

Winter 2017/2018

Engineering solutions for the mid-Atlantic & around the world

Chesapeake Engineer

Magazine



**Survey Vessel
CATLETT is
Christened**



U.S. Army Corps of Engineers
Baltimore District

On the Cover: Angela Leone christens Survey Vessel CATLETT, alongside Baltimore District Commander Col. Ed. Chamberlayne (at left); Army Corps Command Sgt. Maj. Bradley Houston; and CATLETT Captain Ryan Schuman, during a dedication ceremony in Baltimore's Inner Harbor, Aug. 24, 2017. (U.S. Army photo by Evan Dyson)

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The mission of the U.S. Army Corps of Engineers, Baltimore District, is to deliver vital public and military engineering services; partnering in peace and war to strengthen our Nation's security, energize the economy, and reduce risks from disasters.

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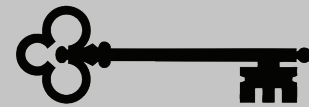
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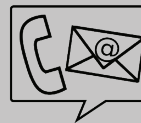


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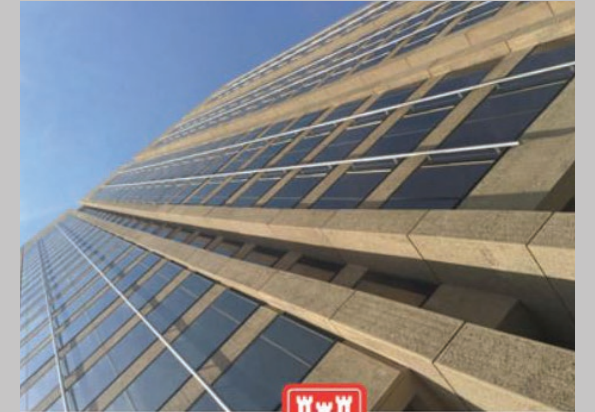
After nearly 25 years in the City Crescent Building, Baltimore District's Headquarters has moved to a nearby downtown Baltimore location — 2 Hopkins Plaza.



Farewell, CCB!
Hello, 2HP!



Same phone numbers, same emails,
new address:
U.S. Army Corps of Engineers, Baltimore District
2 Hopkins Plaza
Baltimore, MD 21201



A new era began Jan. 16, 2018, as more than 600 Baltimore District employees relocated to 2 Hopkins Plaza.

Among new cubicle features, more efficient use of space, greater access to natural light, new technology pieces and upgraded amenities, the team is excited to continue to serve the nation and region in its new home.

Thanks to General Services Administration's Computers for Learning Program, all usable electronic equipment that did not make the big move, such as computers, monitors, calculators and keyboards, will be sent to Booker T. Washington Middle School in Baltimore to set up computer learning labs. Booker T. also has access to excess office supplies and furniture. Remaining items not used by the school will go to prisons to aid in educational and vocational training through Federal Prison Industries, known as UNICOR.



Col. Edward Chamberlayne will complete his tour of duty as commander of the U.S. Army Corps of Engineers, Baltimore District, on July 13, 2018. While his quest to find the perfect crab cake will continue long after his change of command ceremony, the District's 52nd District Engineer took a moment to sit down with editors of "The Chesapeake Engineer" for a candid interview in which he reflected on his time with Baltimore District and discussed his successes, challenges and hopes for the future.



Col. Ed Chamberlayne takes in the view aboard a Black Hawk Helicopter courtesy of the Pennsylvania Army National Guard, while conducting flood risk management site visits, Nov. 7, 2016. (U.S. Army photo by Becca Nappi)

How would you characterize your time at Baltimore District?

This has been the best experience and most challenging position of my entire Army career. There are days that I certainly feel like I'm at the ultimate ends of my multitasking ability because there are so many mission areas that Baltimore District is involved in. But that truly makes this job a lot of fun and really interesting.

What makes Baltimore District unique?

When I speak at Industry events, I always say that we have nearly every mission within the U.S. Army Corps of Engineers that you can find, and then some.

My time with Europe District and commanding Charleston District prepared me to go into yet a third district, but neither prepared me for the span of missions here in Baltimore.

The sheer diversity of all the missions in the District and working with a wide-range of stakeholders makes us unique. We have missions around the world — around the country — and we have everyone from archaeologists to economists working here. It's amazing the talent we have, from working on radiological decontamination of Navy vessels on the west coast to leasing homes in Poland for work supporting the Missile Defense Agency.

Baltimore has an incredible reputation for being a little bit understated and below the radar, but we are exceptional at a wide number of missions. Through Real Estate Division, we support customers across our area of responsibility and across the country and internationally, and other Corps districts come to us for our expertise. They also come to us from across the country for our expertise in radiological and munitions work and for our support to the Intelligence Community. It's pretty interesting and amazing to me the in-house capability we have within our Environmental Munitions and Design Center to identify and make areas safe from not only buried munitions but also chemical and radiological contamination. We also have unique missions at RSFO, or Real Property Service Field Office, in which we support extremely important and

strategic partners that we can't really share with many people for good reason, but we've had a lot of proud accomplishments.

Our Washington Aqueduct mission and project is the only place in the world in which the Army treats water, and the team there deals with a number of entities from DC and northern Virginia and federal, state and local partners.

What was your biggest surprise during your tenure here?

There were a lot of them! The first surprise would be the importance and controversy surrounding oysters. I thought I knew a lot about the Baltimore District prior to coming here, but I was completely caught off guard with the politics surrounding oysters and the strong opinions on either side of oyster restoration...and then the frustrations in getting permits for oyster aquaculture. At times, we try to compare programs by dollar value and relate that to importance, but for a \$5-million program for Maryland, it can consume my time...and for good reason — it's an important part of our history, and it's important to the Chesapeake Bay. But I was not prepared for it. I was also impressed by the capability and knowledge we have at the District in Regulatory, Civil Works and Planning, and how they work with a multitude of partners.

Besides oysters, what's another key Civil Works mission ahead, and what does the District need to do to meet this mission?

There are two: the Mid-Bay Island Project and to find opportunities for private investment (public private partnerships or P3) in our Civil Works infrastructure. As for Mid-Bay Island, we need it desperately to be funded for both design and construction. It is crucial to restoring critical island habitat in the Chesapeake Bay, and, in the near term, it is an ideal location to place our clean dredge material from the Baltimore Harbor channels. If we don't figure this out soon, we will run out of locations to place dredge material, which is essential in keeping the Baltimore Harbor navigation channels properly maintained. As for P3, it is a new area for us to explore to increase investment in our aging infrastructure in the Potomac and Susquehanna river basins. We have to get more creative in how we fund upgrades and improvements to our projects.

COLONEL EDWARD CHAMBERLAYNE

What was the most challenging project?

I can only comment on the projects I was directly involved in. STURGIS was certainly unique because it's the decommissioning of a vessel that the Army doesn't perform very often, let alone the Army Corps of Engineers. Radiological decontamination is a very unique capability that we have in this District. It was also a vessel that was never designed to be taken apart, and, by the way, was named after a former chief of Engineers, so there's a lot of Army Corps history associated with it. The work was also performed under a different type of contract that we don't typically use. This was a project identified to me as a priority way before I even took command.

What is the project, event, program or mission that stands out to you?

