

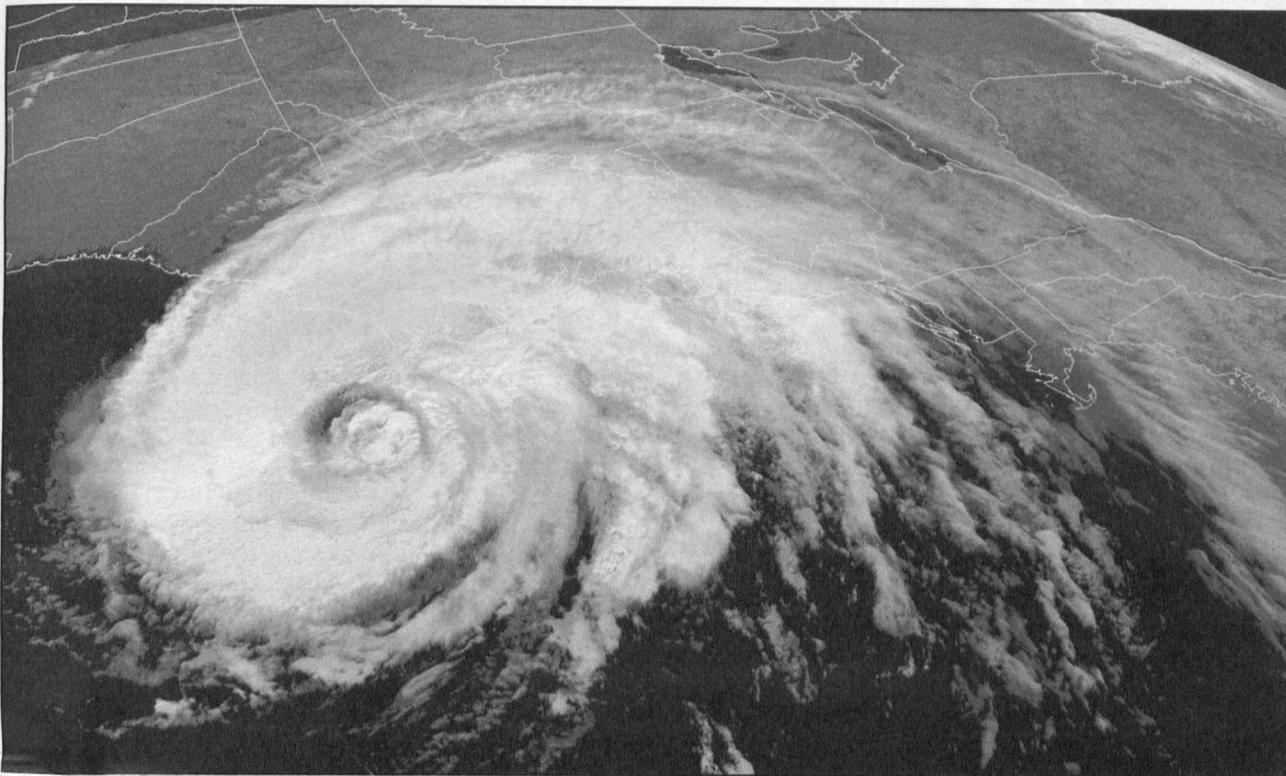


US Army Corps
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USACE assists Isabel recovery efforts



The effects of Hurricane Isabel were felt throughout much of the Northeastern U.S. (Photo illustration from the National Oceanographic and Atmospheric Administration)

Hurricane Isabel made landfall Sept. 18 as a Category 2 hurricane, wreaking devastation through much of the mid-East Coast. Presidential disaster declarations were issued on Sept. 18 for portions of North Carolina and Virginia; on Sept. 19 for Maryland; and Sept. 20 for Washington, D.C., and Delaware.

Widespread power outages and flooding occurred throughout the region. Two U.S. Army Corps of Engineers divisions, North Atlantic Division and South Atlantic Division, in three regions of the Federal Emergency Management Agency, were affected by the storm.

FEMA missions. At press time, FEMA had authorized the Corps to assist affected residents with ice, water, emergency power, temporary housing and roofing, logistics, and debris assessment.

Elsewhere, FEMA and the North Carolina Department of Transportation asked Wilmington District on Sept. 20 to help repair a breach in Highway 12, the sole roadway along much of North Carolina's Outer Banks.

Overall, nearly 300 USACE personnel were involved in Isabel recovery efforts as of press time.

Damage prevention. Meanwhile, Norfolk District's Virginia Beach Erosion Control and Hurricane Protection Project was tested for the first time since its completion in 2000, and performed exactly as designed. According to early estimates, the project prevented about \$82 million in damages.

Wounded civilian wants to return to Iraq

Article by Karen Harvey
Photo by Lt. Col. Austin Johnson
Headquarters

Ghassem Khorsorownia, a technical specialist in Seismic Engineering with Sacramento District, was wounded on Sept. 17 while on a mission north of Baghdad in Iraq. He suffered injuries to his left shoulder and right eye when his convoy was ambushed. He was returning from an assessment and meeting that would help a military industrial complex convert from producing military equipment to manufacturing civilian equipment.

During the meeting, Khorsorownia and his party heard gunfire and explosions. "We were kind of used to hearing that in Baghdad, especially at night," he said.

Ambush

The convoy commander recommended the group cut their meeting short because the situation was heating up north of their location. Ten minutes into the return trip, there was an explosion near their HMMWV (High Mobility Multi-purpose Wheeled Vehicle). Khorsorownia was sitting behind the driver, and saw a reddish-brown blast in the air in front of the vehicle.

"I turned my head around, and dust and smoke was filling the inside the HMMWV," said Khorsorownia. "The commander and the driver were unconscious for the first few seconds."

The vehicle eventually stopped when it hit another object. Khorsorownia got out and noticed he could not see out of his right eye. "Then I noticed was bleeding heavily from my shoulder where I had been hit by shrapnel."

He moved to the left side of the HMMWV for protection, as he thought the attack was coming from the right.



Lt. Gen. Robert Flowers, Chief of Engineers, visits Ghassem Khorsorownia and his wife Mojan at Walter Reed Army Medical Center. Khorsorownia was injured during an ambush in Iraq.

"Then I noticed there were a lot of Iraqis standing around there, kind of casually resting their hands on their backs and their sides like they were expecting us."

Treatment

Nothing further happened and all the injured were lifted out by helicopter from a nearby landing zone. Khorsorownia was treated onsite before being sent to Germany, then on to Walter Reed Army Medical Center (WRAMC) in Bethesda, Md.

Lt. Gen. Robert Flowers, the Chief of Engineers, visited Khorsorownia at WRAMC. Khorsorownia received

a framed Commanders Coin and three-star note from Flowers.

"I think you only have to talk to the people that are making the sacrifice, and Ghassem is a tremendous example," said Flowers. "There's a man who has been wounded, and thinks it's important enough to go back."

Despite his injuries and all that's happened, Khorsorownia does, indeed, want to go back to Iraq to finish what he started. "My goal was to contribute to this and be part of the big picture, a part of history, a part of improving somebody else's life," said Khorsorownia. "I didn't have enough time to do what I wanted to do."

