Falls City Engineer

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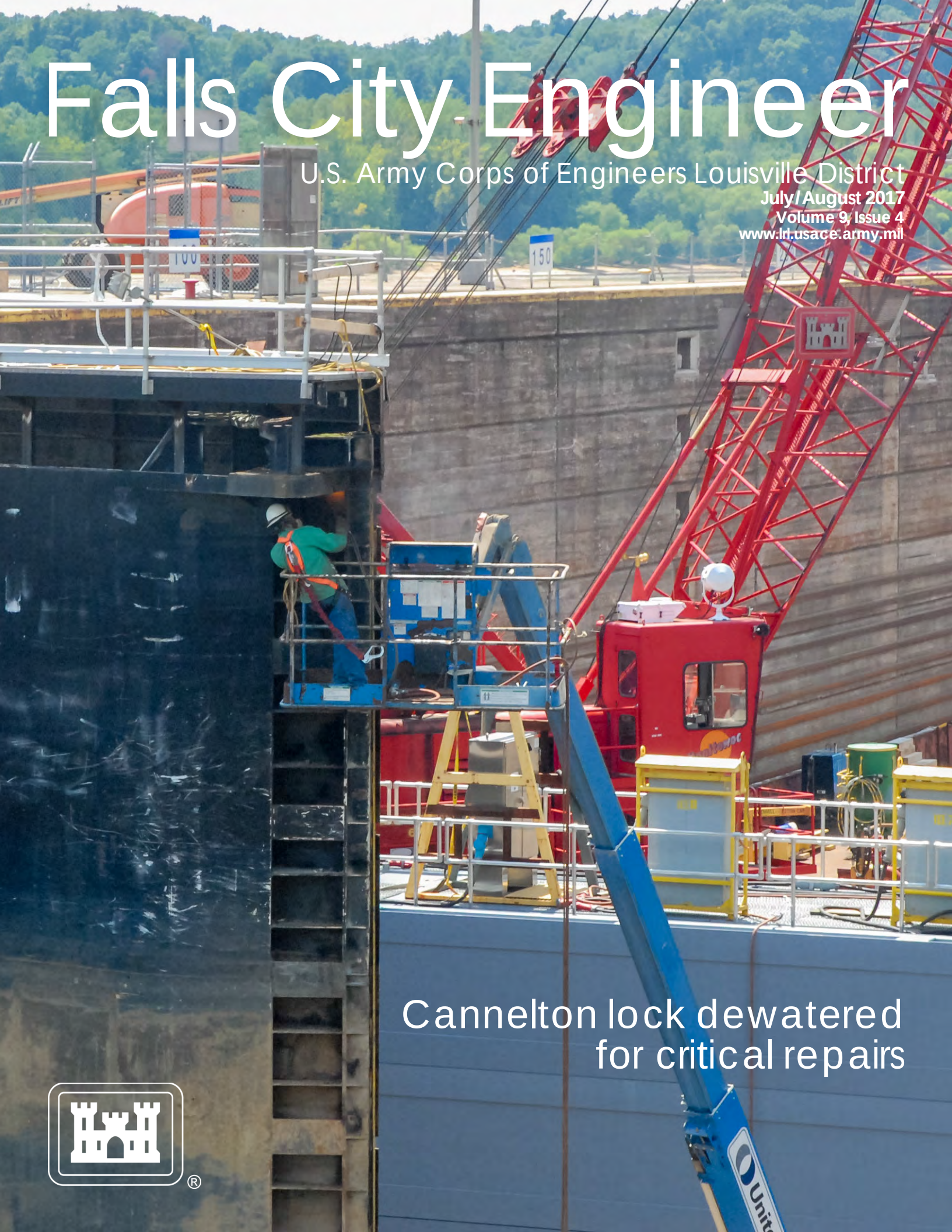

Cannelton lock dewatered for critical repairs

Falls City Engineer

Vol. 9, Issue 4

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On the cover: *Leland Bennett, welder, is part of the team making repairs to Cannelton Locks and Dam. (USACE photo by Carol Labashosky)*

Please conserve:
Think before you print.

Commander's Comments

Team,

It gives me great pleasure to greet you through this column, my first as Louisville District commander. I'm honored by the warm welcome I've received and happy to call Louisville home.

Already I've had the opportunity to meet many of you, and I look forward to meeting more as I travel around the district's footprint in the coming weeks and months.

This issue highlights just a few of the many contributions you and your teammates are making to the nation, like the National Museum of the U.S. Air Force achieving LEED Gold status – a remarkable feat demonstrating the Corps' ongoing commitment to building sustainably. I commend the team that has collaborated with our Air Force partners to complete such important work.

Critical repairs are being made to Cannelton Locks and Dam that required the 1,200-foot lock chamber to be dewatered. Crews have been working hard throughout the summer so we can get the chamber back up and running for our industry stakeholders.

I also congratulate our own David Kiefer, civil engineer and regional technical specialist, who was named USACE Engineer of the Year. David's expertise and leadership over his 28-year career are a great asset to the organization.

Because August is Antiterrorism Awareness Month, I remind you to stay vigilant and to report suspicious activity you may see. Working together we can keep our families and our nation safe.