I cannot pick one. I have a whole laundry list of projects and events that come to mind. The CATLETT Survey Vessel christening ceremony was amazing; I am proud of how we treated Harold Catlett's family at the event. We established an integrated program office for East Campus (the cybersecurity campus on Fort Meade, Maryland), which was a difficult decision that I had to make, but it sets us up to continue to meet our customers' and stakeholders' expectations and solidifies this \$4.5 billion and growing program. I will also be connected to our Headquarters move to 2 Hopkins Plaza that occurred in January, as it happened under my watch with a very capable team, and we're very excited about it. I've also spent a lot of time on some key projects to ensure their success, to include, like every other District commander since 1993, the Spring Valley munitions cleanup project. This project is interesting because I grew up in the D.C. area hearing about it even before I joined the Army. For the STURGIS decommissioning project in Galveston, I've spent a lot of time with the project manager and contractor. I've also spent a lot of time with Intelligence Community partners to ensure we're meeting their expectations. I've also been a part of more than a dozen ribbon cutting events and steel topping off ceremonies. These are important because it's about the whole team meeting milestones and celebrating successes.

One of the most memorable moments

was when we worked with the Pennsylvania Army National Guard to fly in a UH-60 Blackhawk and land on top of the Mansfield Levee outside of Tioga in a snowstorm. That was pretty fun. We got all of the staff at Tioga-Hammond Dam into the Blackhawk to tour several flood risk management projects from the helicopter. The staff own and operate these projects, but they had probably never seen them from the air before.

During your command, the District established a small projects team for Installation Support as a way to address evolving needs of military customers. Could you describe this team's impact, and how you see it progressing?

Every district in the Corps is trying to find ways to make small projects more affordable while still meeting our customers' expectations. We are about two years into this effort with an ever-expanding portfolio of projects and customers. We've even recently started to support the Navy at one of their installations in southern Maryland. We are still looking at the results and adjusting our business processes for this effort, but we have to make this successful. It is the future to maintain facilities for many of our customers.

What goals and objectives did you have coming into this command?

Every incoming commander tries to make an assessment before they come in, and then they make another assessment on the job within the first 90 days because we have such a limited time to really make an impact. My assessment before taking command was that we had some morale issues and that we were short staffed in some areas in people and capabilities, so most of my efforts both personally and professionally were to improve morale and do whatever I could to improve our hiring ability to ensure we recruit and retain talent at the District. That's a very hard task. I hope I've made an impact at improving both areas.

Another important part of my command was to be able to go out to every office that we have at least once a year, and there are many, to meet with staff and talk about issues and concerns.

The mantra I came into this organization with was People, Delivery and Communications, and I hope we made a difference in each

of these areas and will continue to do so. We've initiated several new methods for internal and external communication, including this magazine, which I hope puts into perspective for our workforce just how important our work is, and I hope it provides our stakeholders with more trust and confidence in our capabilities.

What will you miss the most?

That is very difficult for me to answer without getting a little emotional about it. This is the best job I've ever had in the Army, and I've spent my entire career preparing for it and then I have to leave after three years! I love working with our team; solving problems with our customers and stakeholders; representing our District at industry events and community meetings; and visiting with our folks out in the field. I WON'T miss dealing with difficult personnel issues but that goes with the territory... I would gladly remain as a permanent District Commander but that isn't how our Army leadership development system works.

What's next for you?

I'm ending my military career after 25 years of service and hopefully starting a second career, and I have no idea what that will be. I've had two jobs in my life. I've been a lifeguard, and I've been in the Army. It's an exciting time, but it's also a bit sad. It's the fear of the unknown and maybe the excitement of the unknown.

What advice have you given to the incoming commander?

The good news is Col. John T. Litz and I know each other. We've changed command before together, so this will be the second time we've done this transition. He assumed command of the Charleston District after me. I'm a huge believer of a long transition, so I've already started part of that transition, and in my remaining several months here, I have events and activities scheduled between the two of us to ensure once he is on board July 13, he hits the ground running. He has done this job before just not at this size and complexity. My advice is to not necessarily worry about the business processes or knowing every project and mission, but knowing your people and their needs and concerns. Continue making a difference for our people, delivering to our customers, and communicating with our team. ■

Harold Catlett's sudden death shocked his former team members at the U.S. Army Corps of Engineers. When the time came for Baltimore District to replace its aging survey vessel, it only seemed fitting that the new vessel be named after a man who inspired so many.

A sorrowful surprise

When Harold Catlett passed away suddenly April 25, 2014, his friends and family were in disbelief.

Steve Golder, chief of the Survey and Debris Removal Section for the U.S. Army Corps of Engineers, Baltimore District, still remembers it.

Catlett's sister told him on a Sunday, a couple days after his passing, and he notified teammates who had worked with Harold.

"Everyone was shocked," Golder said. "It was a major surprise to us. People took it very hard."

Harold Catlett, the man

Catlett grew up in Baltimore County and joined the Marines in 1973 after graduating from Woodlawn High School.

After four years in the Marines, he was honorably discharged as a corporal and started his nearly 30-year career with Baltimore District.

Catlett started as a land surveyor; however, in the 1980s, the District was contracting out more of its in-house land surveying, so he was moved to Fort McHenry in 1985 to work as a hydrographic surveyor — helping to map channels to ensure safe and efficient navigation. Baltimore District's fleet operates out of Fort McHenry.

"Harold was a very nice person, and a hard worker," Golder said.

He also noted that Catlett earned a reputation for producing quality work.

"It got to the point where all the project managers wanted him to work for them because they were so confident in him," Golder said. "They just felt that if Harold did the job, it was going to be correct."

Retiree Tom Conroy, who worked with Catlett first as a land surveyor and then as a hydrographic surveyor with Baltimore District, echoed the sentiment of the quality of Catlett's work and his positive disposition.

"Harold was meticulous about the work he did," Conroy said. "He was very, very level headed. I don't remember him ever raising his voice. But he did darned good work. He cared about the work he did; he treated his people very well."

Catlett spent most of his career in navigation working on the smaller survey vessels known as the hydros, which are stored on land and generally towed from job to job via a trailer hitch. In this role, he acted as a mentor for countless hydrographic surveyors new to the Corps and new to the trade.

"On a small boat, you've gotta take care of the boat; you've gotta get the boat down there; you've gotta get the boat in the water; you've gotta set up everything, so you're doing so much," Golder said. "New people coming in, that's how you learn how to be a hydrographic surveyor is working on the small boat because you took care of everything, and Harold was the one who showed you what to do and then let you do it. Everybody who went on his boat, they wanted to be with him, and they learned a lot."

Tony Sazaklis, a hydrographic surveyor who has been with Baltimore District since he first started as seasonal help in the 1980s, remembers Catlett as a patient teacher.

"Harold was an easy, quiet teacher who blended in with the student; he did not make a distinction that he was above you," Sazaklis said. "He showed another way of doing something and stood by while you did it over and over again, even with the same mistake you made. He just laughed and did it with you again."

In addition to Catlett teaching new hydrographic



surveyors the basics of the job, he also taught the team the changing business of surveying over the years.

"Harold helped the entire survey section to transition from lead line hydro surveys to what we do today," Sazaklis said, referring to an older method of determining depths by dropping a rope with graduated depth-markings and a lead weight attached to the end. "I helped him numerous times unload computers from the boat to the hotel room that he stayed in while on duty. He would work on them until he learned the new technology, so he could show it to the others."

Naming Survey Vessel CATLETT

Sazaklis said that it only makes sense to name the District's new survey vessel, complete with the latest available technology for mapping channels, after Catlett.

"Naming the boat after Harold was a great idea," Sazaklis said. "Why? Very simply, he represents a new era of surveying for the District from lead lines for boats, chains, tapes, and turning angles, to GPS technology on boats."

The discussion of replacing Baltimore District's 40-year-old Survey Vessel LINTHICUM had been around for a while, but it was originally just assumed to be named either LINTHICUM II or Survey Vessel CHESAPEAKE in homage to the Chesapeake Bay.