When asked, considering his current situation, if he feared for his safety if he went back, Khorsorownia said, "I've never feared for my safety. In fact, I've said many times that we are in good hands. We are very safe where we are going, and it takes a little bit more situational awareness for us to be *more* safe."

Not a back-seater

Khorsorownia's supervisor, Rex Simmons, said Khorsorownia truly likes to help people. "He always looks for challenging assignments. He thinks it will make him a more rounded engineer."

"I'm not a back-seater," Khorsorownia said. "I like to be involved with opportunities that actually help other people. I enjoy being a volunteer. Aside from the fact that we would be involved with what I call a Genesis of a brand-new Iraq, from what it was and what it is going to become, I think it's a magnificent opportunity that you just simply won't get sitting down and watching CNN."

Khorsorownia came to Sacramento District four years ago from Seattle District. The last mission he volunteered for was Typhoon Pongsona in Guam in December 2002.

Double life:

By Gina Schwetz
Walla Walla District

Electronics repairman for lock & dam is also drummer for local heavy metal rock band

Bret Smith lives almost a double life.

Weekdays, he is a soft-spoken electronics control repairer at Walla Walla District's Lower Monumental Lock and Dam, and he keeps electronic systems running in the powerhouse.

But on weekends Smith is a rock-and-roller, hammering out heavy-metal rhythms on the drums in front of a mosh pit filled with screaming, jumping, body-slammng rock fans at clubs around the nation.

At age 10, Smith got his first snare drum. "I've always loved the drums and catchy rhythms," he said. "The first time I sat behind a drum kit, I was hooked."

Smith joined the Navy as an electrician straight out of high school. He served on a minesweeper during the Gulf War, and left active-duty in 1994. After returning to Washington State, he worked with wiring and security systems. He landed a job with Walla Walla District in 1997.

But wherever he went, Smith managed to find bands in need of his drumming skills.

"Not being in a band would be like being Michael Jordan and told you can only watch the game," said Smith, now 32 and married with three children.

After moving to Tri-Cities, Smith joined "Last Nerve," a local metal band in need of a new drummer. Music reviews circulated, and requests started rolling in to appear in concert at hotspots outside Tri-Cities. Upcoming shows include a concert at the Hard Rock Cafe in Las Vegas and a gig in Fayetteville, Ark., where radio stations have placed "Last Nerve" on their top-ten lists.

But as much as he likes music, Smith maintains per-



Bret Smith plays drums for "Last Nerve," a heavy metal rock band. (Photo by Michelle Ausere)



In his day-job, Bret Smith is an electronics control repairer at a lock and dam. (Photo by Bill Akin)

spective. "I try to keep it balanced — my family, work, and the band, in that order," he said. "I enjoy my work just as much as my music, but for different reasons. I like troubleshooting electrical systems. When there's a glitch in something and the pressure's on to make it work right again, that's fun."

Smith's enthusiasm for his job shows in the quality of his work, said Bill Akin, his supervisor. "Smith gives every task his complete focus," said Akin. "You can give him a job and walk away knowing it will be done quickly and correctly. He just quietly does his job."

But on the stage, that focus becomes anything but quiet. "Last Nerve's" show at 2002's 'Rock & Roll Round Up' in the Tri-Cities singled out Smith in *World of Metal*

reviews, "...hits were hard and cymbals were as crisp as his rolls. This wasn't another bang-bang drummer fresh out of his sophomore year. Bret is an incredible percussionist!"

The attention doesn't seem to faze Smith. He passes it off as "just having fun playing my drums," and talks about missing his family while doing out-of-town shows. Being in a rock band fills his need for musical expression, but he doesn't let it be the only thing that drives him.

"I'm avoiding that 'Catch-22' thing — everybody doing shows wishes they were at home, and everybody at home wishes they were in a rock band," Smith said. "If I can do a little bit of both, that's like having the best of both worlds."

Corps people help find shuttle debris

By Monique Farmer
Omaha District

Of the many assignments that Corps of Engineers people have worked, none match the size or scope of the effort to find fragments of the space shuttle *Columbia*.

Jeff Hubbard, a project engineer with the Omaha District Rapid Response Team, and fellow coworkers, Jim Conroy, Chuck Malin, and Mike Cirian all were tasked to assist with recovery operation and cleanup after the shuttle broke up over Texas and parts of other states.

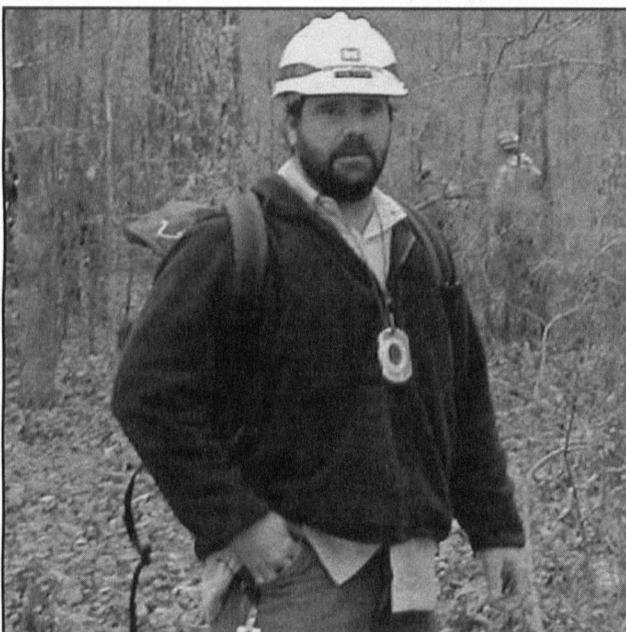
"This project was completely unique to anything else I've ever worked on," Hubbard said. "The scope and the size of the area we were covering made it a challenge."

Search

Hubbard assisted with recovery efforts for about a month. Primarily, he led search teams to look for parts of the shuttle in Nacogdoches, Texas. Conroy worked in the planning and logistics division for two weeks, and Malin served as a division supervisor on the project. Cirian, an environmental engineer with Construction Division from the Badger Area Office, spent nearly two months in Nacogdoches assisting with the cleanup efforts.

"No one ever attempted a search effort of this magnitude before," said Cirian. "Numerous agencies were involved including NASA, EPA, the Corps, the Forest Service, FEMA, and the Coast Guard, to name a few. There were more than 25,000 people and 26 different agencies involved with this effort. The search area spanned more than 650,000 acres."

Cirian spent half his time serving as an EPA division



Mike Cirian of Omaha District takes a break from searching for wreckage of the space shuttle *Columbia* in Nacogdoches, Texas. (Photo courtesy of Mike Cirian)

supervisor for the project. "We would line up crews that worked with the Forest Service and other agencies and go out into the field and direct shuttle material cleanup and collection procedures."

The other half of the time, he worked as Chief of Logistics and Planning where he assigned division supervi-

sors to crews and contractors to search areas. He also worked with other agencies planning for search and recovery areas and interagency communications. During his final week on the project, Cirian worked as Deputy Incident Commander.