Col. Antoinette Gant
Commander and District Engineer
Louisville District
U.S. Army Corps of Engineers

Finally, as I begin my command of the district, I thank Col. Christopher Beck for his guidance during our transition. He graciously passed the baton to me, and I will carry it proudly. I can't wait to see all we will accomplish together.

Building Strong and Taking Care of People,

Col. Gant

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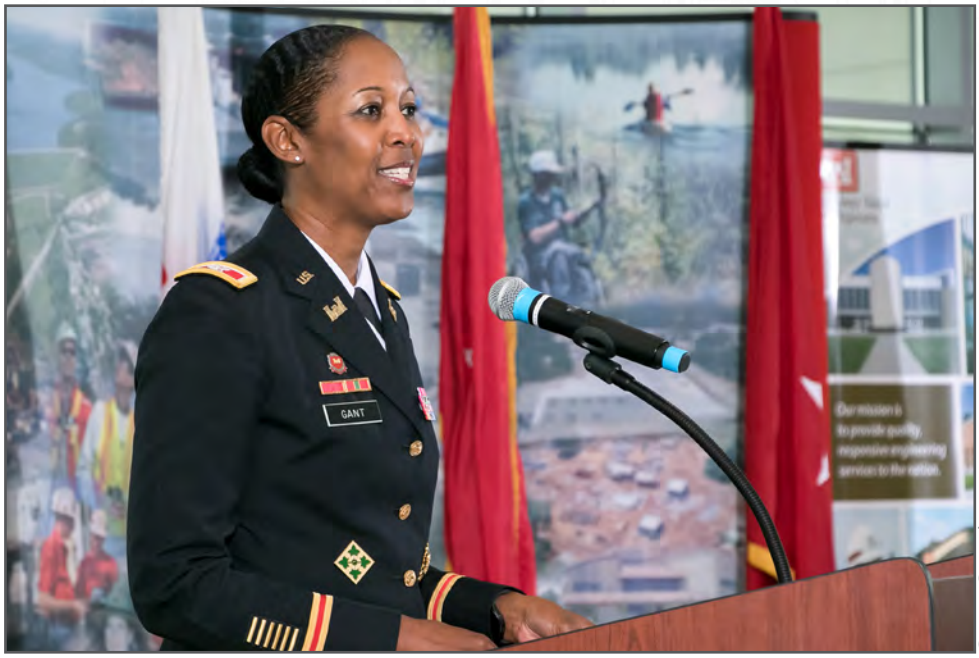


George Gonzalez

Col. Antoinette Gant addresses attendees at the change of command ceremony held July 27, 2017, at the Muhammad Ali Center, Louisville, Ky.

Carol Labashosky, public affairs

Col. Antoinette Gant took command of the U.S. Army Corps of Engineers Louisville District in a change of command ceremony July 27, 2017. As commander and district engineer, she provides strategic direction, and command and control for the district's civil, military and environmental programs.

"The Louisville District is getting yet another truly great leader in Toni," said Brig. Gen. Mark Toy, commander, Great Lakes and Ohio River Division, during the ceremony. "Toni takes care of people with three simple words: listen, support and educate."

Gant graduated from Prairie View A&M University, Prairie View, Texas, as a distinguished military graduate with a Bachelor of Science in civil engineering and a commission in the Engineer Regiment. She has a Master of Science in engineer management from Missouri University of Science and Technology in Rolla, and a Master of Science in national resource strategy from the Dwight D. Eisenhower School, National Defense University, Washington, D.C.

Prior to joining the Louisville District, Gant served as the Resolute Support Combined Joint Engineer branch chief in support of Operation Freedom's Sentinel. She advised and assisted in planning for the Resolute Support commander and staff in all aspects of military engineering. She served as Military Assistant to the Assistant Secretary of the Army-Civil Works at the Pentagon.

Gant served as the director for the Directorate of Public Works and Installation Support in a deployed environment, brigade engineer in an infantry brigade combat team, executive officer for a special troops battalion, chief of operations for an engineer directorate of an Army Service Component Command, and commander of the Army Corps of Engineers Albuquerque District. She has also deployed in support of Operation Iraqi Freedom and Operation Enduring Freedom, Afghanistan.

A strong advocate for STEM, Gant has worked to develop partnerships with agencies and organizations to promote STEM initiatives.

Her awards include the Legion of Merit, Bronze Star Medal, the Meritorious Service Medal, the Army Commendation Medal, the National Defense Service Medal, the Afghanistan Campaign Medal, the Global War on Terrorism Medal, the NATO Medal, and the Army Engineer Association Bronze DeFleury Medal.

A native of Port Gibson, Mississippi, she and her husband Leonard have two children.