Survey Vessel LINTHICUM, built in 1976, was named after Herbert Linthicum, a World War II veteran who worked in Baltimore District for 23 years from the 1940s through the 1960s.

After Catlett's passing, Golder said the team began suggesting naming it after their late respected teammate.

"I asked everybody what they wanted to name the boat, and, overwhelmingly, they said the CATLETT," Golder said. "The majority of the time, you see plaques on boats named after people who've passed sometimes before you were born. To know that the boat is named after somebody that you know, they all feel pride in that."

Conroy noted that the naming of the vessel also speaks directly to Harold Catlett — teacher, teammate and friend.

"To me, it's a way to respect the work that he did over his years. I think this vessel will set some very high standards, and it keeps his memory and his name alive."

A large crowd gathered for Survey Vessel CATLETT's official dedication and christening ceremony in Baltimore's Inner Harbor Aug. 24, 2017. Attendees included Harold's family, coworkers and Corps partners, including the Maryland Port Administration.

"This port is a huge economic engine, and Harold was right there helping to make sure cargo could get in and out," said Chris Correale, MPA director of Harbor Development. "He was known for his smile, graciousness and can-do attitude. He was an expert at his job and a tremendously-loyal team member. You don't get much better than Harold Catlett." ■

Survey Vessel CATLETT christening and dedication ceremony in Baltimore's Inner Harbor, Aug. 24, 2017. (U.S. Army photo by David Gray)

Beloved surveyor's legacy lives on in new vessel

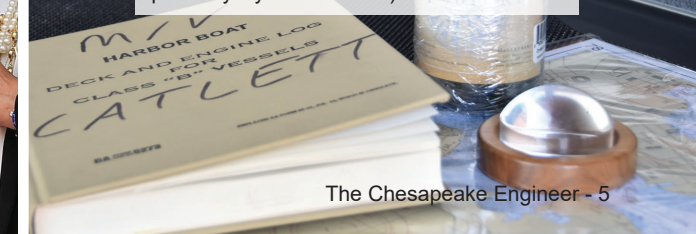
By Chris Gardner

CATLETT Fast Facts

- **61' 4"** long
- **3' 2.5"** draft
- **38+ knots (43 MPH)** top speed
- **1,052-gallon** fuel capacity
- **Weighs 35.5 tons**
- **Two 1K-horsepower** main engines
- **Multi-beam sonar**
- **Built by Technology Associates, New Orleans**
- **Baltimore District's primary workhorse for surveying the 87 miles of deep draft channels leading to the Port of Baltimore**



At left: A commemoration plaque presented to Angela Leone, sister of the late Harold Catlett, by Col. Ed Chamberlayne, Baltimore District commander, at the dedication and christening ceremony, in Baltimore's Inner Harbor, Aug. 24, 2017. (U.S. Army photo by David Gray)
Below: Survey Vessel CATLETT's log book captured prior to the ceremony. (U.S. Army photo by Cynthia Mitchell)



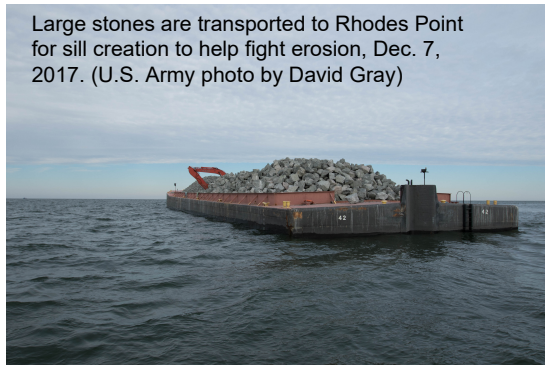
Work is starting on two critical projects to benefit Smith Island residents — a navigation improvement project at Rhodes Point and dredging of the Big Thorofare and Twitch Cove federal channels.

To understand the significance of these projects, one must comprehend why the island’s preservation is so important.

Home to a few hundred year-round residents, Smith Island is Maryland’s only remaining inhabited offshore Island group, as touted by a sign standing along the main entryway to the island. Smith Island is steeped in history, both local and national. Though it was charted by Captain John Smith in 1608, its namesake stems from an early landowner, Henry Smith. The island is famous for its fishing, crabbing, layered cake and distinct dialect and has garnered more attention as of late due to erosion eating away at its shoreline and sediment buildup clogging its vital transportation arteries.



Navigation improvement project underway at Rhodes Point, Dec. 7, 2017. (U.S. Army photo by David Gray)



Large stones are transported to Rhodes Point for sill creation to help fight erosion, Dec. 7, 2017. (U.S. Army photo by David Gray)

“I’m very proud of our collective team from the federal, state and local governments that helped get these key projects funded and the contracts awarded,” said Col. Ed Chamberlayne, U.S. Army Corps of Engineers, Baltimore District commander. “These projects will not only improve transportation for the residents of Smith Island but will also help protect them against sea-level rise and coastal erosion, while also helping to improve the environment.”

Sill excavation as part of the \$6.88-million Rhodes Point project began in November 2017. The work is being performed by Coastal Design & Construction Inc., a small business out of Gloucester, Virginia.

The project, in coordination with Maryland Department of Natural Resources and Somerset County, consists of the realignment of a portion of the federal navigation channel in Sheep Pen Gut through dredging; construction of two jetties to prevent shoaling in the channel and to reduce the continual need for dredging; and creation of a stone sill along the shoreline to prevent further erosion and contain the clean dredged material from the project.

“We cannot thank our partners enough for bringing this very important project to fruition, which will protect Smith Island’s shoreline from the hostilities of the Bay and provide better ingress and egress to the communities of Smith Island,” said Randy Laird, Somerset County Commissioners president.

While the project’s primary purpose is for navigation improvement, the area will also benefit from wetland restoration and protection. Native vegetation will be planted on the placed dredged material behind the stone sill to restore or enhance about 5 acres of wetlands. Ten acres of existing wetlands south of the federal channel will also be protected.

“I’m glad to see our effective partnership across all levels of government is making this high-priority effort move forward,” said Mark Belton, Maryland Natural Resources secretary. “This important project will help assure the navigational lifeline to the people of Smith Island and provide sustainable environmental benefits for years to come.”

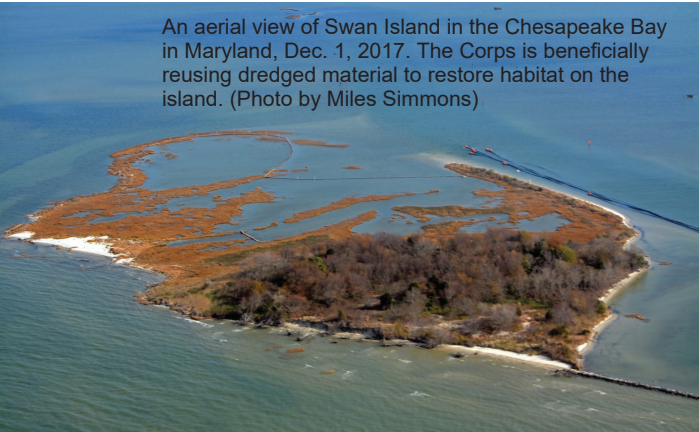
A \$3.1-million maintenance dredging project of the Big Thorofare and Twitch Cove federal channels is also slated to start this year. Work will be performed by Vortex Marine Construction Inc.

“These two channels go through the heart of Smith Island and are necessary for the population to travel and receive goods,” said Danielle Szimanski, Baltimore District Operations Division.

Approximately 80,000 cubic yards of material will be removed from the 60-foot-wide channels in order to provide the authorized navigation depth.