Challenges

"Every day, crews of about 20 people spread out about 10 feet apart searching parts of eastern Texas and western Louisiana for shuttle pieces," Cirian said. "We had to search through rain, sleet, cold weather, rough terrain, stickers, and bushes. We went from that to searching areas in pretty hot weather."

Search areas spanned both public and private areas, and crews worked between 12-to-16 hours a day, and many worked seven days a week, according to Cirian. "We ran into things like poisonous snakes in some swampy areas, and wild pigs on private farmland."

"Things were a little confusing with so many agencies working together toward the common goal of recovering at least 25 percent of the shuttle, which is what NASA wanted," Cirian continued. "Some agencies wanted to work independently and do their own thing, and some wanted to take charge instead of working together. That was the most challenging aspect of the project. But, once all the agencies realized the common goal of recovering as much of the shuttle as possible, the cleanup effort worked amazingly well."

Despite turf wars and weather/nature hardships, the agencies gathered more than 84,000 pieces of debris, recovering 38 percent of the shuttle. Recovery efforts came to a close in mid-April.

New Iraqi army a force for stability

International team builds training facilities

By Thomas O'Hara
Omaha District

Army engineers representing the Coalition Provision Authority (CPA) are working side-by-side with Iraqi counterparts to provide barracks and other facilities for the Iraqi Army — a force that only months before was fighting allied soldiers during Operation Iraqi Freedom.

Establishment of permanent security forces for Iraq, including local policemen and military service members, has been identified as key to expediting the recovery of Iraq and stemming the sabotage and looting that have hindered the rebuilding effort.

On both fronts, the U.S. Army Corps of Engineers is assisting the CPA in accomplishing those goals.

Fast track

"We're definitely on a fast track," said Maj. Kim Colloton, team leader for the Corps' Baghdad Central forward engineering support team (FEST), comprised of employees mostly from South Pacific Division.

Beginning in mid-June, Colloton and her FEST team started by providing rapid assessments, design schematics, and engineering estimates to expedite completion of facilities that will eventually train the new Iraqi army and help provide security to this proud and old, yet newly developing, nation.

Soldiers from the 249th Engineer Battalion (Prime Power) flew in with little notice and helped determine the power requirements.

Then the Iraq Area Office pitched in with team members such as project engineer Tom Perkins, quality assurance representative Peter Corona, and cost engineer Shaleigh Daniel, to live at the remote site and assist the Iraqi Ministry of Housing and Construction in supervising the construction.

Teamwork

As the new Iraqi army program expanded at a fast pace, more reinforcements were brought in and the FEST turned over the reigns of the project to the 937th Engineer Group commanded by Col. Eddie Perkins. Now the more developed and detailed assessments and the master planning efforts are occurring at a number of bases across the country through combined teams of Corps master planners sent to Iraq on 60-day orders, members of the 937th Engineer Group, and former Iraqi military engi-



A soldier inspects training base facilities in Kirkush. The facilities were begun more than 10 years ago, and never finished. (Photo courtesy of Baghdad Central FEST)

neers now working for the Ministry of Construction.

Perkins assigned project managers to work with the Coalition Military Assistance Training Team to help determine their requirements for training the new Iraqi army. "Talk about your PMBP in action!", said Colloton.

Abandoned facilities

The training facility, 130 kilometers (about 80 miles) northeast of Baghdad in Kirkush, is one of three sites that a Yugoslavian company began building more than a decade ago, before the first Persian Gulf War. However, after that conflict, with U.N. sanctions that curbed Saddam Hussein's military build-up, construction stopped. These facilities were left unused, undeveloped, and essentially abandoned for more than 10 years.

But since they were still the property of Saddam's government, looting was not a problem in these "ghost-towns." Fear of the Hussein regime kept these unfinished facilities secure.

The four-kilometer-square (about 2.5 mile square) area was designed to accommodate seven battalions of soldiers with about 200 buildings, including barracks, kitchens, classrooms, administrative

buildings, warehouses, and maintenance facilities — everything a military base needs. There is even the outline of foundations for family housing units that were never completed.

Once the regime fell and the blanket of fear lifted, many of these buildings were looted for windows, doors, plumbing, and electrical fixtures, or simply vandalized in reprisal against the old regime. That damage is most of what Colloton and her team are working to undo.

Intensity

"In 30 days we've determined project requirements, identified a contractor, secured the money, awarded the contract, mobilized the contractor, and begun construction," said Colloton of the \$10 million program, the first phase of an Iraqi-wide military reconstruction effort. Phases I and II are right behind and will be well into construction soon.

The task included re-developing maps and project drawings; the originals had been lost long before the onset of Operation Iraqi Freedom.

Because of the remote location of the facility, and with the lack of water and electrical utility connections from national systems, Colloton and her team

works closely with the Iraqi contractor, AL Mansoor Construction Company, a state-owned enterprise, to solve the need for essential utility systems for the unfinished facility.

"Even now we're still having difficulty getting potable water brought to the site from the nearby town of Balad Ruz, 17 kilometers (about 10 miles) away," said Colloton. Generators were flown in by IAP, a company that has worked closely with the Corps on other emergency response missions, to provide the necessary electricity to the site. "We still have a ways to go," said Colloton.

Different army

The pace of the team was important for the facility to be ready to accept the first Iraqi recruits, roughly 700 soldiers (an entire battalion), at the beginning of August for a nine-week training program. Three thousand more are expected in November.

The clock is ticking for Iraq to develop their own security, and it is ticking faster for the team of Iraqi engineers and other organizations, including the Corps of Engineers, that must provide facilities for that army.

This will be a different Iraqi army. Under the Hussein regime, the army existed specifically to oppress and exploit the Iraqi people. The new army will be made up of willing recruits. It will be professional and non-political, with sworn allegiance to the Iraqi people. It will be a force for stability, not a threat to its neighbors.

Strange neighbors

Coalition forces were using the Kirkush facility as a base before it was identified as the first training site for the new Iraqi army; now they operate as neighbors to the trainees.

"On one side of the base we're building these facilities, on the other side was our forces," said Colloton. "People you used to think were your enemy were living on one side and you were on the other. It was a definite shift in thought."

Force protection issues had to be coordinated to allow coalition military operations to continue, yet allow access for Iraqi contractors to finish the facilities.

Such separation is not entirely unlike training bases in the U.S. where new recruits are isolated from other post activities to enhance their focus on training. "The separation helps the trainers maintain a consistent program with the recruits," said Colloton.

In addition to the military training sites, the Baghdad Central FEST is involved in assessments and reconstruction of a variety of facilities, including schools, municipality buildings, the Baghdad City Hall, and prisons for the Ministry of Justice. They coordinate with the Ministry of Interior for police and fire station reconstruction, and work with the Ministry of Housing and Construction on various efforts like the inspection of roads and bridges throughout the capitol.