> "I am totally grateful for the opportunity to serve as the 60th commander of the Louisville District – a district that has earned the reputation for getting things done, a district of innovators and forward thinkers."
>
> Col. Antoinette Gant

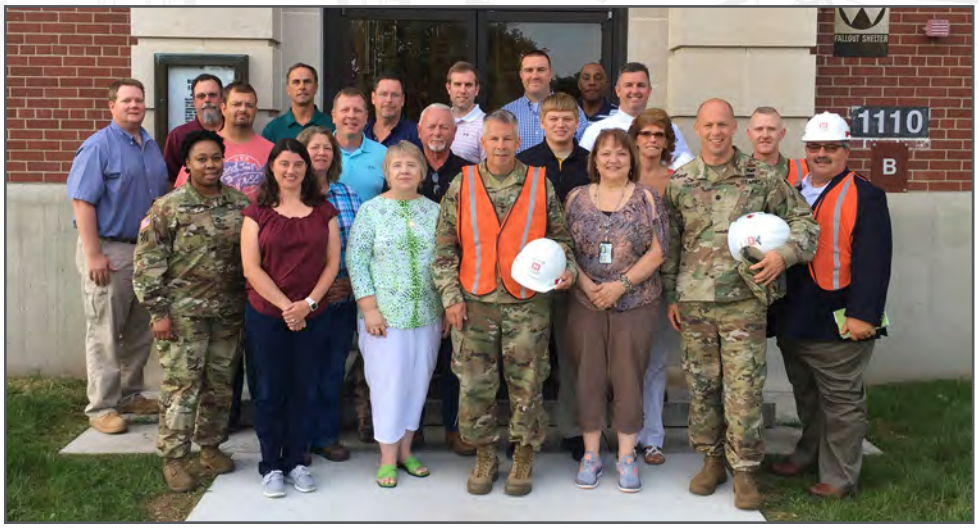
Jack Sweeney

Pictured during the change of command ceremony are (left to right), Linda Murphy, Louisville District deputy district engineer; Col. Christopher Beck, former Louisville District commander; Col. Antoinette Gant, Louisville District commander; and Brig. Gen. Mark Toy, Great Lakes and Ohio River Division commander.

Chief of Engineers Semonite visits Fort Knox

Lt. Gen. Todd T. Semonite, 54th U.S. Army Chief of Engineers and Commanding General of the U.S. Army Corps of Engineers, and USACE Command Sgt. Maj. Bradley J. Houston, visited the Fort Knox Resident Office Aug. 10 followed by a project site visit to the Fort Knox Middle School construction site.

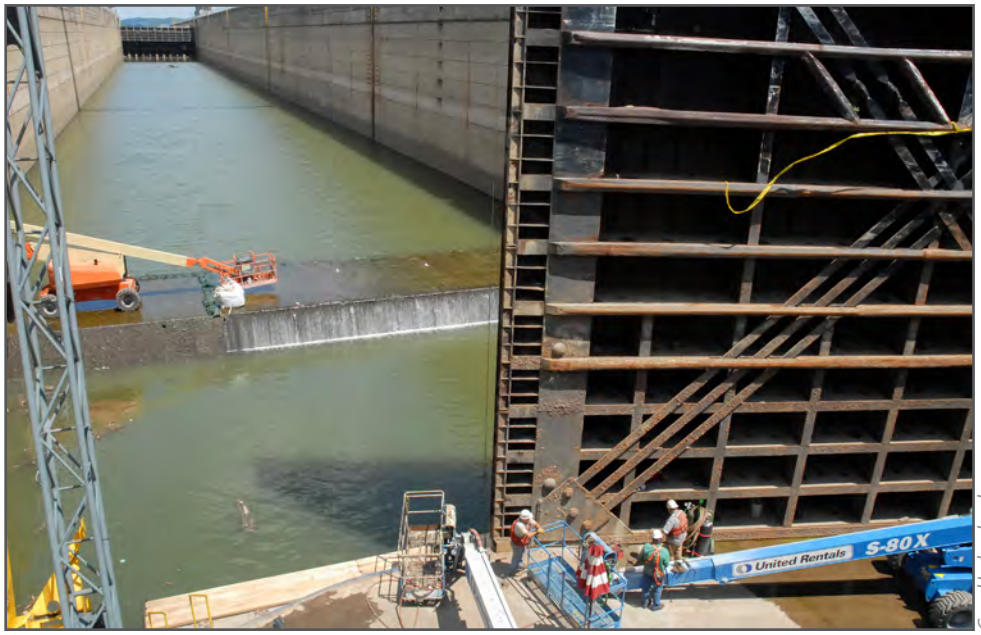
Semonite and Houston were briefed on Fort Knox projects and then recognized several members of the staff for their support and work in delivering the program.



Maj. James Covington

Civil Works

Cannelton lock dewatered for critical repairs



Carol Labashosky

The repair crew surveys the bottom of the Cannelton miter gate. From left to right are Tom Thomas, maintenance worker; Leland Bennett, welder; and Ben Heisel, working shift leader.

Carol Labashosky, public affairs

Repairs are being done on the Cannelton Locks and Dam, on the Ohio River in Indiana. Before work could begin, the 1,200 foot lock chamber had to be dewatered, which involves pumping the water out giving the crew room to work in the nearly-empty chamber. Bulkheads were put into place to keep water out of the chamber at both ends. The miter gates are being inspected and worn out components on the lower gates will be replaced. The work began in June and is expected to continue through the fall of 2017.

In March 2017, the operators noted that the downstream middle wall gate would not miter – or close – properly against the bottom of the chamber, referred to as the miter sill. Engineers performed an inspection of the gates and discovered that critical components were failing and causing the wall gate to hit the submerged sill, preventing it from closing all the way.