Material dredged from the project will be beneficially reused to restore habitat at Swan Island, which is part of the Martin National Wildlife Refuge on Smith Island. The intent is for the material to restore dune habitat and to create high and low marsh habitats; act as a buffer for restored habitat from wind and waves; and provide a natural breakwater for the Town of Ewell.

The bulk of both projects is anticipated to wrap up this year — buying this storied island more time in the history books. ■



An aerial view of Swan Island in the Chesapeake Bay in Maryland, Dec. 1, 2017. The Corps is beneficially reusing dredged material to restore habitat on the island. (Photo by Miles Simmons)

Smith Island residents receive lifeline

By Sarah Gross

Smith Island, Maryland, Dec. 7, 2017. (U.S. Army photo by David Gray)



Emergency exercise at Jennings Randolph Lake promotes multiagency cooperation

By Cynthia Mitchell

The U.S. Army Corps of Engineers works alongside a multitude of partners to prioritize the well-being of the visiting public at recreation sites and to ensure staff are able to manage a wide variety of emergency situations at the drop of a hat.

Campaigns, events, rules and regulations are administered year-round with the safety of the public at the forefront.

In fall 2017, however, the tables were turned when the safety of the very employees working diligently to keep the projects running smoothly became the focus.

Corps staff and local partners participated in a joint, full-scale emergency response exercise in late October at Jennings Randolph Lake, located between Garrett County, Maryland, and Mineral County, West Virginia. The exercise was organized and sponsored by the Mineral County Division of Homeland Security Emergency Management (MHSEM) and the Corps. Participants included the Elk Garden, Potomac and Piedmont fire departments; Bloomington and Fountain volunteer fire departments; Elk District Ambulance and the Mineral County Special Operations Team.

The group of approximately 30 emergency responders congregated shortly after sunrise to receive direction from MHSEM Director Luke McKenzie and Corps staff.

Exercise participants were presented with the following scenario: a dam operator, who experienced an electrical shock at the bottom of the JRL intake

control tower, is injured and unable to move on his own. The electrical shock also resulted in a power outage that rendered the tower elevator that typically transports staff 212 feet to the second level from the bottom of the tower inoperable, along with the overhead crane, making this a specialized rescue.

“We’ve hosted safety exercises in the past with local first responders, but never anything quite like this,” said Ken Fernandez, operations project manager, JRL. “I hope what we observe and learn today can be implemented not only here to improve our safety mission, but also passed along to other Corps districts and projects.”

With marching orders in hand and the guidance of a specialized high-angle rescue team, emergency responders unloaded equipment and discussed roles in preparation for the rescue exercise to begin.

While a team of first responders descended stairs to the lower and mezzanine levels of the tower, others identified anchor points and configured an intricate system of ropes, pulleys and harnesses that several hours later would ultimately lead to the safe evacuation of the injured employee, simulated with approximately 200 pounds of sandbags in a rescue basket.

“Although the completion of the exercise extended past the expected timeline, the objective was completed safely and provided valuable discussion on the course of action taken to help improve the efficiency and effectiveness of this type of event

in the future,” said Phil Santee, safety and occupational health specialist, Baltimore District. “The exercise was a huge success and extremely valuable for continuing to improve the coordination and communication between JRL personnel and external support departments.”

After the exercise, participants came together for a “Hot Wash” to discuss and evaluate each agency’s performance.

“Discussions are great, but you cannot beat hands-on experience,” said McKenzie. “This exercise will not only help first responders understand what they would have to do for a rescue at Jennings Randolph Lake, but the lessons learned from this exercise can be applied to almost any rescue scenario.” ■

Photos: Corps staff and local partners participate in a joint, full-scale emergency response exercise at Jennings Randolph Lake, located between Garrett County, Maryland, and Mineral County, West Virginia, Oct. 28, 2017. (U.S. Army photos by Cynthia Mitchell)

“We’ve hosted safety exercises in the past with local first responders, but never anything quite like this.”





Army Corps, Secret Service break ground on advanced K-9 training facility outside DC

By Sarah Gross

Just outside the National Capital Region, construction is underway on a new innovative center for some of the most highly-trained employees in the U.S. Secret Service.

The roughly \$9.6-million, 20,500 square-foot cutting-edge center will feature spacious, efficient work areas with proprietary equipment, multi-purpose rooms, an emergency medical area, plenty of natural light and superior ventilation.

Its primary beneficiaries are not people, however — they're Belgian Malinois and Dutch Shepherds.



At top: Programs and canine-inspired treats at the groundbreaking ceremony for the U.S. Secret Service's Maloney Canine Training Replacement Facility at the James J. Rowley Training Center in Beltsville, Maryland, Nov. 29, 2017.
Below: U.S. Secret Service, James J. Rowley Training Center handler participates in a canine training demonstration for distinguished guests following the groundbreaking ceremony.
Bottom right: Col. Ed Chamberlayne, U.S. Army Corps of Engineers, Baltimore District commander, at center, participates in the groundbreaking ceremony with distinguished guests. (U.S. Army photos by Sarah Gross)

"This is *the* training facility for canines in the Secret Service," said Frances Young, U.S. Army Corps of Engineers, Baltimore District design manager. "These are tactical and sniff-testing dogs that are imperative to the mission of the United States Secret Service."

Baltimore District in-house engineers and architects designed and are overseeing construction of the canine training complex that will replace the existing, outdated Maloney Canine Building at James J. Rowley Training Center in Beltsville, Maryland. A groundbreaking ceremony was held Nov. 29 to mark the official construction start of the new Maloney Canine Training Center, which the project team estimates to complete in early 2019.

"The Secret Service knew that their facilities no longer met their needs," said Larry Young, Baltimore District architect. "That's where we came in. We provide the engineering expertise and space requirements to meet their mission demands."

The new complex increases the capacity of its predecessor. It entails a training facility with administrative spaces, classrooms and odor introduction and observations rooms that support canine training requirements. Attached by an access road and canopy, a separate 36-kennel facility focuses on care and maintenance of the canines, including space requirements for a veterinary emergency examination room, laundry room, food preparation and storage rooms, and tactical equipment storage. An existing 1-acre yard will be upgraded to provide advanced training capacity for the canines, while two new breakout yards will flank the building to provide extra areas for relief and relaxation.

"This project breaks away from our typical military construction projects and offered our design team the chance to work outside of the box and take on a new challenge," said Col. Ed Chamberlayne, Baltimore District commander. "As an avid dog lover, I'm honored to be able to provide this training facility for some of the most impressive canines in our nation and their handlers."

These facilities represent the first new construction on the campus in almost two decades, and the antiquated



Kimberly Cheatle, special agent in charge at the U.S. Secret Service's James J. Rowley Training Center, speaks to distinguished guests prior to a canine training demonstration and following a groundbreaking ceremony for the Maloney Canine Training Replacement Facility in Beltsville, Maryland, Nov. 29, 2017. (U.S. Army photo by Sarah Gross)

aesthetics of the current buildings provided the design team the chance to bring a more contemporary look to the environment.

"We wanted to move away from the established style and color schemes to incorporate more of a 21st century feel to include a blue accent color that mimics the Secret Service blue," said Frances Young.

The interior space also exhibits modernization in design and functionality.

Much like a typical 9 to 5 desk job, the canine building is where the canines come to put in their time prior to heading home with their handlers. The team went to great lengths to ensure their working environment is safe and effective.

"Everything we designed was with the safety of the canines and handlers at the forefront," said Frances Young.

The final design was the culmination of several layers of incorporating guidelines, research and coordination.

