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SEPTEMBER'S THEME:

Infrastructure Conference

DWIGHT'S NOTES

God Bless America!

Your world and mine has changed in ways big and small since 11 September 2001. Some of you may have experienced personal tragedies from the terrorist attacks. Our hearts go out to you. We have ALL suffered from the anguish our country feels. General Flowers and his commanders have provided superb leadership in the Corps recovery efforts, from the physical recovery at NYC and the Pentagon to the emotional recovery of his 35,000 people. North Atlantic Division and New York District, though "victimized", have made us proud, along with the hundreds of others from all over the Corps how joined them in the debris removal and other recovery work at the WTC.

Our force protection experts at the Protective Design Center (Omaha), Electronic Security Center (Huntsville) and ERDC (all over) are in the midst of assessing better ways to protect Pentagon employees from any future threats in close partnership with the Pentagon Renovation Office. Baltimore District and HQ are working with DoD officials to help design and construct a memorial to the victims at the Pentagon.

Many Corps employees are putting in longer hours and getting much more involved with "force protection" and "infrastructure security": topics that take on new meaning and energy. People are turning to the talented engineering and construction people all over the Corps to help us respond to our country's needs. You have heard many of the stories about this. You will certainly hear many more.

The theme for this issue of E&C News, Infrastructure Conference, reflects on our meeting in Reno in August. The conference was such an outstanding success. Over 700 people participated in it. A lot was learned in a short time. I wish to personally thank to hard charging team in HQUSACE, South Pacific Division and Sacramento District for all their organizational and logistical support. Special thanks go to all the people who taught us during 250 or so individual presentations. You knocked our socks off. The conference takes on new meaning and importance since 11 September, though.

We must continue to learn from each other through the contacts we made or renewed at Reno. We must give the highest priority to using our knowledge and relationships to defeat terrorism. You may be called upon to support Army and Air Force installations with expert advice in your fields. You may be involved on "tiger teams" for a host of anti-terrorism/force protection activities. You may be asked to deploy with U.S. forces sometime in the future to help augment the Army's engineering capability. Do all you can to help our Nation win this war!

DWIGHT'S NOTES (CONTINUED)

Even if you are not **directly** involved in these efforts you are **indirectly** involved. The day-to-day work you do to help the Corps plan, design, construct, operate or maintain DoD or USACE infrastructure is vital to our nation's economy and our National Security. Continue to do it well. We need you.

Essayons!

Dwight

(Editors' note: If you want to share your thoughts with our readers regarding Dwight's Notes send an email to the E&C News editor (charles.pearre@usace.army.mil). A synopsis of your comments will be published in the next issue.)

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Infrastructure Conference

2001 USACE INFRASTRUCTURE SYSTEMS CONFERENCE

The first USACE Infrastructure Conference was held on August 14-16, in Reno, Nevada. 600 USACE employees and 100 vendor representatives attended it. The conference was a unique gathering of engineers from many disciplines: electrical, mechanical, geotechnical, structural, materials and construction. Everyone met together for a half day of presentations. Highlights of this session included videotaped remarks by LTG Flowers, and a talk by Dwight Beranek on Maintaining Technical Expertise, which was the theme for the conference. Subsequent sessions consisted of up to a dozen smaller groups participating in discussions and listening to technical presentations. There were ample opportunities for cross discipline exchanges. Unlike past USACE technical conferences, there were no proceedings published for this conference. Instead, all presentations, and any written papers, which were submitted, have been loaded on a website for easy access by all:

<http://gis.spk.usace.army.mil/2001isc>. Whether you attended this conference or not, take a look at this site and benefit from the knowledge of your USACE peers.

POC: JOE HARTMAN, CECW-EIV, 202-761-0301

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District of the Month

THE VICKSBURG DISTRICT



The Vicksburg District includes 68,000 square miles and encompasses seven major river basins and 278 miles of the Mississippi River's main stem, in Arkansas, Louisiana, and Mississippi. The District is also responsible for about 800 miles of commercially navigable streams and rivers including the Ouachita-Black system, the Pearl, the Red, and the Yazoo Rivers. In recent years, the District's workload has averaged well over \$200 million annually for projects including navigation,

flood control, environmental restoration, and work for other others.

To handle the large workload and geographic area, the District, headquartered in Vicksburg, Mississippi, maintains two area offices, at Vidalia, Louisiana, and Greenwood, Mississippi, and two field offices at Shreveport and Monroe, Louisiana. Each of these offices supervises construction and other activities in its area. We are among the largest and oldest of the districts, unique in our revetment program, hydropower, and recreational opportunities offered. The District's mission throughout its history of service has been overwhelmingly civil in scope; emphasis upon military construction, such as occurred during World War II, has been rare. The overall mission of the Vicksburg District has ranged from improvement of navigation to flood control, military preparedness, disaster relief, and life-quality improvement. Today, our stated mission is to provide quality engineering and other professional services to develop and manage environmentally sustainable water

resources and other projects in an effective, efficient, and responsive manner to meet or exceed our customers' expectations.

HISTORY -- The Vicksburg District traces its history back to 1873, when Capt. William Henry Harrison Benyaurd opened a U.S. Engineer office in Monroe, Louisiana. The new office was primarily concerned with surveys and removal of wrecks and other navigational hazards in the Yazoo River in Mississippi and the Ouachita River in Louisiana following the Civil War. On June 28, 1879, an Act of Congress created the Mississippi River Commission to direct all work on the Mississippi River. The same act provided for U.S. Army Corps of Engineers districts to do the work. On August 1, 1884, Capt. Eric Bergland established the first permanent Engineer office in Vicksburg. Since Bergland, the District has had nearly 50 District Engineers.