Ten years ago, the Midwest fought 'The Rain Machine'

For St. Louis District, the flood of 1993 was "our war." There were no guns or bombs, but there was a persistent and unyielding foe — the river waters. People, property, and livelihoods were at stake. People worked to the point of exhaustion. Flood fighters got little sleep, often operated on pure adrenaline, and usually couldn't remember the last time they ate.

Some of the most severe flooding in 1993 occurred in St. Louis District, which covers 27,000 square miles and is equally divided between Missouri and Illinois. The confluence of the Missouri and Mississippi rivers is about 15.5 miles north of St. Louis, Mo. The Upper Mississippi River Basin above St. Louis covers 701,000 square miles in 13 states and three Canadian provinces. Eventually, every drop of rain that falls in this vast area and reaches a creek, stream, or river flows past St. Louis.

The total water volume passing St. Louis during the main flood, from June 26 to Sept. 13, was about 112 million acre-feet. This could cover the entire state of Missouri to a depth of 2.5 feet. At the flood crest, on Aug. 1, there were 1.4 million acres flooded in St. Louis District. Of the flooded acreage, about 72 percent was cleared land.

The Rain Machine. "Contrary to the beliefs of some, the Great Flood of 1993 was not caused by levees, loss of wetlands, navigation structures, flood plain development, or any of several other reasons," wrote Gary Dyhouse, retired Chief of Hydrologic Engineering in *Myths and Misconceptions of the 1993 Flood*. "The flood was caused by unprecedented rainfall over wide areas of the basin and over many months of time."

Rainfall from January until July in 1993 was 150 percent or greater than normal in most of the Upper Mississippi River Basin. Mark Twain Lake in Monroe City, Mo. received 58 inches of rain during 1993, two inches shy of being classified a rainforest. Lake operations manager Dennis Foss said it felt as though the rainstorms were stuck and kept running the same track over and over again.

That's almost exactly what happened...some pundits called it "The Rain Machine."

There were two equally persistent weather patterns — a warm, moist ridge of high pressure sat over the Atlantic coast and the southeastern U.S. from early June until the end of July, and an equally persistent pool of cold, dry air settled over the Rocky Mountains and northern Great Plains states.

The warm, moist air condensed as it rose over cooler air, resulting in numerous drenching showers and thunderstorms that extended from the central Plains, through the Upper Midwest and into the western Great Lakes.

The significant rainfall wasn't the only thing contributing to the record flow.

"Have you heard of the 'Perfect Storm'?" asked Dave Busse, Chief of Potamology. "Well, the 1993 flood was a 'Perfect Flood.' There was a wet fall, heavy snowfall, a wet spring and rain, rain, and more rain."

Defenses. Those conditions made the Flood of 1993 the greatest recorded flood in St. Louis, and the second costliest weather disaster to strike the U.S., exceeded only by Hurricane Andrew. The flood impacted tens of thousands of people in seven Corps districts. Forty-seven people died in the flood, and there were at least \$15 billion in damages.

St. Louis District distributed more than 13 million sandbags, 112 portable pumps, 163 rolls of snow fencing, and

nine thousand rolls of plastic during flood fight operations. The seven Corps districts impacted, Detroit, Kansas City, Memphis, Omaha, Rock Island, St. Louis, and St. Paul, distributed 31 million sandbags. Close to 400 St. Louis District employees, 254 office and 143 field personnel, actively participated in the flood fight.

Frontline defense during a flood is reservoirs and levees. Thirty-six Corps flood control reservoirs in the basin above St. Louis, stored more than 10 million acre-feet of flood water during 1993. That had a significant impact on lowering the flood level. Without federal levees or reservoir projects, damages in St. Louis District would have been almost \$7 billion. Federal levees and reservoirs prevented \$5.5 billion in damages.

Because of their visibility, the Corps' navigational locks and dams are often considered by the public to be flood control structures. The district's locks and dams were greatly impacted by the flood, but they could not have reduced its severity. Locks and dams are low water structures used to help maintain a nine-foot navigation pool upstream of their location.

Lock and Dam 24, Clarksville, Mo., was the first St. Louis District project to face the rising flood. The lock was closed on June 28, and district volunteers helped sandbag the control house, maintenance building, and standby generator.

Volunteers. Over a period of seven different days, including two weekends, a total of 211 people helped fill 50,000 sandbags with two million pounds of sand. Tom Quigley, acting Chief of Design Branch, was working a detail position in operations during '93. He oversaw the locks and dams and saw a great benefit to asking for district volunteers.

"The beauty of volunteers is you have lawyers, park rangers, engineers, technicians, and other district specialists," Quigley said. "It really brought the people of the district together."

Lock and Dam 25 in Winfield, Mo., was closed July 1, the same day the District Engineer, Col. James Craig, activated the district's Emergency Operating Center (EOC). Lock 25 faced a unique situation when the area levee overtopped July 3, and the area was only accessible by boat. Sandbags were filled on the Illinois side of the Mississippi River and ferried over to the project.

Most people knew that the Mississippi and Missouri rivers were flooding, but area tributaries were greatly impacted too. The Kaskaskia Lock and Dam, in Modoc, Ill., is on the Kaskaskia River, not even one mile from its confluence with the Mississippi River. The lock was in and out of operation four times during 1993. The longest period was July 4 to Aug. 28, although on Aug. 26 they started locking though during daytime only.

Closings. The Port of St. Louis was closed July 5, and Lock 27 on the Chain of Rocks Canal, was closed to traffic on July 7.

Mel Price Lock and Dam, Alton, Ill., was closed July 10, the same day the Mississippi River, between St. Louis and Cairo, Ill., was closed to upbound vessels. The next day, July 11, the same stretch of river was closed to downbound traffic, and the Illinois River was closed from the mouth at Mile 0 to Mile 63.

On July 15, the Kaskaskia River was closed from Mile 0 to Mile 30.

When the district's EOC went to 24-7 operations on



Backwater flooding claims a large area along the River Peres. (Photo courtesy of St. Louis District)

July 8, the district's flood fight "officially" began. Sector engineers and flood fight team members were dispatched to all the problem areas and assisted the local drainage and levee districts.

In 1993, the St. Louis flood protection system included 39 federal systems, 43 non-federal systems, 713 miles of levee protection and five reservoirs. So flood fight teams were working along hundreds of miles of river.

Flood fighters had to battle four different crests during 1993. Flood stage predictions and crest locations consumed peoples' every waking hour. Temporary sandbag walls had to be raised whenever the river level rose.

Heroic efforts were being made at the sandbag walls, but areas still had to be evacuated for safety. On July 15, evacuations started in several Illinois levee districts south of St. Louis, among them Harrisonville, Stringtown, Prairie Du Rocher, Fort Chartres, and Ivy Landing.

Granddaddy of sandboils. On July 22, the EOC received a call that the granddaddy of all sandboils had developed at the north end of the St. Louis Floodwall. Water coming under the floodwall created a geyser on the landside with an estimated flow of 500 to 1,000 gallons a minute.

Ed Demsky, one of the first Corps employees onsite, recalled "When I got near the floodwall to look at the sandboil, I saw a geyser of water 18 inches in diameter shoot four feet up into the air. A truck backed up and dumped sandbags that were blown away like confetti."

