both ITL and Michigan and thought the technology was a perfect fit for their needs. Only eight days after that initial conversation, 65 phones were up and running and ERDC experts flew to Michigan for a one-day training course in how to use the program.

The phones were purchased by the city and the program is fully self-sustainable. ERDC experts are available if questions arise, but do not need to be involved in day-to-day use.

"MICA is made to solve a variety of problems instead of being laser-focused on only one issue," said James Pettitt, MICA lead developer and a computer scientist in ITL. "The software demonstrates the ability of technology to continually improve quality of life and job ease in many areas of data collection, and I'd like to see this expand into as many fields as possible, both civilian and military."

The goal of expansion has quickly become a reality. In addition to the Detroit Fire Department, Jacksonville District is testing MICA as part of wetlands restoration projects, and the Federal Emergency Management Agen-



Photo courtesy of the Detroit Fire Department

Detroit firemen check a vacant building using MICA software loaded on Android smart phones.

cy (FEMA) has requested multiple MICA demonstrations for potential use in bridging the data gap between federal, state and local authorities.

USACE is considering MICA for a variety of missions including real estate inspections, debris removal and the ice and water mission, which supplies bagged ice and water during disaster and emergency situations. Pittsburg District plans to use the technology for emergency management, having just received a kit from ERDC's Reach-back Operations Center.

On the military side, ERDC researchers sent phones loaded with MICA to the U.S. Military Academy at West Point for a trial run and feedback from cadets. The report was positive, with the cadets indicating significant time would be saved during standard military procedures. Though Smartphones aren't currently approved for day-to-day Department of Defense (DoD) use (something MICA creators are working to change), ERDC does have a loan system for those who cannot purchase their own phones.

"The potential for this system is truly unlimited," Walker said. "It's the first project of my career that has been given this level of attention to detail. We wanted to put out a product that thought of all the weak points – offline data collection, offline mapping, cheap/easy to acquire hardware, minimal training, adaptable, etc. And

we've done that."

The cutting-edge technology has garnered nationwide recognition. The technology was recently named winner of the 2012 USACE Innovation of the Year Award, an honor given for saving a million dollars in infrastructure and flood-fighting costs during the 2011 Mississippi River mission. The award also cited the significant improvement in USACE response time thanks to MICA, and stated the technology is "poised to revolutionize USACE by transforming the manual processes into a completely digital process."

"This win shows that Smartphones are important for the future of USACE and DoD," Pettitt said. "We need this technology to be better integrated into our infrastructure, so applications such as MICA can be easily used by those it would benefit. The future of Smartphones and MICA is bright and I look forward to seeing just how far they can go."

"The innovation award was a big honor for us," Walker said. "Now we want to introduce MICA to as many people as possible. This technology can help with day-to-day requirements while saving millions of dollars, not to mention helping to keep our first responders out of harm's way. I feel like we haven't even skimmed the surface of what this technology can do. MICA is filling a need that was previously untouched."

Reachback vital to Afghanistan operations

By J.D. Hardesty

Afghanistan Engineer District-North

The clock is ticking in Afghanistan.

The exit path locked in place by global leaders at the May 20-21 Chicago NATO Summit dictates that combat operations will end in December 2014 as coalition forces transfer security responsibility to the Afghanistan National Security Forces.

Faced with shrinking resources, declining manpower and an Afghanistan exit path to follow, time is of the essence for the U.S. Army Corps of Engineers, which manages more than \$10 billion worth of construction projects being built across Afghanistan's 21 northern provinces.

Afghanistan Engineer District-North (AED-N) is identifying projects that can be completed before coalition troops pull out. The strategy for success is to bring the full expertise of USACE to bear on the remaining projects to meet the difficult Afghanistan construction cycles ruled by topography, insurgent activity, extreme weather and a clock counting down toward Dec. 31, 2014.

One of their major tools is reachback -- using secure communications to "reach back" to experts in the U.S. for assistance. The Engineering Research and Development Center developed portable secure telecommunications kits, and more than 300 are deployed worldwide. Personnel deployed in the field use them to reach USACE experts or others in government, industry or academia for assistance with field engineering problems. The USACE Reachback Operations Center in Vicksburg, Miss., averages about 4,000 requests for assistance annually.

"We have experienced and highly skilled volunteers who sacrifice to deploy and do the work, but there are always high-caliber Corps professionals to whom we reach back and tie into their knowledge. They augment and fill in the gaps when and where we need help," said Mark Hoague, who manages the engineering branch for the district. "We have people deployed here who cover 80 percent of the architectural and engineering situations we face, but reaching back to our 'A-Team' of engineering professionals gives us greater capability."

One subject matter expert the district individually reaches back to is Dr. James Dexter, an hydraulics and hydrology expert in Seattle District who brings expertise from several civil engineering disciplines. Dexter has served several deployments and brings valuable competencies via reachback to AED-N.

Dexter and other reachback experts stay connected through ProjectWise, an engineering content management and project collaboration software employed by USACE, which helps augment local information with the skill sets located Stateside. They couple the latest engineering knowledge with boots-on-the-ground lessons learned from serving in Operation Enduring Freedom.

"It is tough to fully understand the engineering and construction environment we face if you've never deployed here," said Hoague, who has served multiple deployments in both Iraq and Afghanistan.

Thuyen Nguyen, a Jacksonville District structural engineer who deployed to AED-N March 2010 to April 2012, used his extensive bridge-building background to design four bridges during his tenure.

"Thuyen Nguyen is one of our go-to experts because he knows the construction methods, technical requirements



Photos by Rick Manley, Afghanistan Engineer District-North

The wadi mitigation project was designed with reachback assistance by Dr. James Dexter in Seattle District. At left is the original damage, at right is the completed project. It provides flood control at Gamberi Garrison.

and contract and design experience for bridges here," Hoague said. "So, people designing bridges for the Commander's Emergency Response Program reach back to Nguyen as an independent technical reviewer. He worked here and understands the bridge design and construction methodologies, but keeps in mind all the items you have to consider to build successfully in Afghanistan, including what can't be done here."