During its more than 100 years in the area, the Vicksburg District has been responsible for a wide range of activities, including shortening the river by more than 100 miles, building seven flood control reservoirs, returning navigation to the Red and Ouachita rivers, standardization of 1,758 miles of levees, and returning navigation to the port city that serves as its headquarters.

THE FLOOD OF 1927 -- More than a century ago, the Vicksburg District began working on the Mississippi River and its tributaries to improve navigation and reduce flooding. However, the present comprehensive program began after the disastrous flood of 1927. The work of the past half-century has included cutoffs, floodways, reservoirs, and levees. Much of the ongoing work on the river -- bank stabilization, dikes, and dredging -- is performed to keep the river in the desired channel for navigation and flood control. With the Ransdell-Humphreys Flood Control Act of 1917, the Federal Government committed itself to flood prevention and control. The act appropriated \$45 million to the Mississippi River Commission, to be spent \$10 million a year for flood control and prevention. Local interests were required to pay at least half the cost of flood protection works and provide all levee rights-of-way. In the early days of flood control, Corps levee construction was limited to areas where it improved navigation. Because of this renewed effort, the Vicksburg District was able to aid local levee boards in the Mississippi Delta.

Major flooding occurred in 1912, 1913, and 1927. The flood of 1927 was the most disastrous in the history of the Lower Mississippi Valley. An area of about 26,000 square miles was inundated. Levees were breached, and cities, towns, and farms were laid waste. Crops were destroyed, and industries and transportation paralyzed. Property damage amounted to about \$9.3 billion at today's prices. Over 500 lives were lost, and over 600,000 people displaced. Out of this event grew the Flood Control Act of 1928, which committed the Federal Government to a definite program of flood control. This legislation authorized the Mississippi River and Tributaries (MR&T) Project, the Nation's first comprehensive flood control and navigation act.

The Vicksburg District has had ample opportunity to prove its engineering expertise through more than the construction of levees, dams, and harbors. District interest also includes environmental protection and restoration, recreation, water resource development, and many other areas. The District has found innovative answers to many questions, setting standards for engineering nationwide.

THE REVETMENT PROGRAM -- One of the largest of the Vicksburg District's operations is the annual revetment program. Using articulated concrete mattresses cast at fields in Richardson, Arkansas, Delta Point and St. Francisville, Louisiana, the District repairs and fortifies banks against the destructive, gnawing current of the river. For the revetments to be effective, they need at least two



Mat Sinking Unit in Operation

qualities – economy and strength. The present use of articulated concrete mattresses is the culmination of 100 years of engineering evolution. One of the earliest forms of revetment in the Lower Mississippi Valley was the willow mattress, woven by hand on site and weighted into place with stone. The willow mats were successful for several reasons. The main ingredient, willows, was abundant in most places along the river, and young willows could be woven into a mat that was flexible enough to conform to the irregularities of the bank. But the willows had their drawbacks – the tedious job of weaving the mats, eventual deterioration of the material, and, by 1910, the scarcity of willows. Experiments with reinforced concrete as a revetment material began in Vicksburg in 1914, and the first successful reinforced articulated concrete mattress was developed in 1917 and patented by D. H. Shearer. The 3-inch-thick concrete slabs were reinforced with a wire mesh extending on all sides. The 16-block mattresses are now cast in units of 13 uniform slabs and barged to the worksite as needed. These large slabs are then tied together using special copper-coated wire and pneumatic tying tools.

The concrete mattresses are placed on the bank by a unique conglomeration of “floating plant” consisting of a spud barge, mooring barge, and mat sinking barge working simultaneously to string the mat together in the form of a huge blanket of mat. The mat-sinking unit is the only plant of its kind in the world. With support personnel for the unit, over 360 people are involved in this operation, making it the largest hired labor operation in the Corps of Engineers. Over 20 million square feet of mattress are placed each year at over 30 different locations along the Mississippi River from near Cairo, Illinois to the Gulf of Mexico, and along the Atchafalaya River and Red River. The mat-sinking season usually runs from mid-July until early November of each year.

Recently, the Mat Sinking Unit has made amazing strides in its efforts to increase safety for those workers involved in this hazardous duty. The Mat Sinking Unit has received the Chief of Engineers safety award for two years in a row.

To make full use of the inland waterways, the District and local interests have worked together to develop ports and harbors on many rivers and streams. The District has developed ports of all sizes, from the 245-acre Vicksburg Harbor – one of the busiest ports on the lower Mississippi – to the 10-acre Claiborne County Port near Port Gibson, Mississippi. The Vicksburg District has been involved in various aspects of port development and construction on the Ouachita, Mississippi, Red, and Arkansas



Vicksburg Harbor



Dredge Jadwin

ivers. The District partners with local navigation interests to learn more about their needs and concerns. The District operates the Dredge Jadwin and employs three other contract dredges to accomplish its navigation mission. Navigation on our nations waterways has long been recognized as one of the most economical means of transporting bulk goods and is vital to the economy of the region.

Locks and Dams -- Unhindered barge traffic is an old sight on the lower Mississippi River, but similar traffic on many rivers and streams is impossible without man-made aids to ensure a navigable channel during low water seasons.

Modern concrete locks and dams on the Pearl, Ouachita, and Red Rivers provide year-round navigation for commercial and pleasure river traffic.

The three Pearl River locks, located in southern Louisiana, were transferred to Vicksburg from the Mobile District. Though operable, the locks were placed in caretaker status in the 1970s, because of lack of adequate traffic.