To do the work on the lower gates, the gate leaves – or swinging doors – will be jacked up by four 200-ton hydraulic rams and specialized guides. The anchor arms, pintle ball and bushing, and contact blocks will be removed and replaced. The 250-ton miter gate leaf rests on a pintle ball which allows it to pivot. The gate is secured to the wall at the top of the structure by a gudgeon pin and anchorage components.

Strut arms allow the gate to swing open and closed. These components are all part of what makes the gates operate at the top and at the bottom where the gate is attached to the guide wall.

"The work will replace critical components of the downstream middle wall gate, and greatly improve the reliability of the chamber so navigation can continue," said Craig Moulton, chief, maintenance, technical support branch, Louisville District. "If these repairs were not performed, the gudgeon bushing would continue to deteriorate until the chamber could not be operated any longer."

"At some point in time, it could get so bad that [the Corps] would have to shut the chamber down," Moulton continued.

Bob Szemanski, project engineer, U.S. Army Corps of Engineers Pittsburgh, operations and maintenance section, who is in charge of repairs, said the work is challenging.

The medium capacity fleet of the Regional Rivers Repair Fleet, Huntington, West Virginia, is performing the work with all Army Corps of Engineers personnel, using floating cranes, towboats, barges and support vessels. In addition, the specialized jacking guides will be used to secure and stabilize the miter gate while work is taking place. Because the 600-foot chamber will be used while work is being done on the 1,200-foot chamber, some delays are inevitable. Tows will have to be split with each half locking through one at a time. "Cannelton locked 52 million tons of cargo in 2016," said Moulton. "The queue will build up and the time of delay will change daily."

Olmsted Left Boat Abutment nears completion

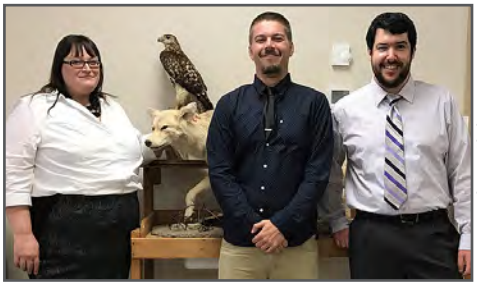
Carol Labashosky, public affairs

At the Olmsted Locks and Dam project, the southernmost (Kentucky bank) structure of the wicket dam will be constructed 'in the dry' inside a thin walled cofferdam. The crews inside this structure are 'mucking out' river infill that deposited during the winter months. Now that the river is in lower stage, the team works to remove that sediment and expose the previously set rebar mat and tremie concrete to continue work on the Left Boat Abutment (LBA) and the Navigable Pass 12B structure. The LBA is the launching point for the wicket lifter barge to raise the wicket dam in the future. The use of this cofferdam allows for the team to mitigate environmental risks and advance the project schedule by a year. From the photo's vantage point, the water level is approximately 30 feet higher outside the cofferdam walls.

Capt. Jeremiah Nichols

"Despite undesirable early season river conditions progress on the LBA remains on track validating once again this risk mitigation initiative by the project delivery team," said Mike Braden, chief, Olmsted Division. Accordingly, all permanent cast-in-place concrete for this feature will be complete within the 2017 low water season."

Miami U. students earn credit at Corps projects



MUM Geology Club

Sarah Myers, MUM Geology Club lead, Riley Allen and Eric Haas completed GIS projects as part of a partnership between the Corps and Miami University Middletown.

Samantha Bachelder, William Harsha Lake

College students know that volunteering in their chosen career field will improve chances of finding that elusive full-time position after graduation. However, school, work and family can create conflicts that deter students from forming those valuable volunteer relationships. It can be a challenge to juggle commitments and still find time to work on a project that is unpaid and often unrelated to current coursework, even if the reward would be great.

Understanding the need for students to gain real-world experience before graduating, Dr. Tammie Gerke and Dr. Ziying Jiang, both professors at Miami University Middletown, Ohio, collaborated with Corps of Engineers Park Ranger Samantha Bachelder to come up with a program in which students could earn experience while fulfilling course requirements.

Ultimately, the team found a way to integrate students into a program that would count as their final project for an upper-level geography course on Geographic Information Systems. For the class, students must work with a professor or outside agency to complete a GIS project.

"Students were instructed to treat the project like they would a job given to them by a client," explained Bachelder. "They completed the project based on a timeline decided between the client and themselves, and also had to set up meetings and give presentations to the client to better understand the importance of good communication and to get feedback on their projects."

At the beginning of the semester, Bachelder met with the professors to map out possible GIS projects that students could take on for the Corps of Engineers at Caesar Creek Lake. Students were given a list of projects and had the option to choose one based on their interests. Two students chose to work on projects with the Corps; Miami University Middletown's Geology Club took on another.

"This program helps the students in the course and also allows other groups like the Geology Club to get involved," said Bachelder. "Students from geology and environmental majors are able to be a part of a service project without having to make the big commitment of a solo endeavor."

The spring semester 2017 projects included mapping of the vegetation type density in the Hopewell Prairie, mapping the Caesar Creek Lake bridle trails, and the mapping and geological analysis of the Caesar Creek Lake emergency spillway.