Other individuals that AED-N taps include Maung Myat, a civil engineer from Seattle District; Scott Mensing, another civil engineer from Kansas City District; and Joe Swiniarski and Jim Lowe, electrical engineers from Omaha District.

"Most of the individuals we reach back to have deployed here," Hoague said. "They are subject matter experts who have walked the terrain and seen several of the projects. They are critical assets to our district because they understand all of the idiosyncrasies of working and designing projects in Afghanistan. Reaching back for their assistance shortens our learning curve because they already have specific project, area and construction knowledge. As they apply their gained knowledge, they shorten design time, increase the quality of our construction contracts and save taxpayer dollars."

AED-N's reach back works by bringing in skill sets as needed. A good example is the wadi (a normally dry river bed) flood-mitigation project on Gamberi Garrison. In the past couple of years, heavy rains have flooded Gamberi Garrison, ripping ruts in roads and depositing mud and debris throughout the Afghanistan National Army's massive installation that will accommodate up to 10,000-plus 201st Corps soldiers.

Dexter, who has provided project review for more than 300 design or construction submittals on all aspects of civil and geotechnical design, served three tours to Afghanistan. His latest tour was July 2011 to January 2012.

The Gamberi Garrison flooded shortly after his second tour in August 2009. During the next two years, he would participate in the master planning, request-for-proposal preparation and design and construction submittal reviews for the wadi project that would mitigate damages from major floods.

Dexter explained a significant flood the following year, in September 2010 damaged the east perimeter wall and destroyed a road bridge on one of the main access roads to the garrison.

"I was tasked to provide a concept plan and design criteria for a request for proposal for a design/build contract that would replace the bridge and provide a diversion channel along the eastern perimeter for flood protection," Dexter said. "During May and June of 2011, I reviewed the contractor's submittals, accomplished my own detailed hydrology and hydraulic modeling to formulate specific requirements, and made comments that moved the project forward."

Dexter worked out of his home in Washington state, but he worked the same workweek rhythm as his deployed counterparts to immediately provide responses to project design concerns. His comments were accepted by the contractor, which streamlined project construction and saved millions of dollars while hastening the completion of the project months earlier than originally scheduled.

"Dr. Dexter has become a regional technical asset for the Northwest Division," Hoague said. "Highly skilled engineers who get work done quickly, as he exhibits on all his assignments, attract a lot of work, and he has become reach back support to our reach back districts that use him to check parts of their design work or for technical design support in the H&H area."

"I don't have a thing to worry about as the reach back review process runs nearly on autopilot," Hoague said. "The reach back crew we have allotted work to in the states are the Corps' A-Team. As a resource, they lift a huge load off of my shoulders to concentrate on the more routine or unique things. Their contributions help our deployed staff concentrate on field problems that need eyes-on or face-to-face interaction with contractors."

Hoague explained further that, in addition to reaching back to individual resources, tapping into USACE districts to expand his office's capability has become an essential tool for future AED-N success.

"For example, Kansas City District has been critical to our success," Hoague said. "They provided full design, writing and awarding contract support for such signature projects as the \$88 million Afghanistan Ministry of Interior Headquarters and the \$60 million phase IIIA and phase IIIB construction projects for the Afghanistan National Defense University, the Afghan National Army Officer's Academy."

The clock is ticking. Hoague and the district are maximizing the use of USACE talent. "We're bringing the full force of the U.S. Army Corps of Engineers to bear on finishing our projects," Hoague said.

FEST-A trains with Italian engineers

By **Brittany Bangert**
Baltimore District

A Europe District Forward Engineering Support Team-Advance (FEST-A) conducted training and remote engineering missions with Italian Army Reconnaissance Engineers in Aviano, Italy, Sept. 9-21.

"It is no understatement to say that this event is the Super Bowl of FEST-A training," said Master Sgt. Steve Frank, FEST exercise planner.

With ambitious plans for complex training missions and incorporating real-world missions to support U.S. Army Africa and U.S. African Command (AFRICOM), the planning staff knew it would be challenging.

As part of NATO's mission to forge a growing network of partnerships, the FEST training incorporated interaction with Italian Army Reconnaissance Engineers as security forces. This provided a unique forum for the U.S. and Italian engineers to build trust and learn how to address possible security challenges together.

The FEST and Italian soldiers practiced several scenarios they could encounter while deployed -- route reconnaissance, structural assessments, and base camp development conducted on terrain similar to Afghanistan and Africa. Role-players representing local nationals and hostile individuals used small arms fire (blank ammunition) and improvised explosive devices (safe training munitions) to add to the challenge of the missions.

Reachback operations added a futuristic, high-tech element to the training. The TeleEngineering Communications-Deployable (TCE-D) kit allows engineers in the field to connect to the USACE Reachback Operation Center (UROC) in Vicksburg, Miss. The UROC can put the engineers in touch with experts in private industry, academia, USACE and other government agencies in the U.S.

"If a problem cannot be solved by my FEST on the ground, we used the UROC for assistance," said Capt. Shai-Lin Ynacay, FEST leader. "The UROC supports us by answering technical questions, providing imagery and helping us with equipment and software issues."