In 1982, the Vicksburg District assumed the responsibility for development, operation, and maintenance of the Red River Waterway from the New Orleans District. The construction of five modern locks and dams was completed as scheduled on December 31, 1994, and construction of river training aids continues. This \$2-billion waterway will provide year-round 9-foot navigation to Shreveport, Louisiana.



Lock and Dam # 3 -- Red River



Columbia L&D – O/B Waterway

The new Ouachita Navigation System replaced the antiquated 6-1/2-foot system completed in 1925, of which Locks 6 and 8 in Arkansas were the last remaining operational parts. H. K. Thatcher, Felsenthal, Columbia, and Jonesville locks and dams use state-of-the-art mechanical and electronic equipment to efficiently pass river traffic.

Environment -- The Vicksburg District has a variety of ongoing environmental enhancement projects that protect endangered species and replace wildlife habitat lost to man's encroachment. One of the District's greatest environmental successes is Lake Chicot, the largest natural lake in Arkansas. For over 60 years, silt- and pesticide-laden runoff was channeled into the lake. Most of the sport aquatic life was killed and the lake filled slowly with silt. The \$90-million Lake Chicot Pumping Plant project, including auxiliary structures, keeps poor quality water from entering the lake, channeling it to the Mississippi River instead. The project, designed to return life to the lake, will enhance the overall quality of life in a three-state area and includes other considerations such as flood control, water supply, and recreation, in addition to environmental restoration.

The District also reforests approximately 2500 acres per year in bottomland hardwood trees to mitigate for impacts associated with construction projects. Since 1990 we have reforested over 19,000 acres. The District also incorporates wildlife enhancement features at all of its projects. In addition, we have cooperative agreements with a number of state, local, and private organizations to enhance wildlife habitat on our projects.

Hydropower -- The Vicksburg District first became involved in hydroelectric generation in 1950 with the construction of Narrows Dam on Lake Greeson in Arkansas. It was the fifth Corps power plant in the nation, and started with only two generating units. A third unit was added later.

Blakely Mountain Dam on Lake Ouachita became the second District power plant in 1956, and DeGray Dam became the third in 1972. DeGray Dam was the first Corps hydropower dam using a pump-back, reversible generator to ensure an ample water supply for peak-load power generation. Though used for years in Europe, pump-back generators have only recently become economically competitive in the United States. Realizing that rain might not always replenish water used for power generation, reversible turbines are used to pump water from a storage reservoir below the dam back up to the power pool for reuse. In recent years, the three plants have produced up to 360 million kilowatt hours of electricity, enough to supply the needs of almost 40,000 homes. The power produced represents about 577,000 barrels of oil or 144,000 tons of coal.

Emergency Assistance -- The Vicksburg District has acquired extensive experience in handling flood emergencies over the years. In dealing with seven major river basins, including the unpredictable Mississippi River, rapidly rising stages often signal a flurry of activities. Stages are carefully monitored, and levees and flood control structures are constantly inspected for signs of weakness.

On numerous occasions, district engineers have responded to life-threatening situations, such as tornado emergencies, rescuing trapped survivors, and helping other emergency personnel gain access to the area. Often District personnel are among the first on the scene. In recent years, spill emergencies have involved everything from petroleum to chlorine. One of the most hazardous jobs the Vicksburg District ever faced was the removal of sunken chlorine barges at Natchez, Mississippi, in 1962.

Regulatory -- Ensuring the navigability of rivers and streams is an important responsibility, but possibly more important is protecting or restoring the quality of all our waters and wetlands. After all, water is a limited resource. The Vicksburg District takes its regulatory responsibilities under Section 404 of the Clean Water Act very seriously. The District has been highly successful in reducing the delays in the permit program. The target processing time for permits is 60 days. Also, the District has published several additional general permits, which require only about 21 days for processing. Our goal is to be customer focused and administer the regulatory program with minimal delays while also protecting the nation's waters, including wetlands.

Recreation -- Recreation is a large business for the District. In recent years, total annual visitation to District lakes and recreation sites on the Ouachita, Black, and Red Rivers in Louisiana has approached 30 million and is continuing to grow.

In the 60 years since Sardis, the oldest of the District's lakes, opened to the public, more than 600 million people have visited the District's recreation facilities. Growing visitation also means hundreds of millions of recreation dollars for state and local economies.

Vicksburg District manages 170 recreation areas in its three-state area and nearly 3000 miles of shoreline (equal to the entire Gulf Coast). With 183,000 total acres in recreation pools, there is ample space for water-related activities. The projects also offer excellent hunting and fishing in many areas.

Each District Lake has qualities, which benefit the public. The nationally recognized Lake Ouachita Geo-Float Trail guides boaters around the lake, highlighting and describing many geological formations unique to the area. The trail calls attention to the special beauty of the area and gives visitors an increased understanding of the formation of the



Senator Lincoln (D-AR) and Dr. Westphal (Assistant Secretary of the Army for Civil Works) speak at Lake Ouachita

Ouachita Mountains. The trail was the first water-based interpretive trail included in the National Trails system. Lake Ouachita was selected as one of 11 lakes nationwide to participate in the National Recreation Lakes Program. This will allow Federal agencies to develop partnerships with private sector or state land agencies to enhance recreations opportunities.

Another one of our lakes was selected as the U.S. Army Corps of Engineers Project of the year.

Grenada Lake in Mississippi co-sponsors a water safety extravaganza called "Thunder on Water" which attracts over 140,000 participants each year.