Rock was dumped on the geyser to stop the flow. During the next week, the void under the wall was grouted shut, rock was placed riverside, and a dike was built around the area. Quick action protected 3,000 acres of industrial and commercial development.

Unfortunately, not every battle was a success. Levees along the Illinois River were overtopping despite valiant efforts by locals.

"The Illinois River is primarily agricultural levees, and they're built to a certain level," said Tom Niedernhofer, former Illinois River flood fighter. "They were never intended to hold back water for several months."

'No more!' On July 18, the Nutwood Drainage and Levee District (D&LD) overtopped, followed by the Eldred D&LD on July 31, and Hillview and Hartwell D&LDs on Aug. 1. But in the middle of them stood one dry levee district — Keach Drainage and Levee District. "Keach became the line in the sand," said Mike Kruckeberg, Illinois River flood fighter. "It was like people said 'No more!'"

The Keach levee was raised by placing sandbag walls on the flank levees and building a three-foot-high wood flood fence covered with plastic, along the mainline levee. Keach survived a crest three feet higher than the top of the levee. Hard work and some risk saved the levee district.

There were plenty of other miraculous events during the '93 flood. Harold Smith, a Corps lake employee, survived being swept into a levee breach at Bois Breve D&LD, across the river from Chester, Ill., on July 25.

Probably the most unforgettable image from the flood is the live coverage, shot by KSDK-TV, showing Virgil and Darleen Gummertsheimer's farmhouse, near Columbia, Ill., washing away when the Columbia D&LD breached on Aug. 1.

More than 14,000 acres of land and many farms and homes were quickly flooded as water rose nearly one foot per hour. The initial breach took place at the north end, and just a few hours later the south flank levee overtopped. The force of the flooding continued and broke through the northern flank of the next levee district, Harrisonville.

'Backfire.' Harrisonville, Stringtown #4, Fort Chartres, and Ivy Landing #5 D&LDs are one continuous levee system that protects 46,500 acres of farmland and homes. As water filled the system, it was feared that a dangerous domino effect would threaten the other downstream levees. Prairie Du Rocher D&LD was the next levee district, and it was feared that the flood waters would jump the lower flank levee at Fort Chartres and overtop Prairie Du Rocher.

A quick, innovative decision was made to deliberately breach the lower flank of the Fort Chartres levee and allow water to backfill the district. This would create a water



A Corps workboat carries sandbags to National Guard soldiers. (Photo courtesy of St. Louis District)



A marquee says it all in the Flood of '93. (Photo courtesy of St. Louis District)

cushion for the water coming down from the north. A contract was awarded Aug. 3 and a large section of levee was removed.

"Like starting a backfire to stop a wildfire, this initiative, which was boldly supported by our commander, Col. Craig, saved the day and Prairie du Rocher," said Claude Strauser, Chief of Hydrologic and Hydraulics.

On Aug. 1, the same day the Columbia levee overtopped, the Mississippi River crested at St. Louis at 49.58 feet, exceeding the previous record of 1973 by 6.35 feet.

The river crested at Kaskaskia Lock and Dam on Aug. 10 with more than nine feet of water over the top of the lock wall.

Aftermath. After the crests, as the flood slowly receded, the EOC discontinued 24-hour operations on Aug. 10 and closed Aug. 27. Lock and Dam 24 was placed in operational status on Aug. 16, and by Aug. 22 all locks and dams were operational again except Kaskaskia Lock and Dam, which opened Aug. 28.

It was a bizarre flood that left 18 inches of mud along Kaskaskia's lock walls, created one critical situation after another, evicted many area families from their homes and bred mosquitoes, in the words of Robert Lockhart, lock and dam operator and ranger at Kaskaskia Navigation Project, that were "so big they had Boeing stamped under 'em."

Even though the flood fight was coming to an end, the recovery was just getting started. A special Recovery Task Force was stood up and led the district's efforts.

"The bottom line is, despite the fact that we had to deal with another flood and more damage in the fall, and despite the fact that we had to do our construction during the winter months, the district repaired well over 100 levee breaches before spring flooding in 1994," said Jim Zerega, principal project manager for the Recovery Task Force.

Many fought. When reflecting on the flood, it is important to note that St. Louis District did not fight alone. The magnitude of the flood was so large that 55 personnel from the then-Lower Mississippi Valley Division, Mem-

phis, Vicksburg, and New Orleans districts, and the Waterways Experiment Station came to help the district.

The request for pumps from local interests was tremendous. Memphis, Vicksburg, Detroit, New Orleans, and Louisville districts loaned 64 pumps, and the Federal Emergency Management Agency made available 32 excess pumps from Miami.

The Missouri and Illinois Army National Guards, the U.S. Coast Guard, and contract carriers provided aircraft support during the flood. Thirteen hundred soldiers from the Missouri National Guard, and 4,600 from the Illinois National Guard assisted with flood efforts in St. Louis District.

The American Red Cross operated 28 shelters in the St. Louis flood region during the peak stages of the flood. These shelters provided beds, meals, nursing care, and counseling to about 900 people. In addition, they operated 10 fixed kitchens and 55 mobile kitchens. The Red Cross served about one million meals a day to flood fight victims and volunteers.

Mike Kruckeberg remembers how the Ladies Auxiliary and local church groups along the Illinois River were preparing meals every day that were served by the Red Cross, and farmers who stood to lose everything were donating crops to the Red Cross.

The Salvation Army also responded, assisting with the needs of about 12,000 evacuees in the St. Louis area alone.

Many Corps employees who fought the flood have retired or moved on, but their legacy lives on.

"The Flood of 1993 was an event without precedence in modern times," wrote Col. James Craig, now retired. "Through it all, the team performed magnificently and selflessly. My lasting memory is of a group of professional district team members whose selfless dedication, forethought, and calm analysis saved an enormous potential loss of life and property."

(Nicole Dowell compiled this article from St. Louis District's special Summer 2003 issue of *Esprit*, which has an in-depth history of the Flood of 1993. You can read this special issue at <http://www.mvs.usace.army.mil/dinfo/pa/esprit/esprit.htm>)

New study will help preserve Fla. Keys

By Christina Swanson
Jacksonville District

She's a life-long surfer, but little did this Texas native dream that one day she'd ride the wave of coastal preservation in the Florida Keys Carrying Capacity Study (FKCCS).

Debbie Peterson has led the effort to create the nation's first spatially-driven, comprehensive model, which shows the real-time impact of growth proposals in the Florida Keys. The model shows how residential and commercial growth can affect an area in terms of environmental impacts, socio-economic issues, and infrastructure capacity.

"The model uses science to determine the appropriate amount of development, redevelopment, and even restoration required for a healthy ecosystem in the Florida Keys, while including human needs as well," said Peterson, Jacksonville District's Planning Technical Leader for the FKCCS. The model allows effective evaluation of the appropriate course for development in the Florida Keys during the next 20 years.

Peterson's coordination and leadership in this seven-year, all-encompassing study, scope of work, and cooperative agreements, earned her both Headquarters' and South Atlantic Division's (SAD) Planning Excellence Award for 2002.