During the semester, students had meetings with Corps staff, communicated their progress, and then presented their final projects to the Corps in April. Representatives from Miami University also attended the presentations.

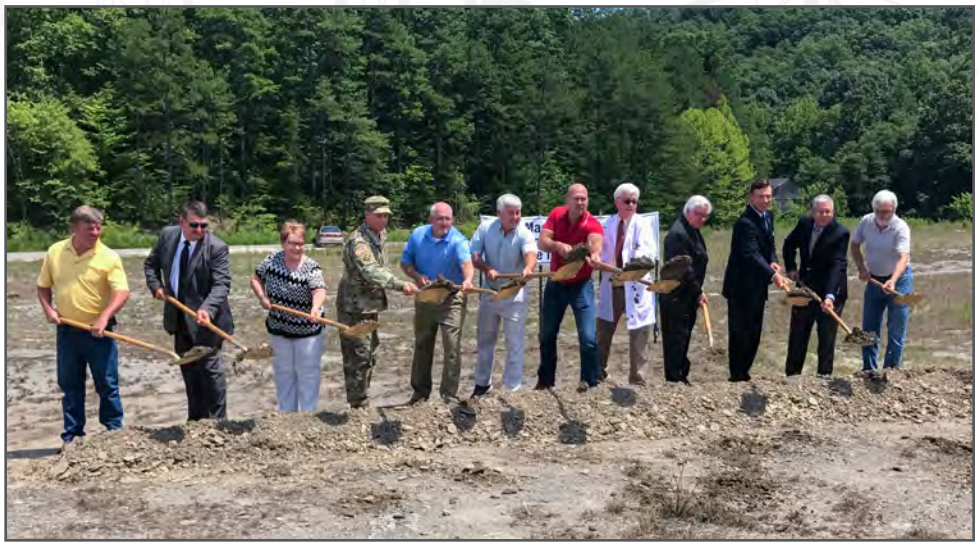
"The students did a phenomenal job on their projects," said Bachelder. "They presented relevant, well-organized information to the Corps, which can be used toward bettering visitor assistance, assisting with natural resource projects or increasing our understanding of potential risk factors during a flood event. The program provides an excellent opportunity for students to gain real world experience while also contributing valuable data to a federal land agency."

The partnership program will continue into the fall semester with projects already in the works at both Caesar Creek Lake and William H. Harsha Lake.

Corps breaks ground on Eastern Kentucky infrastructure project

On Aug. 2, 2017, Louisville District Deputy Commander Lt. Col. Robert Newbauer and Amy Babey, chief, planning section, attended the groundbreaking for the Magoffin County Section 531 environmental infrastructure project in Salyersville, Kentucky. More than 100 people attended the ceremony, including U.S. Rep. Hal Rogers, state Sen. Brandon Smith, and state Rep. John Blanton.

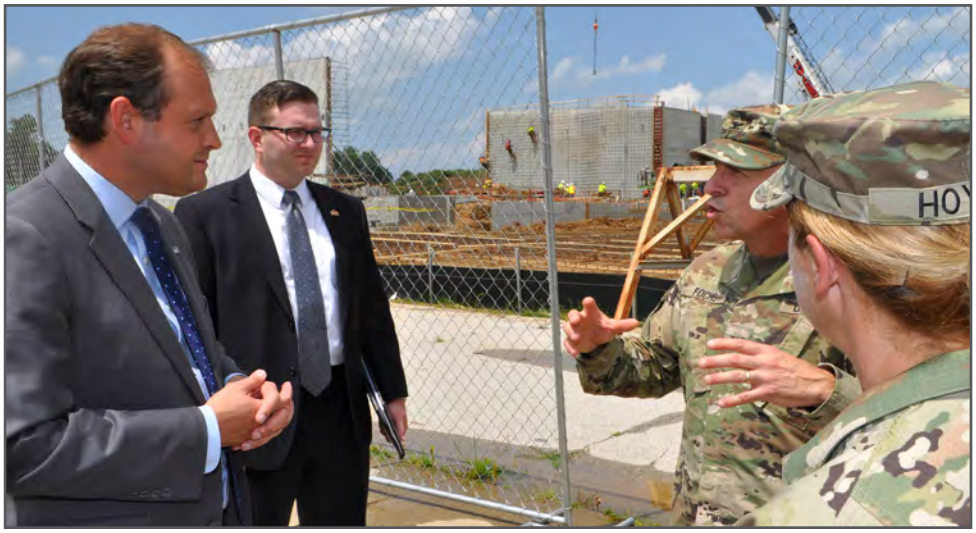
Newbauer spoke to attendees about the project—which includes the planned extension of sewer service to the new industrial park and the elimination of numerous septic tanks in Salyersville and the greater county area—and the on-going infrastructure partnership with Eastern Kentucky PRIDE, Inc., a nonprofit organization focused on economic and cultural growth in southern and eastern Kentucky through improving water quality, cleaning up solid waste problems, and advancing environmental education, to improve living conditions for residents while enhancing the potential for tourism industry growth in the region.