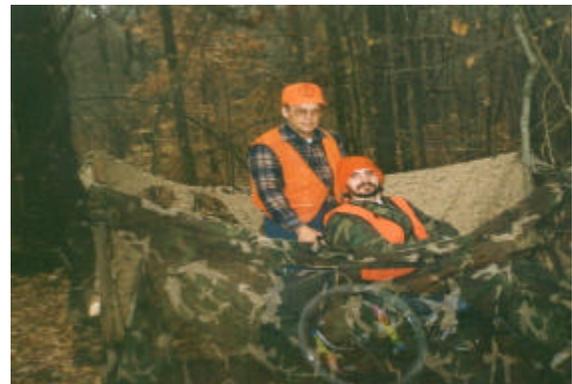


District Engineer Colonel Robert Crear and Arkabutla Lake employees accept prestigious "Project of the Year" award at USACE awards ceremony in Washington

Arkabutla Lake hosts a deer hunt for persons with disabilities each December. The two three-day hunts have around 60 hunters participating and 30 volunteers assisting with the hunt, logging over 2000 hours of work.

Managing Resources -- In addition to their recreational potential, the Vicksburg District's lakes and game management areas are excellent resource management tools. Forest management is another important job for lake personnel.

An increasingly important resource and wildlife management tool at the lakes is the District's volunteer program. Hundreds of people of all ages have offered their talents and time to perform needed work that might otherwise be neglected because of manpower shortages. Over 40,000 volunteer hours were contributed in 2000. The District manages over 225,000 acres of forestland. Revenues from timber sales amounted to \$1.5M in 2000 alone.



Water Supply -- Demands on our nation's water supply are increasing, and for the past quarter century or more, water resources management has been rapidly growing beyond the District's statutory authorities and mission. Congress has instructed Vicksburg District to assume a leadership role in the area for water resource research, resource feasibility studies, and resource management.

In the Mississippi Delta, the Vicksburg District has worked with several state and local agencies to determine the causes and solutions for declining groundwater supplies. Increasing municipal, industrial, and agricultural use of groundwater has left the supply greatly depleted.

Community Awareness -- The Vicksburg District is recognized as a leader in community support and workplace volunteerism. National award-winning programs such as Project Huck Finn, Project Bo Bear, and the Mississippi River Course combine with our Community Champions program to encourage our employees to make a difference in the place where they live and work, and in their own lives and careers as well.

Other community projects include the Adopt-A-School Program, the Green Team, Adopt-A-Highway Program, our District Christmas Committee, the Salvation Army Angel Tree, and support to local ROTC units.

The Vicksburg District is comprised of military and civilian professionals who take great pride in meeting public needs. Our work force includes members from numerous fields, all-working together to get the job done. As the engineer arm of the U.S. Army, the District employs several types of engineers, such as mechanical, electrical, civil, structural, and hydraulic. Building for the future requires that our archeologists preserve the past, and fish and wildlife biologists and foresters maintain the delicate balance between nature and our projects. Our park rangers and park technicians give safe, enjoyable recreation experiences to millions of visitors to Corps facilities. Planners, economists, and agronomists determine the long-range effects and possible benefits of proposed projects. Carpenters, clerks, electricians, towboat pilots, lawyers, draftsmen, laborers, photographers, writers, computer programmers, accountants, cartographers, cooks, surveyors, secretaries, painters, welders, realty specialists, radio operators, printers, and Army officers are in service to the Nation.

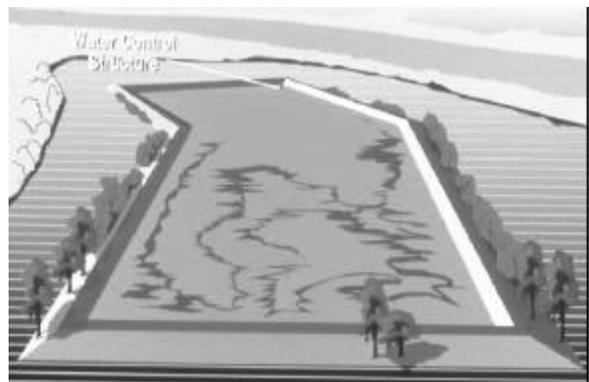
*POC'S: ROBERT L. FLEMING, CEMVK-ED, 601-631-5475
AND J. LEO PHILLIPS, CEMVK-CD, 601-631-5096*

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AWARD-WINNING YAZOO PROJECT DELIGHTS THE LANDOWNER

A revolutionary concept in dredge disposal, that captured the praise of the landowner, the sponsors, and the habitat inhabitants, recently won the Army Corps of Engineers' Vicksburg District the Chief of Engineers' Design and Environmental merit award.

The innovative design of a dredge disposal facility on Item 3B-1 of the Upper Yazoo Projects not only achieved the required necessary disposal volume for the river excavation, but also created valuable waterfowl habitat, a positive for the Delta environment.



**The engineer's vision matched the success of
the final product, a haven for wintering
waterfowl.**

“We worked hand-in-hand with the landowner to get our necessary flood control goals accomplished while making this project palatable to the landowner and a plus for the environment,” said Joe Hendrix, project manager for the Yazoo Basin Project.

Since the Corps turned the facility over to landowner Fred Poindexter in June, he has been busy planting hardwoods on the retaining dike that surrounds the 60-acre site. He said the waterfowl were already utilizing the area.



The Greenwood Area Office oversees this innovative project, under sponsorship of the Yazoo-Mississippi Delta Levee Board.

“I have seen a zillion ducks down there of every kind and they have used the new area a good bit this year already,” he said.

His management plans call for draining the facility in June, and then planting milo and smartweed, a natural food source for waterfowl.

Migrating waterfowl returning next winter should have plenty to eat since Poindexter farms rice on land surrounding the facility and rice is also a favorite food.

“It turned out a lot like I wanted it and I’m very pleased with it. I’m going to have a good combination of natural foods. The more I fool with it the more I like it,” Poindexter said.