The design was adapted from Department of Defense's Military Working Dog Facilities standards to meet Department of Homeland Security specifications; follows the objectives of the Rowley Training Center's Master Plan; and incorporates methods to receive Leadership in Energy and Environmental Design, or LEED, silver certification.

In addition, the design team visited other kennels built within the last 20 years, including Customs and Border Protection and Bureau of Alcohol, Tobacco, Firearms and Explosives facilities. From these site visits, the team was able to incorporate current best practices into the design.

The team also worked closely with the center's special agent in charge, Kimberly Cheatle, who oversees the facilities and all of the training programs for the organization.

"Cheatle and her team were integral in the design process," said Frances Young. "From attending a multitude of meetings even down to helping with furniture selection, they have been with us since the beginning."

During the groundbreaking ceremony, Cheatle emphasized how collaboration has led to success.

"Our partners walked with us every step of the way leading up to this event. We've been anticipating this day for a long time. With our increase in training demands, these new facilities will help us serve our mission for years to come."

"Everything we designed was with the safety of the canines and handlers at the forefront."

The space was designed to reduce dog-to-dog contact for both medical and behavioral purposes, as well as dog-to-non-handler-human contact

The design team had to make sure there were no means of escape

Several design features will be employed for the physical and mental health of the canines

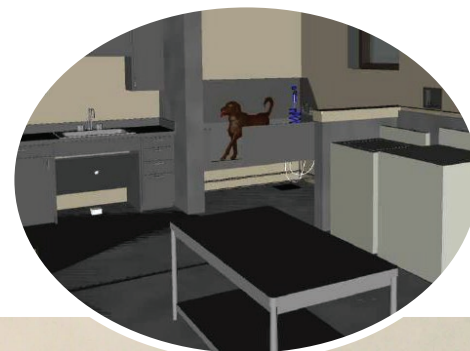
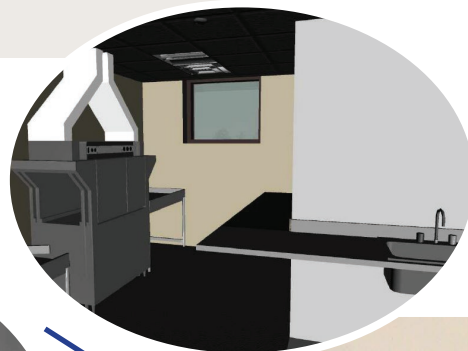
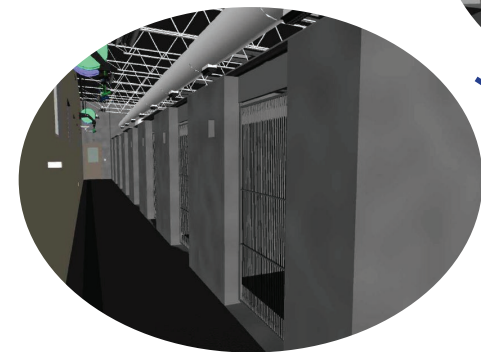
- There will be both standard and isolation kennels in the kennel facility that face back to back.
- Standard kennels will hold non-certified canines day and night, certified canines during the day or will be used for boarding when handlers are out of town.
- Isolation kennels will provide quarantined areas until the canines are medically vetted and cleared to train.
- Spaces will be comprised of masonry block walls and durable solid stainless steel proprietary gates.
- The most distinctive design entails a one-of-a-kind system of double wing gates for each kennel. These gates will allow personnel to sanitize kennels or perform other necessary functions without contact with the canines. To the team's knowledge, this swing gate technique has never been done before.

- The canines are highly-skilled and highly-intelligent; they are trained to scale walls, so the team had to ensure a kennel design that does not allow for escape.
- All standard kennel walls will extend 8 feet high and will be enclosed with a chain-link fence material atop.
- Isolation kennel walls will extend up to the ceiling.

- Inside temperature will be kept within 10 degrees above or below outside or ambient temperature, so canines remain acclimated to outside training conditions. There are certain thresholds. The temperature may not drop below 45 degrees nor exceed 85 degrees.
- The Corps worked hard with Secret Service to get the right epoxy floor material with the right grip, so neither the canines nor their handlers slip, and so it's not too harsh on paws.
- Sky lights and a lot of windows were included in the design because canines respond well to natural light.
- Fresh air-flow will be maintained through proper ventilation and quick waste removal.
- Flooring in kennels will slope to create a gravity-fed drainage system to remove waste from the area.
- Waste from isolation kennels will be kept separate from the rest of the kennel waste to assure that cross contamination between unvetted and cleared dogs does not occur.

- The system is designed with large lines in order to minimize pipe clogs from toys or other foreign materials that may be introduced to the drain.
- To ensure safe breakdown of waste residue, specially-selected enzymes and/or bacteria strains will be introduced into the waste system to quickly degrade organic waste, reduce odors and improve long-term system efficiency.
- Kennel wash-down system will consist of a high-pressure water hose and a sanitizing hose located in kennel corridor areas. The kennel wash-down piping will be connected to a central water booster system to ensure water pressure of 120 pounds per square inch.
- Spaces designed for a new industrial and efficient dishwasher and ionization machine.
- The ionization machine is like a giant armoire that releases a special solution to rid expensive, dirty bite training suits of bacteria.

Kennel Facility



Maloney Canine

Training Center

Rendering

Training yards



Training and Administrative Building



Indian Rock Dam Fast Facts

- 1933 flood caused ~ **\$4 million** in damages (equivalent to ~ **\$75 million** today). **800 properties** damaged, **3,000 people** left homeless
- Construction completed in 1942
- Cost **\$5 million** to construct the flood risk management system that includes Codorus Creek Levee Systems
- Has prevented at least **\$55 million** in flood damages
- Rising **83 feet** above streambed, **1,000 feet** long
- Normally a dry reservoir
- Storage capacity of **9.1 billion gallons** before spillway sees flow
- Spillway allows water to move past dam to prevent pressure building behind it
- Significant recent events in which water was impounded behind dam: Hurricane Sandy in 2012, and unnamed high-water event in 2013, Tropical Storm Lee in 2011

Whitney Point Dam Fast Facts

- In 1935, President Franklin Delano Roosevelt toured flooding impacts in southern N.Y.
- Construction of dam completed in 1942
- Has prevented more than **\$726 million** in flood damages
- Rising **95 feet** above streambed, with concrete spillway, **4,900 feet** long
- Controls drainage area of ~ **255 square miles**
- Storage capacity of **28.2 billion gallons** before spillway sees flow
- Dam also supports recreation, wildlife management
- Major events when the dam reduced flood damages: 1976, 1979, 1984, 2005, Tropical Storm Lee in 2011

The powerful flood of 1933 was still on the lips of many of the hundreds of locals who attended Indian Rock Dam's 75th anniversary open house event Oct. 28.

The flood left a big impression on Melanie Markowski's late mother who was living in York, Pennsylvania, at the time.

"My mother always told the story how flood waters chased people down the street. They beat on doors and yelled 'Get out of your homes! The water's coming!' Then, she looked down the street and started to run, too, because she could see the wall of water."

Markowski and her husband, from nearby Windsor, Pennsylvania, came to the open house to witness the dam that has prevented a repeat of the 1933 storm.

"My mother always said that now this can never happen again," declared Markowski. "She was very pleased when they built the dam."

Thirty years after the completion of Indian Rock Dam, it faced its biggest test when Tropical Storm Agnes brought massive flooding throughout the Susquehanna River Basin.

York saw significant flooding – though it would have been much worse at an estimated 13 feet of water or higher had the dam not been there.