Population damage. It all began with litigation in the early 1990s as environmentalists opposed further growth outlined in the Monroe County Comprehensive Plan.

The Florida Keys provide a breeding ground for the third largest coral reef system in the world; losing such a natural wonder would be a disaster. But the Florida Keys ecosystem is slowly dying, mainly due to too much human intrusion. According to James Murley, past Secretary of the Florida Department of Community Affairs, with more than 80,000 Keys residents and two million visitors annually, people are "particularly concentrated and have significant adverse impacts on the... coral reef, which protects the Keys, and provides the tourist attraction to begin with."

Other environmental quality problems include pollution from cesspits, and threats to more than 100 endangered and threatened species, including the Florida Key deer at Big Pine Key.

Another important factor is to consider the difficulty of evacuating residents and visitors during natural disasters.

All of this led to the Florida Administration Commission Rule that asked for a FKCCS. Then WRDA of 1996 (Section 528(b)(3)), authorized the Corps to expedite a series of critical projects associated with the Central and South Florida Restoration Study, and the FKCCS became a priority, ranked fourth by the South Florida Ecosystem Restoration Task Force and the Governor's Commission for a Sustainable South Florida.

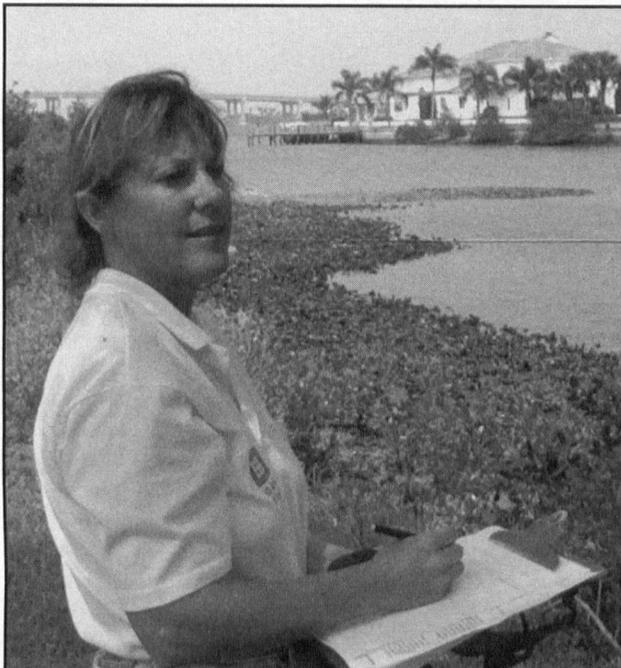
Unlike traditional Corps studies that determine federal interest in a civil works construction project, the FKCCS developed a software planning tool, the Carrying Capacity Impact Assessment Model (CCIAM), used by state and local government as a guide to determining if and how development plans should be revised to maintain the integrity of the Florida Keys ecosystem.

Scope of work. Thirty-eight individuals representing government agencies, lawsuits leading to the FKCCS, and concerned citizen groups helped develop a scope of work for the FKCCS. They identified outstanding issues and uncertainties regarding species, ecosystems, relationship of land development activities and the marine environment, water circulation and water quality modeling, and ecosystem modeling.

Next, a group of 65 technical experts met for a series of workshops to address the uncertainties and to refine the study approach, which is when the CCIAM was born. A Local Planners Working Group, made up of representatives from local, state, and federal government, the tech-



The Florida Keys Carrying Capacity Study will help preserve the natural beauty of the Florida Keys. (Photo courtesy of URS Corporation)



Debbie Peterson of Jacksonville District helped lead the Florida Keys Carrying Capacity Study. (Photo by David Smith)

nical contractor, and the South Florida Regional Planning Council, was formed to monitor the study progress and assist in ensuring that the study and model responded to the users' needs. This group also evaluating six scenarios representing potential futures for the Florida Keys.

The public was kept informed and encouraged to participate during the entire process as an aggressive public outreach program ensured the public's concerns were heard and incorporated.

Approval. Finally, the National Academy of Science (NAS) conducted an Independent Technical Review of the FKCCS and CCIAM. Their final review gave the work high marks. The NAS said that the FKCCS and CCIAM provide an important contribution to science-based analytical capability, and is a major contribution for researchers and planners in the Florida Keys.

Now that the study and model have received the highest stamp of approval, Peterson is demonstrating the model's capabilities. In June, Peterson, along with Jim Duck, Planning Division Chief, and Ricardo Calvo, URS Corporation (technical contractor) presented an overview to SAD showcasing potential uses.

Now Corps experts are getting answers to many ques-

tions about the amount of waste and storm water loads that the Keys pour into Florida Bay and the surrounding marine environment, and what happens to it.

The district's Regulatory Division plans to use the model for permitting decisions in the Florida Keys, and is looking into applying the methodology toward promoting smarter development in other fast-growing areas in Florida.

Word is getting out as to its significance and applicability. As Duck said, "To our knowledge, nothing has ever been done to this scale. It truly is cutting-edge technology."

This became apparent when URS Corporation submitted the study and model for Engineering Excellence awards to the Florida Institute of Consulting Engineers and the American Council of Engineering Companies. The study and model received Grand Awards in both the state and national competitions, an honor comparable to winning the Academy Award.

Even the Institute for Water Resources (IWR) refers to the success of the FKCCS and recommends that other areas in the U.S. use it to determine how much growth is appropriate for their particular issues and conditions.

People. "It's been an incredible process involving a team of 65-plus scientists plus two reviews by NAS, with the result being very high marks that validate the value and usefulness of the study and model," Duck said. "And it was Debbie's imagination and spunkiness which helped put together such a large and diverse team that made everything possible."

As the IWR pointed out in their review of the study, the right people on the study team is critical to the success of a cutting edge study such as the FKCCS, with its many stakeholders and their expectations. "These types of studies require strong leadership, flexible team members, and sponsoring agency support," the IWS said.

Peterson will continue to be a part of the CCIAM effort, as there are still opportunities to update the model and databases for additional uses.

"The model has truly set a precedent for developers and can be used anywhere just by changing the database and parameters," Peterson said. And she will continue to coordinate information on coastal/ecosystem protection projects throughout Florida, from the Florida Keys to Silver River, to formulate the best plans for an area's needs.

"It's been rewarding to complete a tool that is successful in meeting the needs of the area," said Peterson. "It's satisfying to know that we've developed a tool that will help find the correct balance for such a significant habitat as the Florida Keys."

Around the Corps



Michelle Thompson analyzes samples for lead and other heavy metals.

Research partnership

The Engineer Research and Development Center (ERDC) in Vicksburg, Miss., and Alcorn State University (ASU) in Lorman, Miss., are providing area science and engineering students experience in real-world of research. Through the ASU/ERDC Education Partnership Agreement, full-time college students work in one of four laboratories at the ERDC Vicksburg site.