“One of our challenges with channel enlargement projects is where to dispose of the material we remove when widening a channel,” said Corps’ civil engineer P. B. Sloan. “Our total yardage was about 1.7 million cubic yards for that 6.2-mile reach. That’s more than 300,000 dump trucks!”

“In a lot of areas, we are using a thin-layer disposal method, putting material in layers of three or four feet so it will dry out quicker so the farmer can reuse the land faster for agricultural purposes,” Hendrix said.

Though this thin layer disposal can actually take marginal agricultural lands suitable for soybeans and turn them into prime cotton land, Poindexter wasn’t interested in this type of facility on his property.

“It really didn’t cost us anymore to accommodate him and we ended up with a win-win situation,” Hendrix said.

The Corps constructed a containment dike to hold the dredge material, with higher dikes that used less of Poindexter’s land. An elongated island in the middle and a water control structure added to its use as a waterfowl facility.

“He can flood it or drain it all the way down and plant food plots for the waterfowl,” Hendrix said.

With 120 miles of channel improvement required over the next ten years in the Yazoo Basin, particularly in the Greenwood to Marks area, the Corps anticipates similar joint landowner projects and equally delighted customers.

POC: ROBERT L. FLEMING, CEMVK-ED, 601-631-5475

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BAYOU RAPIDES DRAINAGE STRUCTURE AND PUMPING PLANT

Amid the vibrating of sheet piling and the steady rumbling of hydraulic excavators and massive dump trucks, the 60-year-old Bayou Rapides Drainage Structure and Pumping Plant patiently waits for her retirement. The old structure -- now laden with cracks in her culverts, but still in operation -- soon will be replaced with a more efficient, more esthetic structure. She has served the city of Alexandria, Louisiana well over the years, protecting residents, businesses and hospitals by diverting backwater from Bayou Rapides. The structure passes the backwater from Bayou Rapides through and over the mainline levee into the recently revitalized Red River.

Construction of the new Bayou Rapides Drainage and Pumping Plant was awarded to Merrick Construction Company out of Cottonport, Louisiana for \$7,680,200. Notice-to-proceed was issued on March 22, 2001 with contract duration of 700 days. The combination gravity flow structure and pumping station will consist of four 10-foot by 12-foot gravity flow bays and two 111 cfs pumps.

The new structure is a unique, critical project with high visibility, requiring interaction among many entities in addition to the U. S. Army Corps of Engineers and the prime contractor, including the City of Alexandria, local levee board, parish hospital, and utility companies. Due to the number of entities involved, implementation of a formalized partnering approach was a must. The partnering process began with a meeting attended by key members from all parties involved in the project. The meeting was lead by a professional facilitator and concentrated on establishing common goals, identifying potential concerns, drafting a partnering agreement, and committing to support the partnering concept. Follow up meetings are held at the job site once a month to discuss current and upcoming issues and to reinforce the partnering commitment. Though the project is only 25% complete, partnering has already proven to be effective in solving issues as well as creating a pleasant work environment.



The design and construction of the 222 cfs pumping station is further complicated by its location, underground utilities, limited access, and the requirement to keep the existing pumping station operational and mainline levee intact until the new structure is complete. The structure is surrounded by critical components of the city; the parish's main hospital lies to the south, and a medical clinic is located to the north. The Red River and mainline levee are located to the east and the main artery into downtown Alexandria is located to the west. Conventional sloped excavation methods to reach the 30-foot required depth would not be possible due to the confined area allowed for construction.

The confined work area required a braced excavation technique to be used, a concept new to the Vicksburg District. AZ 36 section sheet piles were vibrated through the clay material and then driven by an impact hammer the final two meters into tertiary. Extra precautions and monitoring were required during the vibrating of the sheet piling because microsurgery was being performed in the hospital building just 300 feet away. Once the sheet piling was driven, subcontractor Hayward Baker drilled down 36 feet using a process called SuperJet grouting in which cement/water mixture is jetted at high pressure to create a horizontal array of overlapping soilcrete columns 13 feet in diameter and 6

feet high. The soilcrete columns were aligned in a grid and used to brace the sheet piling at the point that would eventually become the bottom of the excavation and provide a solid working surface.



The sheet piling, which will remain in place, was driven to form a rectangular cell 75 feet by 115 feet. The sheet piling parallel to the flow of the water will serve as forms for the back face of the structure. The sheet piling at the upstream and downstream ends will be cut off to allow water to flow through the structure. Once the sheet piling was driven, long arm hydraulic excavators were used to excavate slightly below the elevation of the top brace. The top braces were welded in place and excavation continued slightly past the elevation of the second layer of braces.

The remaining braces were welded in place at the appropriate elevation, and final excavation continued to the tops of the soilcrete columns. With all the material excavated, the contractor can begin forming, erecting rebar, and placing concrete in lifts. The structure, containing 11,600 cubic yards of concrete, is anticipated to take eight months to complete.

Custom-made pumps and motors, which were designed, built, and tested early on in the project, will be ready for installation once the concrete structure is complete. A walkway spanning across the structure, in line with the mainline levee will allow pedestrians to continue to use the top of the levee for recreational walking and jogging.

The completion of this project will provide the city of Alexandria, Louisiana with flood protection for years to come from a project that is both pleasing to the eye as well as blends into the surroundings.