Amy Babey

Military

BGAD shipping center to support warfighters



Mark Henry, Blue Grass Army Depot

Col. Norbert Fochs, Blue Grass Army Depot commander, discusses the depot's Consolidated Shipping Center with Kentucky's sixth congressional district Rep. Andy Barr at the construction site in Richmond, Kentucky, Aug. 10. The $13.3 million facility will permit more efficient and effective ammunition outloads to Joint Warfighters. Others pictured include (left to right): Joe Fryman, state field representative for Rep. Barr, and Col. Heidi Hoyle, commander of the Joint Munitions Command in Rock Island, Illinois, BGAD's higher command.

Mark Henry, Blue Grass Army Depot

National Museum of the U.S. Air Force's fourth building earns top rating for energy and environmental design

U.S. Air Force

The LEED Gold certification plaque unveiling ceremony at the National Museum of the U.S. Air Force. (From left to right) Mr. Philip L. Soucy (chairman, Board of Trustees, Air Force Museum Foundation, Inc.), Lt. Gen. (Ret.) John L. Hudson (director, National Museum of the U.S. Air Force), Mr. Kyle Rooney (senior vice president, Turner Construction Company), Mr. Brian Curtin (president/CEO and chairman of the board, BRPH), and Lt. Col. Robert Newbauer (deputy commander, USACE Louisville District).

Rob Bardua, National Museum of the U.S. Air Force

In a ceremony Aug. 3, 2017, the National Museum of the U.S. Air Force announced its fourth building has achieved the rare distinction of LEED (Leadership in Energy and Environmental Design) Gold certification as determined by the U.S. Green Building Council.

The $40.8 million, 224,000 square-foot fourth building, which was privately financed by the Air Force Museum Foundation, Inc., opened in June 2016, and houses four galleries – Presidential, Research and Development, Space and Global Reach, along with three science, technology, engineering and mathematics (STEM) Learning Nodes.

The Gold certification was earned in part by successfully incorporating an innovative design with locally sourced building materials, including a focus on those made from recycled content; optimized energy performance from new mechanical and electrical systems; and water efficient landscaping.

Some notable statistics regarding the fourth building's energy and environmental design include:

- 91% of building materials were locally sourced
- 75% of non-hazardous waste was recycled
- 45% of building materials came from recycled content
- 39% in energy savings from new mechanical and electrical systems
- 36% decrease in water usage

Although the building was designed and built with environmental considerations in mind, the project was only contractually obligated to achieve LEED Silver certification. However, the fourth building planning, design and construction teams came together with museum staff and implemented additional measures to obtain the additional points necessary for LEED Gold certification.

The team worked tirelessly to ensure the fourth building was designed in a way that fully maximized its efficiency, said BRPH Architects-Engineers, Inc., President & CEO Brian Curtin.

"The primary design strategies used to achieve LEED Gold were two-fold – reduce consumption and replace resources," said Curtin. "By incorporating efficient lighting, mechanical and plumbing systems, the fourth building is seeing a 39 percent energy cost savings and preserving more than 135,000 gallons of water a year."

Turner Construction Company, the primary contractor on the job, made it a priority to use as many environmentally-friendly building materials as possible from around the region.

"Nearly 40 percent of the total building materials content was manufactured with recycled materials," said Kyle Rooney, Senior Vice President, Turner Construction Company. "Additionally, over 30 percent of the total building materials were extracted and manufactured within 500 miles of the project site."

The U.S. Army Corps of Engineers (USACE), Louisville District, which executes a $1 billion program annually, managed the project. However, since the U.S. Green Building Council unveiled their rating system in 2000, only a handful of USACE projects have been awarded the coveted LEED Gold certification. This rare honor is something to be extremely proud of, said Lt. Col. Robert Newbauer, U.S. Army Corps of Engineers Louisville District Deputy Commander.

"What an accomplishment by all the members of the project delivery team," said Newbauer. "What truly sets this project apart from others is that this particular addition was privately financed by the Air Force Museum Foundation, and is the first non-appropriated funds project that the Louisville District has participated in and achieved a LEED Gold rating."

According to National Museum of the U.S. Air Force Director, Lt. Gen. (Ret.) Jack Hudson, achieving LEED Gold certification is a win-win situation for both the museum and the environment.

"The museum is filled with stories of Airmen who have gone the extra mile to serve our country, so it is only fitting that we go the extra mile to achieve LEED Gold certification in the fourth building," said Hudson. "These environmentally friendly measures not only serve the museum well by keeping our utility bills down, but also allow us to do our part in taking care of our planet and preserving its natural resources."

The National Museum of the U.S. Air Force, located at Wright-Patterson Air Force Base near Dayton, Ohio, is the world's largest military aviation museum. With free admission and parking, the museum features more than 360 aerospace vehicles and missiles and thousands of artifacts amid more than 19 acres of indoor exhibit space. Each year about one million visitors from around the world come to the museum. For more information, visit www.nationalmuseum.af.mil.

Environmental

Corps piloting new treatment at Nike C-47

USACE

Field work at Nike C-47 included injecting sodium lactate into the groundwater to reduce TCE levels.

Katie Newton, public affairs

In July 2017 the U.S. Army Corps of Engineers Louisville District began a pilot study to treat contaminated groundwater at a Formerly Used Defense Site (FUDS) in Hobart, Indiana.