Under the contract student program, highly qualified graduate and undergraduate students studying biology, chemistry, math, computer science, environmental science, marine science, hazardous materials management, physics, atmospheric sciences, information science and technology, and electronics technology work at ERDC while attending classes at ASU. They must be enrolled or accepted for enrollment at ASU, must remain in good standing in a degree program, must maintain a 3.0 GPA for undergraduates and 3.2 GPA for graduates, and must be a U.S. citizen.

Dr. Troy Stewart, Chairman of the ASU Chemistry Department, said the ASU/ERDC partnership is a "match made in heaven. No other institution offers this opportunity to our students. There are such a diverse number of programs at ERDC that use our students. Their time at ERDC often drives them to pursue their master's and doctorates. A graduate of ASU is often invited to do the research for his thesis at ERDC."

Dr. Dave Tazik, ERDC point of contact for the partnership agreement, manages the program in close coordination with Stewart. Tazik says that the students are not the only ones who benefit. "This program gives our research staff access to bright young minds and able bodies

to assist in our research programs, and gives ERDC a stake in and makes us a partner to academic development and achievement in Southwestern Mississippi."

Special Recognition Award

Gail Emanuel, a civil engineer in the Specifications and Service Branch at the Huntsville Engineering and Support Center, received a Special Recognition Award on Oct. 11 during the eighth annual Women of Color Technology and Business Awards Conference. She received the honor in the Career Achievement category.

Brownfields conference

Interested in learning how Corps involvement in the national brownfields program is helping to move the concept of sustainable development? Then "Brownfields 2003: Growing a Greener America," the national brownfields conference Oct. 27-29 in Portland, Ore., is the place to be.

The conference draws heavy participation from Corps stakeholders as federal partners share their ideas on how to support brownfields cleanup and land revitalization with states, communities, tribal governments, and grassroots organizations. This year, the conference emphasizes revitalization in port communities (portfields).

Lt. Gen. Robert Flowers, the Chief of Engineers, will be one of the keynote speakers during the opening session on Oct. 27. Flowers will join Marianne Lamont Horinko, Acting Administrator for the EPA, in outlining how, during these times of budget constraints, the two agencies can work together to put brownfields properties back into productive, sustainable use through initiatives such as the Urban Rivers Restoration Initiative, and partnering with National Oceanic and Atmospheric Administration on its portfields efforts.

This year's conference is focusing on sites near waterways, and offer a treasure trove of sessions ranging from green design, intermodal transportation, urban river restoration, portfields, land use controls, eco-industrial development, rural brownfields, financing cleanup, etc.

Information on this year's conference can be found at www.Brownfields2003.org.

Congressional recognition

The Corps and the Assistant Chief of Staff for Installation Management (ACSIM), were honored with "Golden Shears Awards" at SAVE International's Congressional



Habitat for Humanity

Eleven Engineering Division volunteers in Louisville District took a day of annual leave on Aug. 21 to help Habitat for Humanity.

In nearly 100 degree heat, they turned a rough pit into a residential crawlspace over which the habitable parts of the house will be built.

Back row, from left, are Marty Waking, Jay Trumble, Terry Sullivan, Aaron Becker. Front row, from left, are Steve Holmstrom, Jerry Simms, Chris Karem, Tara O'Leary, Mrs. Aaron Becker, Dick Kennard, and Rosemary Gilbertson.

Education Reception on Sept. 10.

The Corps has saved and/or avoided more than \$3.8 billion since program inception, including more than \$192.3 million in FY02 alone. Maj. Gen. Ronald Johnson, Director of Military Programs, accepted the award on behalf of the Corps, and John Nerger, Director of Facilities and Housing, accepted the award for ACSIM.

Correction

Rhonda Adams was incorrectly identified in a photo caption on page 5 of the Sept. 2003 *Engineer Update*.

New life for commissary

On Aug. 2, the 94th Regional Readiness Command (RRC) hosted a grand opening and dedication of the new "Maj. Gen. Harry J. Malony Building" at the former Fort Devens, Mass.

Fort Devens has a long history in the Army. But during base closings in the '90s, Fort Devens was one of the casualties, along with a new commissary built by the Corps at the post.

Devens has found a second wind in the Army as the "Devens Reserve Forces Training Area," and the former commissary has been renovated as the new headquarters of the 94th Regional Readiness Command (RRC).

Abandoned for 10 years, the brick one-story commissary with mezzanine required all-new mechanical, electrical, and interior architectural construction for its metamorphosis into a command headquarters. Originally built by the Corps in the early 1990s, the renovation was designed by the architectural firm of Mason and Hanger Group through Louisville District and the Army Reserves.

The same New England District employees who completed the original commissary managed the construction. The contractor was J&J Contractors, Inc., of Lowell, Mass.

NED's Western Resident Office at Devens turned over the \$5 million renovation project on time and within budget. The project provided administrative, classroom, assembly, caged storage, and special purpose spaces to support the operations of the 94th RRC Headquarters.

A follow-on project to design and build landscaping/security measures at the front of the building, and to renovate the old landscaping and exterior features from the '90s, was issued to Diversified Technologies Consultants of North Haven, Conn.

HR Corner

Website is job info source

What positions are available?
Where are the applications located?
What is the application process?
Who can I contact?

These are familiar questions that are continually asked by current employees and potential applicants. We now have one source for answers at www.usace.army.mil/employment. This is the new employment website recently launched for job applicants. The site provides many useful features both for current and potential employees. The features include:

- "All About Us", which describes our mission.
- "Careers", which covers the various occupations and a brief synopsis of the duties and responsibilities.
- "I Am", which provides applicants an explanation on the various appointments that may be available to them.
- "Search For a Job", which links to all activity and Civilian Personnel Advisory Center (CPAC) homepages. At the CPAC homepage, there should be a

listing of all current vacancies at that location. Most importantly, this feature provides information on the application process and procedures.

- "Pay and Benefits", which explains how pay is established, entitlements, and other workplace initiatives that may be available at local districts, i.e., telework, incentives, flexible work schedules, etc.

- "Recruitment Calendar", depicting what recruitment activities a Corps representative will be attending.