POC: JIMMY WADDLE, CENWK-CD-C, 601-631-5095

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NATCHEZ BLUFF STABILIZATION



Nestled in the high bluffs overlooking the majestic Mississippi River is the city of Natchez, Mississippi. Natchez is the oldest settlement on the lower Mississippi River. In 1798 the United States established the Mississippi Territory, and Natchez was made its first capital. From that point Natchez continued to grow in size and wealth due to its geographical location. As steamboat and flatboat traffic increased into the Natchez landing, the trail leading out of the city north became the historic Natchez Trace Parkway. The wealth from the booming commerce of

the city was so established that prior to the “War of Northern Aggression,” or the Civil War, over half of the millionaires in the United States lived in and constructed elegant mansions in Natchez. Most of these homes remained intact because the city was never a major military target during the war.

The bluff at Natchez has experienced general sloughing and slides dating far back into time. Bluff failure at Natchez is a result of natural slope processes that have been acting over geologic time since the bluff was deposited. The bluff along Natchez is approximately 140 to 180 feet high. . In a few areas, the bluff line has moved toward the city of Natchez a distance of about 50 to 80 feet since 1864.

This history of sloughing and sliding, coupled with its associated property damage and loss of life, has caused private citizens, city, and federal and congressional leaders to express a need for remedial measures to mitigate further bluff retreat. If not stopped, the continued retreat of the bluff in some areas would jeopardize historical properties along the bluff.

Extensive engineering studies, performed by the U.S. Government, have identified the processes of surface erosion -- rotational slumping, soil fall, soil slide, mudflow, and soil creep -- as responsible for the retreat of the bluff at Natchez. Infiltration of water into the loess soil that composes the top of the bluff plays a major role in causing instability and failure. The infiltration of rainfall and water from leaking utilities saturates the loess, adds weight to the soil, and weakens the clay and calcium carbonate bonds which cement the grains of silt together, which results in a loss of strength.

Initial conceptual stabilization measures recommended for the bluff consisted of a combination of reinforced earth slopes, stone columns, soil berms, and tieback walls, and were estimated to cost approximately \$25 million. A geotechnical design team developed a much less expensive alternative for remediation known as soil nailing.



To date, under separate contracts, three reaches have been remediated using this method. Hayward Baker Inc. remediated two of the reaches and Schnabel Foundation Company remediated one reach. The total sums of these contracts were approximately \$13.3 million and included stabilization of about 6000 feet of bluff with approximately 5000 soil nails with lengths varying between 35 to 65 feet. This technique allows construction of a shotcrete wall to be built from the top to the bottom in a series of six- to seven-foot lifts. This

construction technique requires holes to be drilled into the bluff and soil nails inserted into these holes. Each nail is then grouted into place from the bottom of its hole, and a steel reinforcement grid placed around each nail, with a wire mesh placed along the entire length of the reach. The lift is then covered with shotcrete, forming the retaining wall for the bluff. After completion of each lift, the next lift below is excavated and constructed as necessary until the full height of the wall has been completed. Because of the historical significance of the antebellum homes and their close proximity to the completed wall, it was decided to color the finished wall to match the surrounding soils. The Natchez Bluff stabilization project produced an excellent engineering solution while preserving the city's historical value.

POC: GEORGE L. SILLS, CEMVK-ED-G, 601-631-5631

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SAFETY PLUS A HUGE POSITIVE FOR VICKSBURG

This past spring at the Jackson, Mississippi Hilton, Vicksburg District held a great celebration of construction safety success. Over eighty government and contractor personnel from across Vicksburg District gathered to recognize successful safety efforts on construction projects completed during the past year. Both contractor personnel and Corps project personnel were recognized.

As a part of the celebration, several recognized leaders in the safety arena from the Corps and the construction industry made presentations to the group emphasizing the importance of sound safety practices in construction. This seminar is an annual event held as a part of the Vicksburg District

Construction Division's Safety Plus Program. The program has shown phenomenal success in contributing to reduced accident rates on Corps of Engineers projects throughout the Vicksburg District. Since inception of the program, contracts administered in Construction Division have experienced a drastic drop from an accident frequency rate of 1.3 in 1997 down to its current level of 0.5 in FY2000 and even further to 0.25 so far in 2001.

The highlight of the annual celebration is the awards banquet. In addition to great food, the banquet this year included a keynote address from New Orleans humorist and Safety Specialist, Mr. Bruce Wilkinson. Col Crear, District Commander at that time, recognized the following contractors for safe performance:

Quinn Construction – Vicksburg District Annual Safety Plus Award, Small Projects category.

Lincoln Builders – Vicksburg District Annual Safety Plus Award, Large Projects category; Vicksburg District nomination for Chief of Engineers Safe Contractor of the Year Award for 2000 and recently announced to have won this honor.

Cajun Constructors – Chief of Engineers Safe Contractor of the Year Award, 1999.

The seminar and banquet was a great success in focusing on safety and bringing the entire government-contractor partnership to realize the conference theme, “believe in safety.” The Safety Plus program has likewise brought the Vicksburg District to new levels of excellence in contract safety. Thinking has transformed to now understand that “zero accidents” really is an achievable goal. Construction workers really can be sent home in the same condition they arrived – to consistently return to their families unharmed.

POC: J. LEO PHILLIPS, CEMVK-CD, 601-631-5096

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USS CAIRO ROOF SHELTER REDESIGN

In 1978, the salvaged remains of the Union Gunboat USS Cairo were placed on display at the Vicksburg National Military Park. The Cairo was the first vessel to be sunk by a torpedo that was electrically detonated. It lay at rest in the mud and silt of the Yazoo River until 1960, when researchers brought up significant pieces preserved by the thick mud. By 1965, the Cairo was again above water.