The goal of the study is to demonstrate a rapid reduction in contamination of a small and shallow groundwater plume containing trichloroethylene (TCE), and expedite the cleanup process at the former Nike C-47 Launch Area.

"We hope the pilot study demonstrates a quick and effective treatment method to reduce TCE concentrations," said Corey Knox, Louisville District chemist.

This treatment method would be the first for Louisville District for TCE reduction.

The treatment being used includes injecting 110 gallons of a solution, consisting primarily of sodium lactate and microbes with nitrogen, directly into the plume in an effort to reduce TCE concentrations.

The solution is a proprietary blend of neutral pH fatty acids combined with a nutrient blend for use in enhanced anaerobic reductive dechlorination. Reductive dechlorination can occur naturally when microbes are present in the groundwater under the correct geochemical conditions.

The three days of fieldwork in mid-July went well. "The groundwater appeared to achieve complete saturation of the solution which is important to be effective," said Clayton Hayes, Louisville District project manager. "The upcoming sampling results will tell how successful the pilot study is."

After completion of the injections, groundwater samples will be taken from three separate groundwater monitoring wells at 14 days and 30 days and will be taken again at the 60-day interval to assess the concentration levels of TCE.

The study will not only assess TCE treatment effectiveness, but also provide insight into field parameters and the extent of solution distribution required for future remedial actions at other sites with similar geological conditions.

A final report this fall will provide the analysis of the results and can be used by the district to determine whether the treatment should be considered as a remedial alternative on other sites.

"This innovative treatment technique promotes an economical, green, and sustainable remediation method that is non-harmful to the environment," said Hayes.

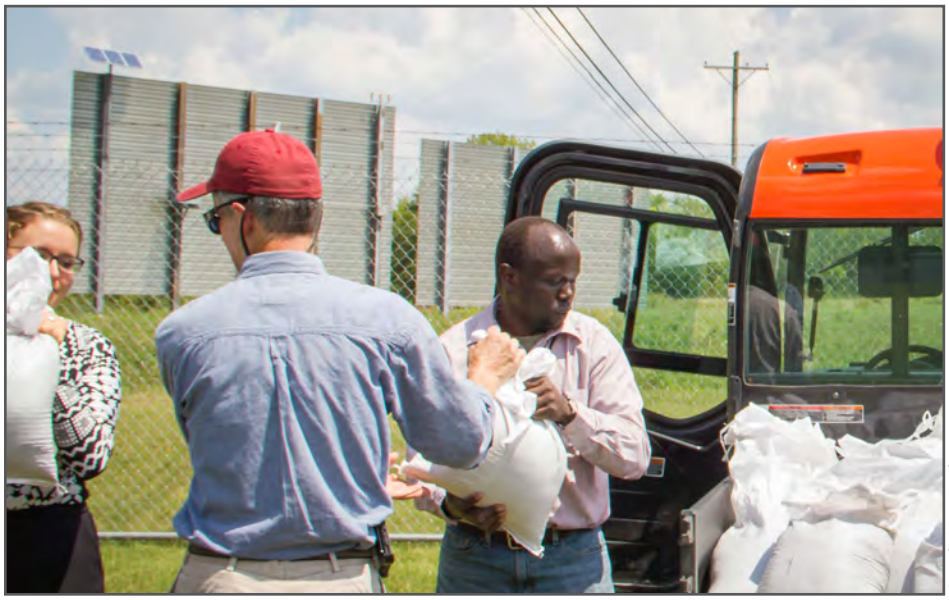
Nike C-47 was used during the Cold War by the U.S. Army Air Defense Command as a Nike Hercules guided missile site to protect the cities of Chicago and Gary against a possible attack. As part of the FUDS program, the U.S. Army Corps of Engineers Louisville District is managing the cleanup of the site for the Department of Defense and looking for more effective ways to remediate the site.

Emergency Operations

Flood fight team trains for emergency assistance

On Aug. 2, 2017, Louisville District Emergency Operations held a training for district employees who will serve as flood fighters and mission managers during emergency assistance missions. The purpose of the training was to educate the team on the Corps' flood fighting mission, promote the knowledge and use of proper flood fighting techniques and to improve communication at all levels of the flood response operation.