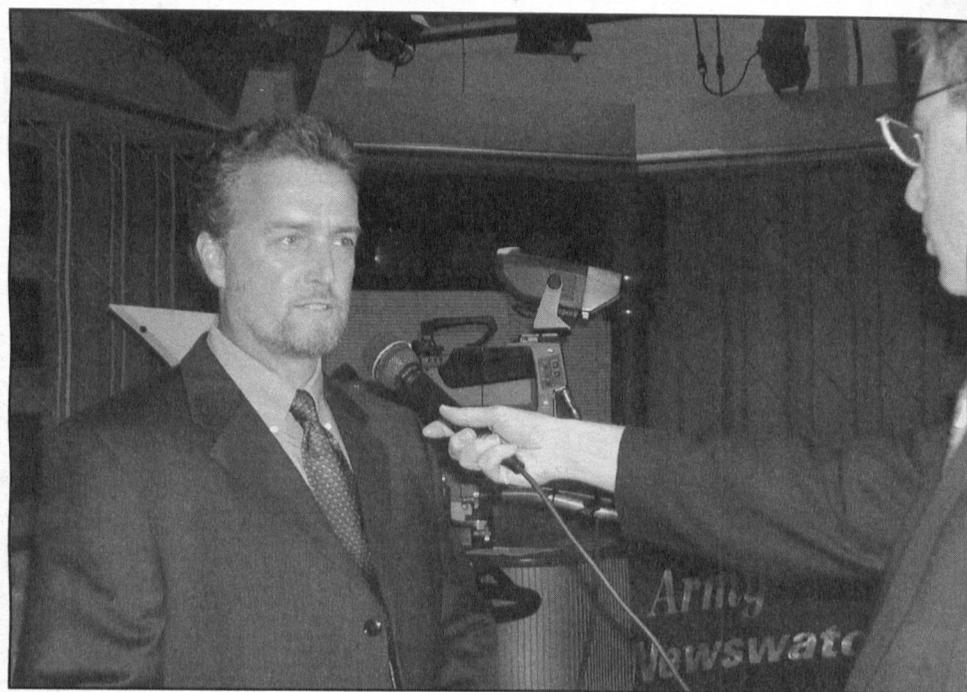
- Other features include "Frequently Asked Questions" and "Who to Contact."

In addition to the website, other newly developed recruitment initiatives include a recruitment CD that will link applicants to the website, a new recruitment poster, the *How to Apply* brochure, and the *Recruiters Manual*.

All of these initiatives are being completed to promote the U.S. Army Corps of Engineers as the employer of choice.



Kayla Eckert (left), Brad Thompson, and Steve Pugh tour the Houston Navigation Channel. (Photo courtesy of Bruce Sexauer)



David Martinson practices talking to the news media. (Photo courtesy of Bruce Sexauer)

Planner training program to continue

By Bernard Tate
Headquarters

If the Planning Associates Program were a vehicle, it might be a Harley-Davidson. In 1903, the first Harley motorcycle was built in Milwaukee, Wis. Now, 100 years later, the old V-Twins still roar down the highway. They look like something out of the Eisenhower era, but they've been completely updated for the 21st century.

The PA Program is much like that. Nearly eight years after it was discontinued, the old program for training water resources planners has been resurrected, rebuilt for the 21st century, and proven that classic designs can still meet the challenges of the future.

Graduates

On Aug. 22, the first group of eight planners graduated from the 15-week pilot program. All were enthusiastic about the demanding training that took them all over America. When asked if this program should continue, Steve Pugh of Baltimore District said, "Absolutely. If you want to continue the level of work the U.S. Army Corps of Engineers has done, keep the reputation of excellence, then you've got to pass on what you know to the next generation of leaders. And this is one of the best ways to do it."

"As we face the fact that most of our experienced individuals have been in the Corps for a long time and are now eligible for retirement, I think it's critical that we have another group of folks who have their depth of experience in planning, who can then continue that mission," said Margaret Johanning, Tulsa District.

Need

That was the reason the Planning Associates Program began in the first place.

"The planning field doesn't have a job series," said Russ Rangos, the PA Program Administrator. "In addition to planners, we have biologists, geographers, engineers, archeologists, and economists in the planning function. We need to take all these people from different academic disciplines and show them how the other disciplines contribute to the planning process."

The PA Program was developed to do just that, beginning in 1962 as an 11-month residential program at Fort Belvoir, Va. For more than 30 years, the program trained people in planning Corps projects. It ended in 1995, a victim of reduced financing, a de-emphasis in planning, and a change in demographics that made it difficult to sustain a long-term residency program.

But the need to train planners did not go away. As the baby boom generation retired, leaders and knowledge left the Corps. In 2000, the Engineering Inspector General told senior leaders that the Corps was losing planners, the remaining planners were not being trained, and the quality of reports was going down.

Redesign

A task force from the Planning and Policy Division of the Directorate of Civil Works designed a new course to train planners to the journeyman level, equal to what they might learn in about three years of normal experience. The task force laid out a series of seven training modules covering major Corps missions (navigation, ecosystem restoration, water supply and hydropower, and so on), each hosted by a different major subordinate command. Each module was one to two weeks long, with two or three weeks between modules for the planning associates to return to their home district.

"It's not like it used to be when I started, when a person entered a field and stayed there for their entire career," said Rangos. "People entering the work-force today might have as many as five careers during their working lives. So we need to get people trained and developed to a higher level much faster than before."

Praise

Despite the grueling schedule, the eight planning associates had nothing but praise for the program as they graduated.

"We've all gained an enormous amount of experience, something we wouldn't have been able to gather on our own," said Noel Clay, Wilmington District. "The projects we work on will be better projects because of what we've learned...tricks-of-the-trade to ensure our projects go through smoothly."

"In a district, you see things from a rather narrow point of view," said Jon Brown, Buffalo District. "The experience of seeing other districts and how they solve their problems, seeing the interaction of other districts with their divisions, and seeing the interaction between Headquarters and the entire process was totally eye-opening. I went from a worms-eye view to a birds-eye view."

"We were exposed to such a pool of Corps experts," said David Martinson of Alaska District. "It was refreshing to hear so many people so excited about their jobs, and wanting to do a good job, and so excited about increasing our expertise. That was phenomenal."

"I had a great experience," said Brad Thompson of Rock Island District. "The goals I had going in (gain a

national perspective, gain contacts throughout the organization, and learn the best management practices) are what happened."

The major subordinate commands have submitted their nominations for the Planning Associates Program of fiscal year 2004. The Planning and Policy senior staff is reviewing them, and expects that 12 will be selected. They will find a number of changes.

Changes

"We're scheduling the next class to begin at the same time as this year's class, in late January, but we anticipate that graduation will be in October, not August," said Rangos. "This is an exhausting, rigorous program, and we found that two or three weeks between modules wasn't enough time for them to decompress. So the schedule we've laid out has two or three weeks between the first few modules, because we don't want too much time to pass while the PA team bonds. But after the third module, we'll put no less than three or four weeks between them. That'll give them a little more time with their families, and to catch up on work back in their districts."

The next class of planning associates will also experience less jet lag.

"Almost every module had the PAs changing time-zones," said Rangos. "We once flew them from Cape May, N.J., to Portland in a weekend, and the last module took them from Atlanta to Alaska overnight. That's a killer, especially on top of the training demands. So we've reordered things so they're not jumping more than one time-zone at a time."

The next class of PAs will also find the training somewhat different.

"We found that some of our classes had more lecture than was easy to absorb," said Rangos. "So we're changing our lecture schedule and content, and the next class will find more 'hands-on' experiential training in the modules. Nothing made this class come more alive than getting the opportunity to brainstorm measures and formulate plans that could solve real-life problems that were the subjects of the instructor presentations. In fact, this class contributed real work and real products to planning activities already underway. That was awesome."

All of this and more will combine to create a program that will help secure the planning field's future in the Corps of Engineers.

"In addition to using the resources we have, we must prepare resources for the future," said Johanning. "And I think that's what the Planning Associates Program does for the Corps. It makes sure we have a strong planning capability for the future."