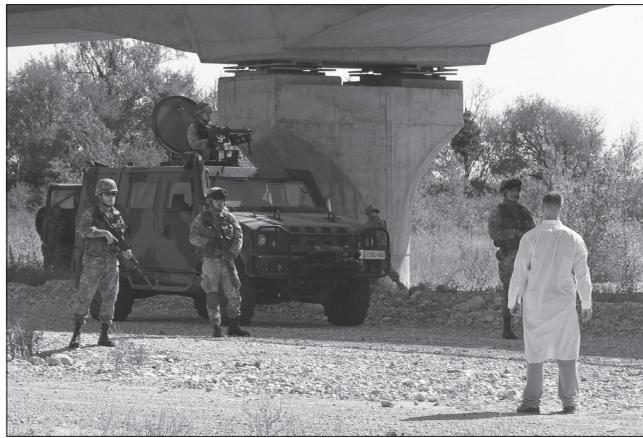
Sharon Valente is a FEST veteran who helped build base camps during Operation Iraqi Freedom. "This FEST environment is more conducive to a real situation that we could encounter if deployed," she said. "As a result, it's the best FEST exercise and training that I've ever seen."

Most of that realism can be attributed to the 3rd Combat Engineer Regiment from Udine, Italy, the oldest combat engineer regiment in Italy. Their Advanced Combat Reconnaissance Team Platoon provided 14 men, including one officer, one non-commissioned officer and 12 soldiers.

"We specialize in detecting improvised explosive devices or other threats on the road," said Capt. Matteo Unich, the Italian company commander.

The Italian security forces worked jointly with Europe District's FEST-A, which included four engineers and four support staff, to conduct route reconnaissance to determine if a heavy armored vehicle could pass through the area safely.

The FEST immediately felt the challenge of working with a foreign partner. Tim Nauman, electrical engineer, explained how Europe District engineers partnered with



Photos by Brittany Bangert, Baltimore District

(Left) Italian Army soldiers encounter U.S. Army role players serving as security threats during route reconnaissance in Aviano, Italy. (Right) FEST members Stan Young (right) and Capt. Richards take measurements during a bridge reconnaissance as Italian military officer 1st Lt. Lasi secures the area.

the Italian aviation unit to conduct an air route reconnaissance.

"We assessed a pathway to deliver a heavy armored vehicle to a destination," Nauman said. "While simulating the route, we looked for anything that would make it difficult for that vehicle to get there. We're interested in bridges, roadway width, curves, overhead obstructions, tunnels and any other potential issues for a large vehicle."

The biggest challenge during the air route reconnaissance for the engineers was communicating with the Italians.

"We had a language barrier that could be very real for us if we're deployed," Nauman said. "We had a little crash course in Italian and English and learned the simple commands -- left, right, straight, stop, help. It was quite funny as they were saying words that they thought were English and I'm sure we were doing the same in Italian. But they were very cooperative, very helpful, expressed great interest in what we did and eager to help."

Both sides understand the value of training with language barriers.

"There's nothing we do where we're the only nation involved," said Lt. Damon Col. Montgomery, FEST exercise planner. "We're always partnering with other nations. It's important for the team to be cognizant of the challenges with language, culture, different vehicles and other unforeseen obstacles when they are deployed."

Unich and his regiment also understand the value of this partnership.

"Training together with other nations and sharing experiences through tactical procedure is important for our soldiers," Unich said. "It's important for us and the U.S. and we can help each other with our work. Cooperation is paramount."

Not only did the Europe District employees conduct route reconnaissance missions with the Italians, their medic, Spc. Elizabeth Monge, shared the U.S. Army's best practices for medical training.

"The Italians were interested in how we do medical assessment in a hostile environment, and it's something that anybody could do without advanced training," Monge said. "I demonstrated treating shock of a fellow soldier, improvising and using tourniquets, and treating a chest wound."

In addition to medical training, the Italian soldiers received a briefing of the FEST-A missions and an overview

of the engineering equipment used during the route reconnaissance.

"The Italians were intrigued by the engineering equipment we used during the route reconnaissance," Monge said. "We showed them our equipment including the TCE-D that gives us access to the Internet, the ability to make phone calls anywhere in the world and conduct video teleconferences in secure and non-secure environments."

"We also demonstrated the equipment in our vehicles during the route reconnaissance," Monge added. "The Automated Route Reconnaissance Kit collects pictures, voice recordings, GPS location, route dimensions and road details, while IKE (It Knows Everything) can collect coordinates and photos of areas of interest. Using this equipment while Italians served as our security force enabled us to gather data to complete our missions."

Working with the Italians is only one aspect of the FEST training expansion. Valente looks forward to future FEST exercises and highlights the importance of improving the process.

"We have a FEST that is growing," Valente said. "The processes are growing and the exercises are growing and continually changing. This particular FEST is different than the past, and there have been a lot of improvements. As a result of this FEST, we're developing checklists, scheduling more equipment training, and developing standard operating procedures."

Besides preparation for deployment and supporting AFRICOM and U.S. Army Africa, developing these procedures and improving these training missions was the ultimate goal of this FEST-A exercise.

"Our cooperation with the Italian engineers is a tremendous plus for both the team and the Italian army," Frank said. "Learning to operate in a multi-national environment in a challenging and realistic scenario significantly aided both organizations for future missions."

"Training with other militaries is a great tradition," Unich said. "It's very important that we share our experiences and understand how each other works."

The exercise ended with the Europe District employees preparing a cookout for the Italian soldiers to thank them for their partnership during this exercise. In return, the Italians presented the Europe District employees with platters of Italian pastries and a plaque.

Corps' oldest employee retires at 93

By Sandra Arnold and Isidro Reyna
Galveston District

If 80 is the new 65 when it comes to current retirement plans, then most U.S. Army Corps of Engineers employees would still have a decade to go before catching up with civil engineer Jack Otis, whose departure in September officially made him the oldest employee to retire from the U.S. Army Corps of Engineers.

While achieving this title was never his goal when he accepted a USACE position 41 years ago, becoming an engineer was a career choice he made as a teen.

"My father was a practical engineer and, although he never went to college, he was very smart and encouraged my interest in engineering and urged me to attend college," Otis said.