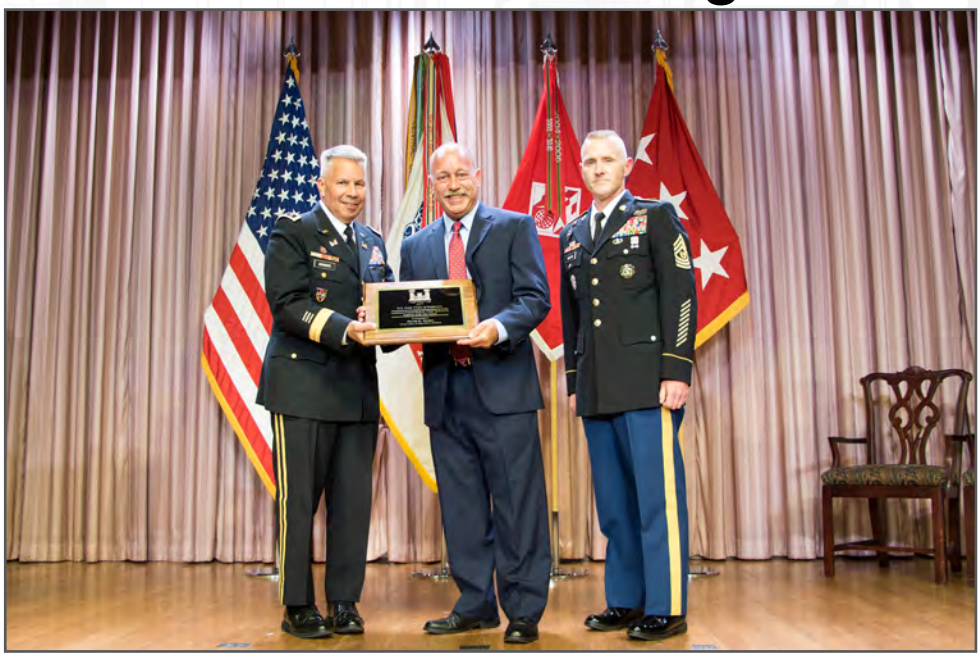
Team members participated in hands-on activities at McAlpine Locks and Dam, Louisville, Kentucky, such as filling and placing sandbags and setting up other flood barriers, including the Hesco barrier and TYPAR Geocell.



Sarah Mattingly

Flood fight team members Lucia Shurr, Jim Kelly and Mabior Ghack move sandbags as part of a hands-on training exercise at McAlpine Locks and Dam Aug. 2.

Kiefer wins coveted engineer of the year award



Leanne Bledsoe

Lt. Gen. Todd T. Semonite, chief of engineers and commanding general of the U.S. Army Corps of Engineers, and USACE Command Sgt. Maj. Bradley Houston, present the USACE Engineer of the Year award to David Kiefer at the National Awards Ceremony in Washington, D.C., Aug. 2, 2017.

Carol Labashosky, public affairs

David Kiefer, Louisville District, U.S. Army Corps of Engineers civil engineer and regional technical specialist, has been awarded the national USACE Engineer of the Year Award.

Kiefer serves as a technical expert during all phases of design and construction for a wide variety of civil works and military projects. Over the course of his 28-year federal career, Kiefer has been recognized within the organization and the geotechnical and materials community of practice as an expert, particularly in the specialized field of concrete and materials.

Kiefer has been involved in high-profile and technically challenging projects. He was a key team member working on the district's high-impact civil works construction projects including the Olmsted Locks and Dam project, McAlpine roller compacted concrete, and Smithland and Cannelton hydropower projects. These projects successfully used innovative construction methods including roller-compacted concrete, in-the-wet dam construction with tremie concrete and self-consolidating concrete. Most recently, he was a key team member on the Olmsted Left Boat Abutment in-house design team.

He is an authoritative source of technical leadership and guidance to key engineering and construction personnel within the region. He was a team recipient of the 2014 USACE Innovation of the Year award for his work on the Olmsted Lock and Dam self-consolidating concrete design and implementation. He has also consulted with Chicago District on the McCook Tunnel project and Nashville District on the Center Hill roller compacted concrete buttress.

For military projects, Kiefer contributed to the design and construction of airfield pavement systems, notably for his technical understanding of requirements for airfield pavement design and construction. His work has been instrumental on numerous projects for the 101st Airborne Division at Fort Campbell, Wright Patterson Air Force Base and other installations.

"One of his greatest strengths is his ability to work effectively with design team members, construction managers, consultants and contractors to maintain a spirit of partnering and achieve the goals of each project," according to the nomination.

Kiefer also serves as a mentor to junior and senior professionals in the district, and is an invaluable source of technical expertise for other districts within the Great Lakes and Ohio River Division and the Corps of Engineers.

"I was completely shocked, humbled and very honored when I received the email that I had been selected for the award," said Kiefer. "I had not been informed that I had been selected as the division nominee so the announcement came as a complete surprise. I was able to attend the award ceremony at Headquarters with my wife and it was an incredible experience. I met both Lt. Gen. Todd T. Semonite, Commanding General of the U.S. Army Corps of Engineers and USACE Command Sgt. Maj. Bradley Houston at the ceremony and discussed the Olmsted project and its recent successes with them. Overall, it has been a tremendous experience, and I am extremely honored at this recognition."

"We joke with David around the office about his passion for concrete, but all jokes aside, he is truly one of the Corps' premier experts in concrete, materials and geotechnical engineering," said Ryan Jefferies, chief, geotechnical design and levee safety. "David is very humble, but his individual contributions make a tremendous impact in delivering our military and civil works programs."

Workforce & Family Support

Did you know?

Critical Incident Stress Management is a program that provides peer support and resources in response to stressful work incidents, like public drownings, boating accidents, or the death of an employee. CISM includes pre-crisis preparation, stress education and post-event response. It can accelerate recovery in people having normal reactions to abnormal events.

For more information, visit http://corpslakes.usace.army.mil/employees/cism/cism.cfm.

Questions?
LRL-FamilyReadiness@usace.army.mil