Erma Henry-Raver was compelled to attend the open house through her personal connection with the dam. She read about the event in her local paper and began sifting through her archival trunk for photos.

Henry-Raver found and brought photos from 1945 of her family and her as a teenager coming to see the newly-constructed dam. She also brought souvenir postcards picturing the 1933 flood and original newspapers.

"I knew we were going to be at this event when I got over to her house, and she had the contents of the trunk all over the living room," said son Tom Raver. "Our family had a farm down toward the Red Lion area, and they came in on weekends to the markets downtown. They sold produce, butter, and eggs. When the flood came in, they couldn't come to market. They benefitted from the dam by not being shut out of the market again."

Jeff Gilbert traveled to the event from nearby Shrewsbury. A portion of his family's farm upstream of the dam was purchased as part of its construction.

Gilbert's most powerful memories associated with the dam were during Tropical Storm Agnes. He said that while it had been raining heavily, his mother and he didn't realize just how significant the rain was until they saw the water filling the

Erma Henry-Raver, York citizen, holds up an old newspaper that she brought with her to the Indian Rock Dam 75th anniversary event, Oct. 28, 2017. (U.S. Army photos by Sarah Gross)



Hundreds flood open houses for rare peek inside dam gatehouses

By Chris Gardner and Sarah Gross

"ONE DEAD IN WORST FLOOD SINCE 1884" screamed the top of the front page of the Aug. 24, 1933, edition of The Gazette and Daily of York, Pennsylvania.

This flood that ravaged communities in York County and others like it aided in the passage of the Flood Control Act of 1936 that led to the construction of hundreds of flood risk management projects across the country, including Indian Rock and Whitney Point dams — both of which were recognized this past October for 75 years of helping to save lives and properties from floodwaters.

The U.S. Army Corps of Engineers opened the dams' gatehouses to provide the public a rare look into the inner workings of these critical control structures.

Top six photos: Attendees at the Indian Rock Dam open house in York, Pennsylvania, Oct. 28, 2017. (U.S. Army photos by Sarah Gross)

Bottom two photos: Attendees at the Whitney Point Dam open house in Whitney Point, New York, Oct. 21, 2017. (U.S. Army photos by Malcolm Jones and Chris Gardner, respectively)



reservoir while traveling to his aunt's house.

"It was literally a lake," Gilbert said. "We pulled up to my aunt's house, and she came out in her bath robe. They had been bailing water out of her basement, and she said 'Don't you know that York is in a state of emergency, and everything's closed!?' We saw the water going over the spillway. It was pretty amazing; it looked like Niagara Falls."

While many people have historic connections and memories associated with Indian Rock Dam, Head Dam Operator Steve Young said that in recent years his team has also been working on forging new bonds with the surrounding communities.

He still had his doubts about what kind of turnout this event would create, however.

"When this event was first proposed, I thought, well, Indian Rock Dam is a dry project, so we don't have a lot of recreation other than public hunting," said Young. "I was very surprised at the number of attendees. It makes me feel good that we're doing

something the public appreciates."

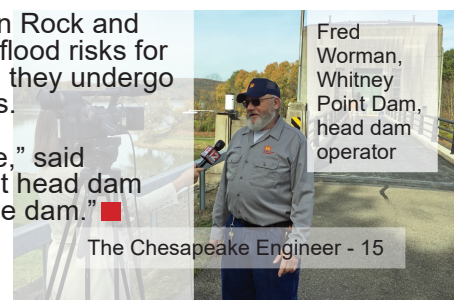
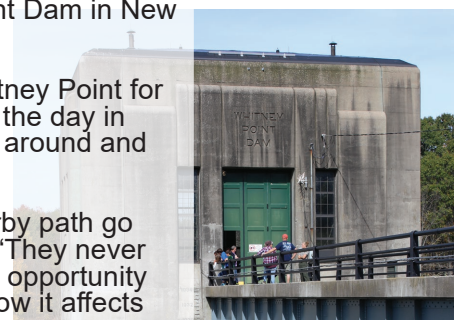
Several dozen people attended a similar event the weekend prior at Whitney Point Dam in New York.

Jim Poyer, a seasonal hire at Whitney Point for the past ten years, spent much of the day in the gatehouse showing the public around and answering questions.

"A lot of people who walk the nearby path go around this building," said Poyer. "They never knew what was inside, or took the opportunity to see what is, what it does and how it affects communities."

In order to ensure dams like Indian Rock and Whitney Point continue to reduce flood risks for these communities into the future, they undergo regular monitoring and inspections.

"You build it; it needs maintenance," said Tom Hurlbut, former Whitney Point head dam operator. "It's like a living entity, the dam."



Maryland typically has to deal with the impacts of tropical storms or nor’easters rather than hurricanes. However, while North Carolina’s Outer Banks breaks up the majority of stronger hurricanes before they reach the coast of Maryland, the state is not immune, explained Thomas Laczo.

Laczo is a coastal engineer with the U.S. Army Corps of Engineers, Baltimore District.

Maryland was significantly impacted by Hurricane Isabel that made landfall in 2003. The state experienced a substantial storm surge of 6 to 8 feet above normal tide levels in some areas and even breached the Corps’ ecosystem restoration project at Poplar Island in two spots due to elevated water levels and large waves.

So, how is Maryland getting prepared for the next major storm?

Laczo is currently managing a Hurricane Evacuation Study for the state though the National Hurricane Program (NHP).

NHP is administered by the Federal Emergency Management Agency (FEMA), in partnership with the National Oceanic and Atmospheric Administration’s (NOAA) National Hurricane Center (NHC) and the Baltimore District, as a part of the Corps’ Planning Center of Expertise for Coastal Storm Risk Reduction. NHP’s mission is to support citizens and first responders in building, sustaining and improving the nation’s capability to prepare for, protect against and respond to hurricanes.

“As part of the National Hurricane Program, the Army Corps helps develop and maintain products and tools to help with planning and decision making for emergency managers,” said Carla Quinn, Baltimore District NHP lead.

Maryland's Hurricane Evacuation Study

The Maryland Hurricane Evacuation Study consists of four main parts: hazards analysis, evacuation zone development, vulnerability analysis and transportation analysis.

“The hazard analysis helps decision makers at the Maryland Emergency Management Agency understand the maximum flooding associated with storm categories for hurricanes,” said Debbie Hardick, Baltimore District environmental protection specialist. “We concentrate on storm surge

because it is typically the most life-threatening hazard that coastal communities face during a hurricane.”

To calculate the maximum potential storm surge, NOAA’s NHC uses the SLOSH (Sea, Lake, and Overland Surges from Hurricanes) model. To create the products used for evacuation planning, SLOSH is run several thousand times with hypothetical hurricanes under different storm conditions.

“The peak high-water value at each particular location is recorded to capture a worst-case snapshot for a particular storm category,” said Quinn. “This composite approach is regarded by NHC as the best for determining storm surge vulnerability for an area since it takes into account forecast uncertainty.”

In addition to providing the worst-case scenario, NHC provides model outputs for specific locations focused

by storm category, forward speed and trajectory.

Based on information pulled from NHC’s simulations, the Corps creates maps that show inundation areas (or areas flooded) associated with each storm category, along with the maximum potential depth of water in those areas.

“These maps provide great input for developing evacuation zones,” said Hardick. “For instance, we know that on the eastern shore of Maryland there is more surge risk potential in a hurricane heading northwest rather than northeast. Therefore, when forecast information is available to identify the category and direction of an incoming storm, this knowledge could potentially help reduce over-evacuations, which is particularly important during tourist season.”