Following his father's advice, Otis enrolled in the chemical engineering program at Syracuse University in 1940. Just as he was settling into his new role as engineering student, the nation entered World War II and he was faced with a troubling dilemma – to serve his nation in the military or continue to fulfill his childhood aspiration of becoming an engineer.

After careful consideration, Otis met with the dean of engineering and requested to put his studies on hold to enlist in the armed forces. Concerned that one of his top students may not finish his studies upon his return from the war, the dean convinced Otis to remain in school on a student deferment until he completed his program.

Staying true to his word, Otis remained in the university to finish his course of studies, but his desire to join in the war effort never waned. So upon graduation he enlisted in the U.S. Navy.

"Both my father and uncle served in the Navy during World War I," Otis said. "I couldn't think about enlisting in any other branch of the armed forces."

Otis became an electronics technician's mate and deployed to the Pacific Theater where he was assigned to LST 620 (landing ship, tank). During his enlistment he participated in the assault on Ie Shima, a small island off the coast of Okinawa, then geared up for the next big assault.

"We began training for the invasion of Japan," Otis said. "Then in August the United States dropped the atomic bombs on Hiroshima and Nagasaki and the Japanese surrendered. I know there was a great loss of life in those bombings, but they probably saved my life."

Otis was honorably discharged from

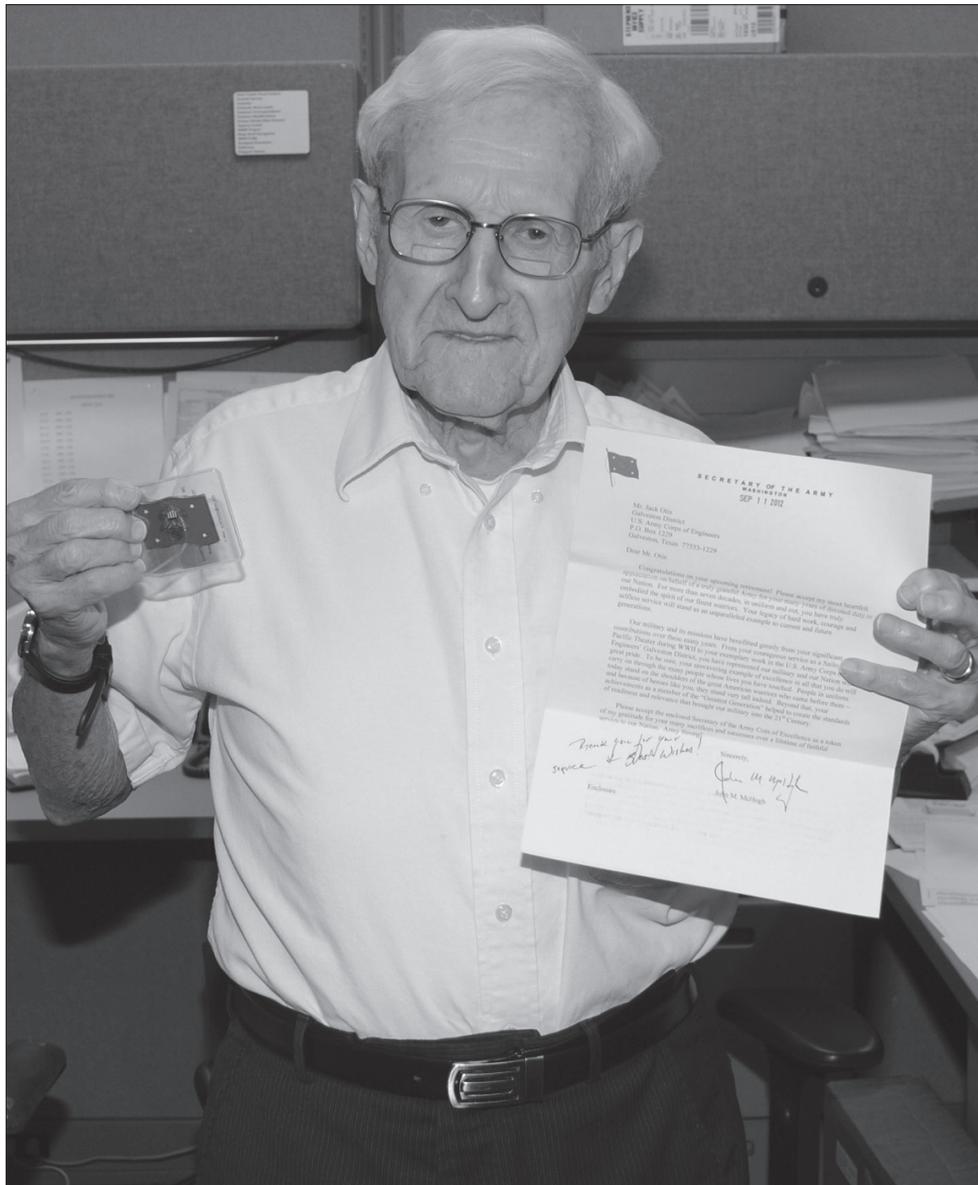


Photo courtesy of Galveston District

Jack Otis proudly displays a letter and pin sent to him by the Secretary of the Army John McHugh thanking him for 41 years of dedicated service to USACE and for his service in the Navy during World War II. Otis, a civil engineer with Galveston District, was the Corps' oldest retiree at the age of 93.

active duty in 1946 and remained in the Navy Reserve until 1950 while also pursuing a Master of Business Administration from Syracuse University.

With his academic goals achieved and service to the nation fulfilled, Otis transitioned into the next chapter of his life, accepting a position as an engineer with General Motors where he remained until the downsizing of the auto industry in the 1960s.

During the next decade Otis worked for several companies in Alabama and Philadelphia. One of his more interesting jobs was with the Boeing Company where he was part of the team that designed and tested booster rockets for the Apollo moon missions.