Authorization by Congress was given to the National Park Service in 1972 to restore the USS Cairo for display in the Vicksburg National Military Park. Due to delays in funding, construction of the display



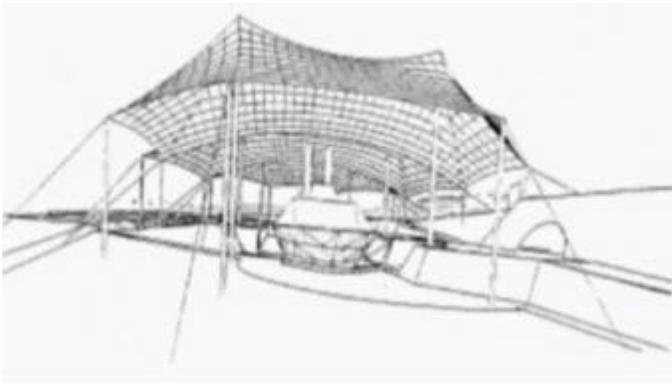
did not commence until 1977. The display consisted of a concrete and wood laminate crib structure. This structure held the remaining pieces true to their original location and a 20-ton, 130-foot by 250-foot open frame space truss with a metal roof deck was erected to protect the Cairo from the elements. Unfortunately, by trying to preserve the open atmosphere surrounding the Cairo, this type of structure was ineffective against the sunlight and wind-blown rain, and Mississippi's abundant wildlife found it irresistible when it came to nesting and roosting. The sunlight, rain, and bird droppings were further deteriorating the historic gun ship's

remaining wood and iron.

The National Park Service contracted with James R. Barber, AIA, an Atlanta, Georgia architect, to redesign a roof shelter that not only protected the Cairo from the elements but also served as a deterrent to the birds. Mr. Barber's National Park Service-approved concept was a fabric roof structure, made from a PTFE-coated fiberglass material. The material selected allows the penetration of light, but blocks the harmful UV rays and rain. As a deterrent to the nesting birds, minimal underlying support brackets are required and therefore, allow the birds no place to roost or nest.



Total work involved in this contract includes construction of a temporary roof structure to protect the gunboat during construction, demolition of the existing structure, installation of the new fabric structure including drilled pier foundations, 2300 cfm fan units, flood and spot lighting, and a complete fire protection system. Malouf Construction Corporation out of Madison, Mississippi was awarded the construction contract for \$2.9 million. The notice to proceed to start construction was issued in June 2001, with contract duration of eleven months. To date the contractor has constructed the temporary roof structure, removed the existing roof structure, and is currently preparing to drill test piers for load testing.



Due to the close proximity of the U. S. Army Corps of Engineers, Vicksburg District office to the military park, the National Park Service contracted with the Vicksburg District to provide Title III A/E services consisting of on-site inspection, shop drawings and submittal review, site visitation and final inspection.

The National Park Service, U. S. Army Corps of Engineers, and the contractor have worked closely together during the construction of this

project. The contractor has coordinated his work with the National Park Service, which has allowed the Cairo and the associated museum to remain open for most of the construction period to date. Only during the removal of the existing structure and during installation of the temporary roof was the gunboat and museum closed to the public. In the end, the total project will add not only the protection of the historic USS Cairo, but also adds another unique and appealing stop for tourist wishing to capture a little history on film.

POC: KEVIN PACE, CEMVK-CD-C, 601-631-5475

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WEB-BASED SOLUTIONS FOR THE WORKPLACE

From the beginning, changes in technology have been both a product and a process of the engineering world. Whether it was permanently holstering the slide rule in favor of the calculator, or covering the drafting table with a CAD workstation, engineering and construction personnel have always contended with technological transition. As new design tools become available, the impacted processes are evaluated, adjusted, or completely reworked in order to best use these new-tech tools. The

mainstreaming of the Internet over the last few years, with its multitudinous web and email technologies, has spawned an information age that has shifted the transition of technology into an even higher gear. Using the same techniques that provide users with weather forecasts or stock quotes at the click of a mouse, we can deliver accurate, up-to-date engineering information -- such as plans and specifications -- instantly. Utilizing web-based solutions has enabled us not only to complete our projects more efficiently, but also, in many cases, to streamline or improve existing design procedures as well. Engineering Division has successfully developed and deployed several systems that harness the power of the web to improve the quality of work produced by the Vicksburg District.

Engineering Schedule Review -- Our first step to thinking "off the paper" was Engineering Schedule Review (ESR), originally designed as a preparation tool for monthly meetings held by Engineering Division that track the progress of projects. These schedule review meetings help identify any difficulties that could effect timely completion of milestones as they arise. Before ESR, lead engineers were responsible for providing paper copies of updated schedules for each of their projects to the division chief prior to each meeting. There was no easy way to perform statistical analysis on this mass of paper without manually compiling reports from month to month. ESR provides an easier, more consistent way to track schedules through the use of templates. Using ESR, each lead engineer can update his schedules online for immediate perusal by the chief, as well as other Engineering Division personnel. In addition to the design schedules, ESR also contains quality control plans, relocation plans, plus other relevant information for the tracked projects. Furthermore, reports can be generated for on-screen viewing or printing for a variety of criteria -- such as listing all projects with design complete dates within a particular fiscal year, or displaying all current projects for a certain lead engineer -- allowing each user of ESR to focus on the data relevant to their responsibilities.

Electronic Design Documentation -- Having access to the documentation of previously designed projects is extremely valuable when designing a new project. Engineers can often reference earlier designs, saving time and money, by not having to "reinvent the wheel." In the past, computations and figures that were instrumental in designing a project were hard to find -- especially if the designer had transferred, retired, or simply not kept a copy of his developmental data. To make matters worse, paper records were stored in a sprawling array of filing cabinets and flat files that could span several offices, and were often incoherent, incomplete, and inconsistent. Electronic Design Documentation (EDD) was devised as a solution for keeping an historical record of all salient information for a project from its inception through completion. The primary advantage of this approach is its centralization; a directory structure is created for each project on the EDD web server, and that directory structure contains all information related to that project -- including spreadsheets, digital photographs, scanned documents, specifications, and CAD files. The lead engineer identifies the essential documents to be indexed and made available on the EDD system. This persistent repository of information is available to all users of the Vicksburg District intranet -- independent of the original designer's personal filing system and physical location.