Evacuation zones are usually developed by the local county

government with technical support from the state, FEMA and the Corps. Storm surge inundation area maps form the basis of the zones, but they are adjusted to local conditions. The boundaries are often times based on major roads, waterways, zip codes and local landmarks, so they are easier to communicate to the public.

The vulnerability analysis follows evacuation zone development. This analysis identifies the population, critical facilities, shelters, roadways and mobile home communities within each inundation area and evacuation zone.

“This information can help show what kind of shelter demand you are looking at and also the number of potential evacuees with the main intent of saving lives,” said Hardick. “It is also valuable data for operational and recovery planning.”

The final step in the study process

is the transportation analysis that uses data from the other analyses to determine evacuation clearance times, which is the time required for all vehicles to get out of the evacuation zone, until the last vehicle reaches an assumed point of safety.

“We gather input from local emergency management, key traffic law enforcement officials and the Department of Transportation to gain an understanding on how the roadway network can support evacuation decisions,” said Hardick.

This analysis includes not only evacuation routes and scenarios, roadway capacities and travel destinations, but it also includes demographics and behavioral assumptions.

Information gathered in this study feeds a Hurricane Decision Support Platform, which is a storm tracking and decision support tool that the

Corps operates and maintains through the program.

“It is a big aggregator of information from many different pieces,” said Laczo.

The platform combines live feeds of tropical cyclone forecast information with data from various state hurricane evacuation studies.

“It provides local emergency managers with the best information available to make evacuation decisions,” said Quinn. “The Corps also provides the emergency managers with training on how to use the tool.”

Emergency managers in every coastal state from Texas to Maine, and Hawaii, Puerto Rico and the U.S. Virgin Islands have access to this platform.

Why update the study now?

The last time this study was conducted was in 2009 and 2010 when the Delmarva Peninsula that encompasses the eastern shore had a study separate from Maryland’s western shore counties. The Delmarva study was executed as a three-state effort in order to address evacuation transportation issues since they all share the same road network. This current study encapsulates all of Maryland’s vulnerable counties. Norfolk and Philadelphia Corps districts are conducting their own hurricane evacuation studies for Virginia and Delaware, respectively, and overlapping information will be shared.

There are several reasons why it is necessary to promptly conduct this study.

There is new SLOSH data from NHC that incorporates key information from Hurricane Sandy; populations are increasing along the coast; roadway infrastructure is changing; and there is new LIDAR (Light Detection and Ranging) data to model land elevation and measure projected storm surge heights.

In 2016, if Hurricane Matthew had not lost speed and had continued to work its way up the east coast, multiple states would have needed to evacuate.

“One great thing about this study is that it lets you envision things you may not have otherwise been ready for, such as transportation bottlenecks created by mass evacuations, and the need for strong interstate communications,” said Laczo.

The study is expected to be completed by the start of the 2019 hurricane season. ■

Each year, millions of visitors from far and wide flock to the famous beach in Ocean City, Maryland. Most of these beachgoers have no idea that the prime attraction of this tourism hot spot is actually a project engineered by the U.S. Army Corps of Engineers to help protect the city from powerful coastal storms and hurricanes.

Over the past 25 years, this project has prevented approximately \$927 million in damages, including damages from Hurricanes Irene and Sandy. This impressive estimate is based solely on larger storms and doesn't include the project benefits from smaller storms or nor'easters.

Berm and Boardwalk

The 100-foot-wide, 7-foot-high (above mean high water) beach berm that stretches from the Maryland-Delaware line to Third Street near the inlet at Ocean City is one element of the project, known as the Atlantic Coast of Maryland Shoreline Protection Project. It was designed and constructed through a partnership between the Army Corps Baltimore District, Maryland Department of Natural Resources, Worcester County, and the Town of Ocean City.

Initial construction of the entire project was completed in 1994, and the berm is "renourished" every four years or so. The latest round was completed ahead of schedule in December 2017. Roughly 900,000 cubic yards of sand were pumped

onto the beach to restore the berm back to its original design.

The project also includes a 14.5-foot-high steel sheet piling bulkhead with a concrete cap that runs along Fourth Street and north to 27th Street, and a dune of similar height that backstops the beach berm from the north end of the boardwalk to the state line. The dune is reinforced with plantings and entails more than 200 crossings.

"If you grew up around here, Ocean City is summer."

Natural Movement

The project loses an average of 175,000 cubic yards of material every year, but it is resilient.

"The project does a relatively good job of repairing itself," said Baltimore District Project Manager Justin Callahan, who has worked on the project in various capacities since the late 1990s. "You can go out there the week after a storm and measure and see that there are horrific sand losses to the dune and the beach berm. But, what we also see is that most of that sand is drug right offshore of the project and its sitting there on a big sand bar right off the beach. The initial wave attack pulls the sand out to the ocean, but it doesn't take it too far away, and then normal wave action

pushes it back up on shore again."

Major Storm Defense

Ocean City Engineer Terry McGean recalls the 2011 storm that came at the height of the busy summer season.

"With Hurricane Irene, Ocean City was literally in the eye of the storm, bringing 60 mile-per-hour winds and 20-foot seas," said McGean. "The storm event that we had been warned would wipe out Ocean City had arrived. Expecting the worst, we successfully evacuated the town. When the sun came up Sunday morning, I sent out our damage assessment teams. Instead of toppled buildings and destroyed infrastructure, we found some loose siding and a pothole in a city parking lot. By noon, our businesses were open, and we had one of the busiest Labor Day weekends in years."

McGean praised the project and partnership with the Corps, highlighting the benefits to Ocean City over the years.

"Since the completion of the project, there have been no structural damages from ocean flooding, and, more importantly, there have been no injuries or deaths from storms."

In January 2016, a vicious nor'easter known as Winter Storm Jonas hit the area hard, striking as a "70-year" storm and removing an estimated 900,000 cubic yards of sand from the beach project. Much of the sand returned to the shoreline, and the project prevented an estimated \$200 million in damages. The project, itself, however, suffered significant damages to the dunes and beach berm.

Corps personnel worked closely with the state and Ocean City to incorporate the storm's impacts into the plans for this year's completed renourishment.

Callahan noted that he's proud to be able to work on a project that helps reduce risk to Ocean City from coastal storms, helping to preserve the town that's not only an economic driver for the region, but a cultural icon for Marylanders.

"If you grew up around here," Callahan said, "Ocean City is summer." ■

In Muncy, Pennsylvania, innovative partnerships have formed to help this vulnerable city in its quest to become more resilient and act as a model in combatting flood risk in small town America.

Situated at the convergence of the West Branch of the Susquehanna River, Glade Run and Muncy Creek, Muncy was prime for business in the late 1700s. Now, however, its location has brought an onslaught of nuisance flooding.

The U.S. Army Corps of Engineers is collaborating with Lycoming County, Susquehanna River Basin Commission (SRBC) and the Muncy Bank and Trust Company on a flood risk management study that supports the holistic Greater Muncy Area Resiliency and Action Plan — a plan that highlights flooding as "the preeminent natural disaster threatening Pennsylvania's rural communities."

"The concept for the Greater Muncy Resiliency Plan is to use a whole community approach to address the variety of issues facing Muncy, so the area becomes an example for how other communities in Pennsylvania, and even the nation, can use best practices to respond to, recover from and mitigate for the effects of disasters," said Josh Schnitzlein, Lycoming County hazard mitigation planner. "Efforts on behalf of the Muncy Resiliency action partners will showcase how a compact and vital town like Muncy can bounce forward after shocks and stressors in a way that improves daily life, bolsters the economy and lessons the impact of future flooding."