"Companies hired me for specific tasks and once a contract was over I either had to transfer to a different office within the company or find a new employer," Otis

said. "My wife and I were getting tired of running around chasing jobs and that's when I decided to apply for civil service. In July 1971, I obtained a position with Mobile District."

Seeking upward mobility within USACE, Otis accepted a position with Galveston District's Regulatory Branch in May 1974 and began issuing environmental permits.

"Back then there weren't many environmentalists in the country, it was a newer job field," Otis said. "As a result, the Regulatory Branch used engineers for permitting."

During the next four decades he accepted various assignments in Galveston District to include working in the Planning Section, becoming the assistant chief in mobilization master planning and military design projects, the lead engineer for the Defense Restoration Environmen-

tal Program (a program that focuses on cleaning and managing contaminated lands on current and former military installations) and a program manager for the district's Programs and Project Management Division.

His most notable district projects include oversight of the Channel to Victoria on the Gulf Intracoastal Waterway, work on the Greens Bayou and Cedar Bayou, and the projects at Fort Sam Houston, Texas, that modernized the base and built Brooke Army Medical Center, as well as the Matagorda Ship Channel Deeping Project.

Having earned a degree in chemical engineering in 1943, Otis is amazed at the extraordinary advances made in engineering.

"When I first started working, we used slide rules, logarithms, manual calculators and standard tables to develop the engineering," Otis said. "Today, everyone has their own computer to help them with their projects. Although computers are a great tool, sometimes I believe there is a tendency to over-rely on them."

With more than 60 years of engineering experience under his belt, this seasoned professional advises young engineers to keep active, remain current on training and try to learn new ways of operating to avoid getting stuck in a rut.

As his colleagues prepared for him to hang up his hardhat and transition from a "Custodian of the Coast" to a U.S. Army Corps of Engineers retiree, they knew he took with him a tremendous wealth of knowledge but left behind a legacy that he can be proud of.

"Jack is a model employee who epitomizes the Army's Core Values and is a true representation of our Greatest Generation," said Col. Christopher Sallese, commander of Galveston District. "Though the district will be losing invaluable institutional knowledge when he retires, we are extraordinarily happy for him and proud of his numerous achievements."

Always looking at the glass half full, Otis viewed retirement as a new beginning rather than an end as it affords him the opportunity to do things he never had time for in the past, such as travel.

"I've never been to Europe and I really want to go," Otis said. "Although I did some traveling in the Pacific during World War II, that's not the kind of travel I'm talking about."

A native of Syracuse, New York and resident of League City, Texas, Otis remained in Texas following his retirement Sept. 26.

JTR Corner

Employee Assistance Program is here to help

By **Katie Dooney-Foster**
Northwestern Division

The U.S. Army Corps of Engineers is committed to caring for its most valuable resource -- people. USACE recognizes that these are uniquely stressful times for all federal employees. In trying to stay on top of everything in your work and your personal life, it's easy to feel overwhelmed. When employees have trouble managing their professional, personal and family responsibilities, their productivity, efficiency and quality of life may decline.

When it gets to be too much, keep in mind that the Employee Assistance Program (EAP) is available for support.

EAPs are worksite-based programs and/or resources designed to benefit both employees and employers. For decades, EAPs have demonstrated their value to the individuals whose lives they improved, and to employers and work organizations that benefit from having healthy workers.

EAPs help businesses and organizations address productivity issues by helping employees identify and resolve personal concerns that affect job performance. By preventing, identifying and resolving these issues, EAPs enhance employee and workplace effectiveness. They are a vital tool for maintaining and improving worker health and productivity, retaining valued employees, and returning employees to work after illnesses or injuries.

Employers have found that proactive, preventive efforts to help employees identify and resolve personal issues before they have serious medical, family, and/or workplace consequences make financial and business sense.

EAPs are unique in that they provide services to individual employees and family members, supervisors, managers and the organization as a whole. They offer a quick, convenient source of private expert consultation, and can be used for a myriad of situations.

The Employee Assistance Program offers employees:

- Mental health-related services and referrals;
- Drug and alcohol-related services and referrals;
- Services and referrals for personal issues such as divorce and parenting;
- Information on work/life support, such as care giving for elderly parents and financial planning;
- Wellness and health promotion services, such as smoking cessation and weight reduction;
- Work-related supports like career counseling.

The Employee Assistance Program helps managers:

- Support employees and enhance productivity,
- Choose the best response in difficult situations,
- Consider legal and ethical concerns,
- Identify issues before they become problems.

The Employee Assistance Program helps organizations with:

- Education on handling mental health, stress, and ad-

ditions in the workplace;

- Addressing workplace violence;
- Safety and emergency preparedness;
- Guidance on communicating in difficult situations, such as reorganizations, layoffs or employee injuries/deaths;
- Absence management;
- Meeting needs of specific workers, such as returning veterans.

EAPs have been shown to contribute to decreased absenteeism, reduce accidents and workers compensation claims, increase employee retention, and significantly reduce medical costs by early identification and treatment of individual mental health and substance use issues.

The EAP is completely confidential in accordance with state and federal laws. EAP counselors will only release information with the written consent of an employee, or as mandated by law in special situations. These situations are carefully outlined to employees during their first EAP session. Use of EAP services will not jeopardize an employee's job security and/or opportunities for promotion.

The EAP is available to all USACE employees and family members. If employees experience personal problems that impact their ability to perform their job, they are encouraged to use this valuable resource. For more information regarding EAP, contact the local Civilian Personnel Advisory Center.

STEM reaches future scientists

By **Kerry Larsen and Dr. Richard Price**
Engineering Research & Development Center

In 2010, Dr. Peggy Wright was tasked with building an outstanding program for student outreach in science, technology, engineering and mathematics (STEM) for the Engineering Research and Development Center (ERDC).

Since then, Wright, ERDC's assistant director for Human Capital, has not looked back. She hired Rick Tillotson, a retired local school principal, to provide coordination and focus to the outreach program at ERDC headquarters and its four labs in Vicksburg, Miss. She also obtained resources from the National Defense Education Program and Army Education Outreach Program, and worked with STEM coordinators at ERDC locations in Champaign, Ill., Hanover, N.H., and Alexandria, Va., to implement a far-reaching program.

The STEM program now encompasses these four outreach coordinators and 614 scientists and engineers across ERDC. The growing program has had 567 teacher involvements this year and reached 10,136 students.

Teacher involvements have been one of the keys to the STEM program's success. These activities make optimal use of vendors who specialize in STEM education training programs. They work closely with Department of Defense (DoD) laboratories across the nation to integrate scientists and engineers into the training process. The programs provide instruction on modern learning tools and strategies so that teachers and scientists and engineers near DoD labs can successfully work together. This unique training strategy teams the educator and the STEM professional so that



(Left) The SAVE driving simulator allowed festival participants to navigate a virtual vehicle over a challenging virtual course. **(Right)** ERDC researcher Dr. Jeff Stevens prepares materials for hands-on student participation at the Army STEM Exposition in Leesburg, Va.



Photos courtesy of ERDC

they benefit from one another's perspectives, experience and expertise.

Another example of successful support to teachers is the Mississippi River Course lecture series, in which scientists and engineers from ERDC and Vicksburg District partner to provide technical lectures and demonstrations of engineering in action as it applies to flood control and navigation management of the Mississippi River.

A key asset to the robust STEM program at ERDC is the strong support of Dr. Jeffery Holland, ERDC director. During a visit by Lt. Gen. Thomas Bostick, USACE commanding general, Holland and Bostick toured the Gains in the Education of Math and Science (GEMS) camp, where the chief talked with students on a bridge-building exercise.

Bostick commended both the students and their ERDC mentors on an exceptional program that he would like to see implemented throughout USACE.

"The country needs youngsters who study science, math, technology and engineering," Bostick told the group. "Sometimes it's the harder road to walk, but it will open up doors for you and opportunities that you could never imagine. And it's fun."

One of the most successful grade school STEM programs adopted by ERDC has been Camp Invention, developed by Invent Now. ERDC provides hundreds of scholarships for underserved students to attend this week-long summer camp, which employs local teachers and allows students to

Continued on next page

USACE Soldiers get combat service badge

By **Bernard Tate**
Headquarters

Some people are said to wear their hearts on their sleeves. Soldiers wear their careers on their uniforms, and they wear their wartime service with special pride. On June 13 The U.S. Army Institute of Heraldry approved production of the U.S. Army Corps of Engineers' Combat Service Identification Badge (CSIB) for wear on the Army Service Uniform (ASU).

Lt. Gen. Thomas Bostick, USACE commanding general, will pin the first CSIB on a Soldier during the Strategic Leaders Conference (SLC) Aug. 6-10 in Little Rock, Ark. Although the ceremony marks the symbolic roll-out of the CSIB, all USACE Soldiers are now authorized to purchase and wear the USACE CSIB, if they meet the requirements.

In 2008, the Army approved the ASU as the Army's standard service uniform, replacing the green service uniform. Soldiers with wartime service had the Shoulder Sleeve Insignia-Former War Time Service (SSI-FWTS) sewn on the right sleeve of the green service uniform.

"But you don't wear SSI-FWTS on the sleeves of the ASU," said Command Sgt. Maj. Karl Groninger, USACE command sergeant major. "Soldiers asked, 'I'm proud of my wartime service. How do I show my unit affiliation during that service?' That's when the Army came up with the Combat Service Identification Badge."

The CSIB is a small metal replica of a Distinctive Unit Insignia (unit patch). Hash marks on the right sleeve of the ASU indicate the length of time in combat, while the CSIB indicates the Soldier's combat unit. Male Soldiers wear the CSIB centered on the right pocket of the ASU; female Soldiers wear it centered on the right side of the ASU midway between the waist and shoulder. The CSIB can also be worn on the less-formal class B version of the ASU, but it is pinned on the right side of the shirt.

It has taken from 2008 to 2012 for USACE Soldiers to have their own CSIB. Before this, USACE Soldiers who served in Operation Iraqi Freedom or Operation Enduring Freedom wore either the U.S. Forces Iraq or U.S. Forces Afghanistan badge in lieu of the USACE CSIB.

"The U.S. Army Institute of Heraldry contracted companies to produce these badges, and they started with the

STEM

Continued from previous page

explore a series of fun, innovative modules covering basic science and physics.

ERDC scientists and engineers are also active in STEM festival exhibits, educating thousands of attendees with interactive displays and activities. At the USA Science and Engineering Festival and the annual Earth Day, both held in Washington, D.C., staff from three ERDC sites assisted at the USACE exhibit to demonstrate a variety of technologies to students. A highlight was the Synthetic Automotive Virtual Environment (SAVE) driving simulator, developed for the Army by ERDC. The simulator allowed participants to navigate a virtual vehicle through a challenging course created for the festival.