The approximately 2-year, \$500,000 flood risk management study that will help inform the greater plan falls under the Corps' Planning Assistance to States (PAS) Program. The study entails conducting building and infrastructure surveys within the Borough of Muncy and Muncy Creek Township to gauge the number of properties in the floodplain and their susceptibility; modeling of stormwater and the potential extent and depth

of flood waters based on various storm scenarios; and preparing a number of structural and non-structural planning-level solutions to reduce nuisance flooding. The alternatives considered could include levees, floodwalls, floodproofing and building elevations. Alternatives will be modeled to see how much flooding could be reduced with their implementation.

"It can be hard for smaller communities to come up with the necessary funding to be able to participate in important federal projects like this one," said Sharon Sartor, U.S. Army Corps of Engineers, Baltimore District, Planning Division, Technical Services Branch chief. "Lycoming County and the Corps have found creative ways to help offset these costs."

Through the PAS program, project costs are split evenly between the Corps and a non-federal sponsor — Lycoming County, in this case, Muncy Bank and Trust Company is providing money to Lycoming County to assist them in their cost-share responsibility. SRBC is also assisting through conducting survey work and providing additional funding.

"Muncy, alone, may struggle to achieve these resiliency goals and execute plans due to lack of manpower, economic resources, or other constraints; however, coalitions comprised of members across a wide range of disciplines enhance the ability to provide services and enable groups to pool collective resources to achieve common goals," said Schnitzlein.

"We attempt to defray project costs as much as possible through the use of cash and in-kind services from various interested partners," said Amy Guise, U.S. Army Corps of Engineers, Baltimore District, Planning Division chief. "Along with SRBC, the bank as a partner and financier turns this project into a true public-private partnership — and one that is rare. To our knowledge, this is the first time a bank has



By Sarah Gross

Baltimore District, Susquehanna River Basin Commission team members conduct field work in Muncy, Pennsylvania, Dec. 11, 2017. (Courtesy photo illustrations)

contributed to this type of federal project."

Muncy Bank is a key stakeholder for this initiative because they hold mortgages and consumer and business loans for residents and businesses affected by flooding. This is substantial for a community in which an estimated 40 percent of its structures reside in the 100-year floodplain, or an area in which a flood has a one percent chance of occurring in a year. Many of these structures are older and occupied by moderate to low-income families or family-owned businesses — populations in which flood risk-reduction efforts like floodproofing, buying flood insurance, relocating or elevating properties, though critical, can become cumbersome and costly.

"We continuously participate in activities that are vital to keeping the local economy vibrant and prosperous," said Robert Glunk, The Muncy Bank and Trust Company president and CEO. "Participating in this resilience effort is just an example of how we embrace our role in the community."

The Corps hopes this collaboration is one that can be replicated nationwide.

"We are optimistic that this unique partnership with the bank will open the door for similar involvement in the future," said Guise. "There are plenty of resilience solutions in our region that can support business and economic vitality, agency goals and help restore our treasured Chesapeake Bay."

But for now, the focus is on Muncy.

"Through these interagency efforts, we will become a hometown that is economically secure and sustainable and a destination community that leverages its small-town assets," said Schnitzlein. ■

A fortified beach berm

Protecting Ocean City from powerful storms

By Chris Gardner

Beach renourishment in Ocean City, Maryland, Nov. 20, 2017. (U.S. Army photo by Chris Gardner)



...from unique partnerships

Baltimore District Emergency Response 2017

By Becca Nappi



Every year, the U.S. Army Corps of Engineers, as part of the federal government's unified national response to disasters and emergencies, deploys employees from across its many districts to provide technical engineering expertise and to promote capacity development at home and abroad. In 2017, the U.S. and its territories were struck by an unprecedented hurricane season with Hurricanes Harvey, Maria and Irma devastating parts of Florida, Texas, Puerto Rico and the U.S. Virgin Islands. In October, wildfires burned through northern California. Employees throughout Baltimore District volunteered for deployments to assist in these emergency-relief efforts. More than 70 Baltimore District employees deployed to California, Texas, Puerto Rico, Florida and the U.S. Virgin Islands in support of debris removal, temporary housing, public affairs, power and roofing missions.

California Wildfires

Baltimore District Employees Deployed: 18 (and counting)

Missions: Debris Removal and Temporary Housing

Since October 2017, the Corps has been working in partnership with local, state and federal agencies in response to the devastating California wildfires. In northern California, Baltimore District employees are assisting affected communities by providing quality assurance, technical expertise and administrative support to the debris removal and temporary housing missions.

Hurricane Harvey

Baltimore District Employees Deployed: 3

Missions: Debris Removal, Hydrology and Hydraulics (H&H), Emergency Operations Center Management

In late August 2017, the Corps began working in coordination with local, state and federal response efforts in Houston after Hurricane Harvey caused disastrous flooding throughout the area. Employees also provided subject matter expertise in debris removal throughout the affected Texas communities.

From the Army Corps Headquarters in Washington, Baltimore District employees provided H&H expertise to assist in the management of controlled water releases from Addicks and Barker dams to effectively contain 140 billion gallons of water within the reservoirs. Employees also provided Emergency Operations Center support.

Hurricanes Irma & Maria

Baltimore District Employees Deployed: 51

Missions: Debris Removal, Temporary Power, Emergency Operations Center Management, Operation Blue Roof, Public Affairs, Contract Support, Deployable Tactical Operations System Support and Temporary Housing

In early September, Hurricane Irma tore through the U.S. Virgin Islands and southern Florida, destroying housing, commercial and power infrastructure. Then, Hurricane Maria developed in the Atlantic Ocean and, once again, ripped through the U.S. Virgin Islands and Puerto Rico. Baltimore District employees deployed to Florida, Puerto Rico and the U.S. Virgin Islands in partnership with local, state and federal response efforts for both hurricanes.

In Florida, Baltimore District employees provided technical assistance for debris removal and temporary roofing quality assurance in order to assist impacted residents with regaining a sense of normalcy. In Georgia, employees provided debris removal technical assistance and Emergency Operations Center support. Employees also provided Emergency Operations Center support from Army Corps Headquarters.

In the U.S. Virgin Islands, Baltimore District employees contributed to many of the Corps' emergency response missions, including quality assurance for the Operation Blue Roof mission that gives homeowners temporary coverage to shield their homes from the elements; expertise and technical assistance for the removal of 851,000 cubic yards of debris; public affairs support to communicate response efforts; and emergency operations leadership through the management of daily operations and personnel.

In Puerto Rico, Baltimore District employees played a role in almost every mission. Many employees provided quality assurance for the more than 50,000 blue roofs installed throughout the island. Employees also contributed technical assistance and administrative support to the power mission to restore reliable power to the people of Puerto Rico. Contracting, emergency operation management and public affairs support also helped in the execution of these missions. Lastly, employees aided in the removal of 2.47 million cubic yards of debris from homes and businesses.

U.S. Army Corps of Engineers,
Baltimore District



2 Hopkins Plaza
Baltimore, MD 21201

Looking Back...



File photo from the early 2000s

With the arrival of Survey Vessel CATLETT, Survey Vessel LINTHICUM has been retired. LINTHICUM served Baltimore District for more than 40 years since its construction in 1976. She and her crews supported the deepening of the Baltimore Harbor channels in the 1980s and the beneficial reuse of dredged material to expand Hart-Miller Island State Park in the 1980s and 1990s, as well as the ongoing construction and expansion of the Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island in the Chesapeake Bay. LINTHICUM also aided in emergency operations, assisting in saving multiple lives. Survey Vessel LINTHICUM was named after Herbert Linthicum, a World War II veteran who worked in Baltimore District for 23 years from the 1940s through the 1960s.