Another STEM component involving ERDC team members centers on Army-sponsored eCYBERMISSION competitions. Free for students in grades six through nine, this is a web-based STEM competition where teams vie for state, regional and national awards while working to

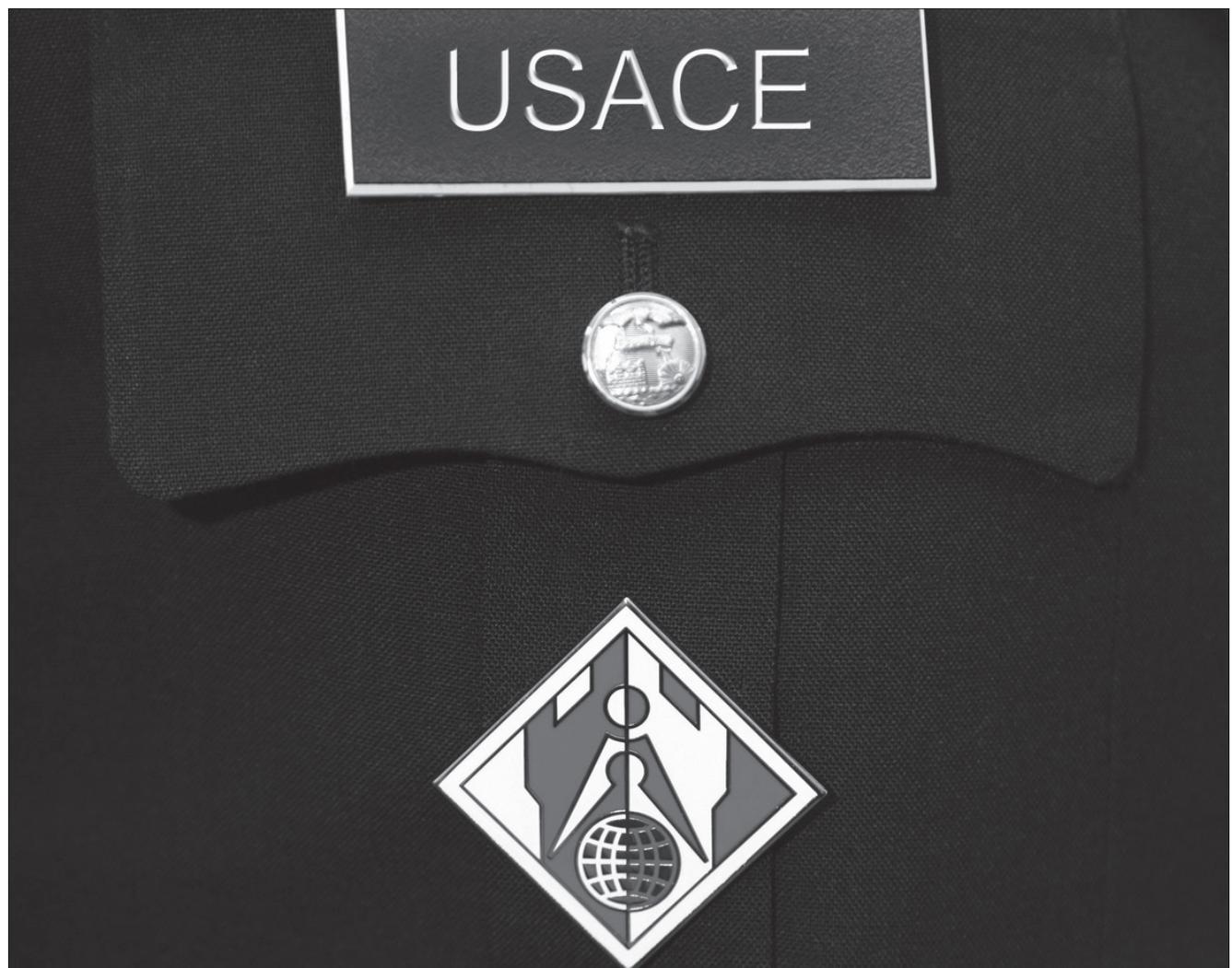


Photo by F.T. Eyre, USACE

The U.S. Army Institute of Heraldry has authorized USACE Soldiers to wear this Combat Service Identification Badge on the Army Service Uniform. The CSIB indicates what unit that a Soldier was with when he or she served in combat. It is worn on the right pocket of the ASU for males, on the right side of the ASU for women. Soldiers can order the USACE CSIB from the Military Clothing Sales Store or IRA Green.

units that have the highest number of Soldiers authorized to wear a CSIB," Groninger said. "That took awhile. They rolled out the ASU in 2008, and on June 13 Charles Mugno, director of the Institute of Heraldry, approved the USACE Combat Service Identification Badge.

"Soldiers who have deployed multiple times with multiple units have a choice of which CSIB they can wear,"

Groninger added. "I hope that any Soldier who has deployed to combat while assigned to USACE would choose to proudly wear the USACE CSIB."

To obtain the CSIB, USACE Soldiers can inquire at the nearest Military Clothing Sales Store, or order the USACE CSIB from IRA Green. The item number is 1-7521 CSIB A CRPS ENG, and they cost \$14.38 apiece.

solve problems in their community. For the past two years, ERDC has fielded award-winning teams, and this year's Vicksburg eCYBERMISSION team, the "Floodstoppers", won the state competition and advanced to the Southeastern Regional where they claimed second place against more than 1,000 students.

ERDC has sponsored robot building teams, combining the excitement of a major sporting event with the rigors of science and technology. ERDC teams have consistently gone to the semi-finals and finals in state competitions and have won numerous awards for their sportsmanship and professionalism.

ERDC hosts short-term summer camps under the GEMS program and supports a Vicksburg District-led, week-long summer camp for 40 high school students in cooperation with the Society of American Military Engineers. In the Vicksburg-Warren School system, the administration has initiated a Scholastic Academy to foster support and activities for high school students to pursue engineering careers

and, working with ERDC, has developed a semester course for students on robotics.

These K-12 STEM outreach activities compliment and provide a strong pipeline of talent for ERDC's robust STEM college student program, which hires more than 300 students annually. These students represent 30 states and more than 70 universities nationwide.

The STEM outreach program at ERDC continues to grow with ERDC's commitment to educational outreach in the vital fields of science, technology, engineering and math.

"ERDC provides innovative solutions for a safer, better world," Holland said. "To remain relevant and continue providing quality support to the warfighter and the nation, we need to hire the best and the brightest. Our STEM program lets us have a hand in growing some of the best and the brightest. It's an investment, not only their future, but in our future and that of the Corps of Engineers and our country."

Buffaloes roam at Chena Lake

By Curt Biberdorf
Alaska District

A group of roaming buffaloes found their way to the Chena River Lakes Flood Control Project. Nearly three weeks before, the staff had received a call from a North Pole, Alaska, resident who informed them that her bison herd escaped from her pasture on Plack Road. Project manager John Schaake told her he would not be surprised to see them show up because the floodway was perfect buffalo habitat.

Sure enough, park ranger Jacob Kresel spotted three of four missing animals grazing in the floodway. The owner was relieved to learn that the Chena Project staff found and kept the buffalo for her until she could return from a trip out of state.

"I told her not to worry as we were in no hurry for a buffalo roundup, and that the public would likely love to have



Photo courtesy of Alaska District

A herd of buffalo graze in front of a cabin at Chena Lake in Alaska District.

another watchable wildlife opportunity," Schaake said.

Chena Project staff anticipated that the buffalo would stay in the floodway and reservoir area where there was abundant food, water and cover, but they roamed over to

the road side of the dam. Therefore, the bison had to be moved because they were a potential hazard to the public.

Using all-terrain vehicles, Kresel and Hutch Huchison, volunteer host, successfully herded the bison a couple of miles down the Moose Creek Bikeway and maneuvered them through the Chena Project compound gate into in the construction materials storage pasture near the administrative office.

The next challenge will be removing the bison from the holding area because they are not trailer trained. Until a plan could be developed, they were safely confined in their temporary home.

"The owner was quite pleased with the outcome and the range of skills demonstrated by the Chena staff," Schaake said. He added that one of the buffalo is pregnant, and the owner is going to let them name the baby. The owner also plans a bison barbecue in thanks for their skillful range work and caring for the buffalo.

Hurricane Sandy

Continued from page 1

North Atlantic Division with more than 65 FEMA missions worth \$250 million. Personnel providing assistance included USACE senior leaders, power response teams, debris removal teams, dewatering teams, the 249th Engineer Battalion (Prime Power), and other technical personnel. Recovery field offices (RFO) were established in Lincroft, N.J., and New York City. The New Jersey RFO was co-located with FEMA Joint Field Office.

As of press time, USACE had three primary missions in the New York and New Jersey area – dewatering flooded sites, emergency power generation and debris removal.

Dewatering

Storm surge from Hurricane Sandy flooded New York City's underground tunnels with up to 400 million gallons of water. Five subway tubes, two Amtrak tunnels and three of the city's primary roadways were flooded. FEMA gave the dewatering mission to USACE, who turned to Mississippi Valley Division and Rock Island District because of their recent dewatering expertise in New Orleans. Assisted by the U.S. Navy and the U.S. Coast Guard, Joint Task Force Unwatering teamed with New York District, other federal agencies, and city, state and local authorities to dewater the tunnels in less than two weeks.

Power

USACE provided emergency power in New York and New Jersey for electrical generating capacity beyond the states' capabilities. More than 500 generators were staged at forward locations and more than 100 generators installed in New York, New Jersey and Pennsylvania. USACE received a prioritized list of requirements for local officials and acted immediately on those requests. Generator missions ranged from powering gas stations, to the Hoboken High Rise Complex and the Kinder Morgan Petroleum Terminal.

Debris

USACE debris teams were in ports, waterways and coastal areas in New York and New Jersey clearing debris along the Atlantic seaboard. A total of 35 debris teams assisted the two states, and more than 150 dump trucks and



(Left) Hurricane Sandy's record storm surge severely damaged USACE facilities at Caven Point, N.J. (Right) USACE tactical operations vehicles were positioned at Battery Park in lower Manhattan to provide assistance to New York District as they worked with the city and state to oversee the dewatering mission.

220 long-haul trucks were in operation during the height of the debris removal mission. As of press time, more than 12,500 cubic yards of debris had been removed, of which 8,000 cubic yards were carried by 16 barges.

FEMA issued three missions for debris removal in New York and New Jersey to USACE, and the crews deployed Nov. 5 to begin clearing storm-damaged areas.

The first two assignments requested USACE debris experts to work with commercial contractors and local officials to clear debris in support of New York and New Jersey power companies. In addition, USACE integrated with state and local governments to provide technical assistance, quality assurance inspectors and contract management expertise.

The third mission was for work in New York City. There, USACE experts assisted with removing and disposing of household and other urban debris. This included items like white goods (refrigerators, freezers and air conditioners), electronics, household hazardous waste chemicals and vehicles.

"We will use our expertise to assist other federal agencies, local and state government, and most importantly the residents of the area," said Maj. Steve LaValle, the USACE officer directing the debris removal mission. "We'll work together and ensure this mission is executed as safely



Photos by Patrick Bloodgood, North Atlantic Division

and efficiently as possible."

Other missions

USACE planning response teams also assisted with commodities distribution including water and ice, infrastructure assessment, temporary roofing, critical public facilities, water planning and temporary housing.

The Corps' emergency vehicles, the Emergency Command and Control Vehicles/Deployable Tactical Operating Systems, were deployed to provide on-site command, control and communications.

More than 25 team leaders or assistant team leaders were alerted or deployed to provide public works and engineering expertise including damage modeling, storm surge modeling and coastal preparations.

Housing specialists were on the scene in New York and New Jersey to assist with evaluating temporary housing requirements.

"This is a team effort, the Department of Defense working with all the federal agencies down to the local level," Bostick said during an interview with Neil Cavuto on Fox Business Oct. 31. "We can be proud to be Americans, because even during a tragedy like this there is goodness in seeing Americans come together to help other Americans in their time of need."