Comment Management System -- During district office review, projects come under the scrutiny of many diversified professionals. With the traditional process, reviewers located in the headquarters building, as well as those in the field, would receive hard copies of the plans and specifications for review. Reviewers would then submit their comments on paper forms and mail them back to the lead engineer. The lead engineer would then determine the design team member with the appropriate technical expertise for response, comment by comment. After determining to incorporate or not incorporate each comment, the design team leader would direct which changes would be made to the plans and specifications, and the comments and responses were consolidated by quality control

personnel for reproduction and distribution to all reviewing offices. A comment resolution conference would then be held to discuss any comments that, for one reason or another, were not resolved to the commenter's satisfaction. This traditional paper-shuffling approach was laborious, and prone to bottlenecks in several areas. Reproduction and distribution of the plans and specifications for review was expensive. Because reviewers were operating independently and unaware of each other's comments, redundancy ensued and much effort was wasted in responding to these unnecessary comments. Furthermore, scheduling the comment resolution conference was a logistical nightmare, attempting to accommodate the schedules of all necessary local and field personnel.

Developed from a daughter component of EDD, the Comment Management System (CMS) provides online access to the plans and specifications in portable document format (PDF). The reviewer can also comment on a particular drawing or section of the specifications by simply selecting a hyperlink. Each reviewer has real-time access to all comments as they are made on a project, helping prevent duplication of effort. If desired, CMS can be configured to send a notification email to the designer responsible for a particular section or drawing. Also, reviewers can view the responses to their comments as they occur, giving the original commenter the opportunity to rebut or provide additional information to support his position. In this fashion, CMS is used to resolve issues of comment incorporation, eliminating in most cases the need for a comment resolution conference. Not only is the district office review process painlessly streamlined by using a web application to deliver the review documents as well as to receive the comments, but conducting reviews using CMS significantly also reduces the barrage of paper generated by the review process.

Future Developments -- Plans are now underway to combine these three separate systems into a single Project Documentation System (PDS). Having a single interface to all aspects of a project during development, design, construction, and operation will provide users with a more seamlessly integrated view of a project's data. Enhancements to the system include support for tracking architect-engineer task orders and workload, as well as direct linkages to our web-based Lessons Learned system. By continuously simplifying the steps required to quickly find and utilize project-related data, we can ensure that the Vicksburg District will continue to excel, never losing or compromising the valuable experience gained from decades of dedicated service to our nation.

*POC'S: JASON FAIRCHILD, CEMVK-ED-D, 601-631-5582
AND SCOTT STEWART, CEMVK-ED-D, 601-631-5567*

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Update

PARTNERING MEETING WITH ACEC

On 28 August 2001, HQUSACE staff held a very successful partnering meeting with the American Council of Engineering Companies (ACEC; formerly American Consulting Engineers Council). The primary discussion topics were:

- USACE leadership changes
- USACE vision and campaign plan
- Implementation of new USACE-ACEC partnering agreement
- FY 2002 Civil Works and Military Programs
- Maintaining USACE technical expertise

-
- ACEC legislative priorities
 - Standard Form 330 for A-E qualifications

Dwight Beranek discussed the Corps' vision as the world's premier *public* engineering organization. He described the spectrum of USACE missions ranging from peace to war, and that the Corps is heavily dependent on the private sector to fulfill these many missions. He reviewed the three goals of the campaign plan: People, Process and Communications. To achieve these goals, USACE must have a world-class, technically competent workforce. Mr. Beranek described how the Corps is currently undertaking an in-depth review of its technical capability to ensure that we are ready for tomorrow's challenges.

We encourage the MSC's and districts to continue their regional and local partnerships with ACEC. We would appreciate receiving the minutes of your meetings.

POC: DON EVICK, CECW-ETE, 202-791-4227

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EVERGLADES RESTORATION PROJECT

It's the largest environmental restoration ever undertaken by the U.S. Army Corps of Engineers. Perhaps it is the largest in the world. Over the next three decades, more than two million acres of Florida's Everglades will be restored to the healthy ecosystem of its past.

"Our challenge is to restore and preserve this important national treasure for future generations," said Lt. Gen. Robert B. Flowers, Chief of Engineers.

The Everglades' waters once spread over the South Florida peninsula in a shallow, slow moving river that was best described as a "River of Grass." Both majestic and subtle, the Everglades unique ecosystem was home to alligators, snakes, panthers, and many other animals and plants.

But development and agriculture over the past half-century have taken their toll. The Everglades are dying. Sixty-eight of the Everglades' plant and animal species are threatened or endangered.

Historically, most rainwater soaked into the ground in the region's vast wetlands. As South Florida developed, the canal system built during the past 100 years (much of it by the U.S. Army Corps of Engineers) worked very effectively and drained water off the land too quickly. Most negative changes in the ecosystem are a direct result of water management to control floods and provide water supply.

"The Corps of Engineers did what the nation asked it to do at that time," said Flowers. "Now we must join our partners and do what we must to protect this unique national ecosystem."

The restoration of the Everglades will be neither quick nor inexpensive.

It took 100 years to create the problem, and it will probably take at least one-third that long to solve it. Congress authorized the Corps to complete a comprehensive study of the Central and Southern Florida (C&SF) Project and the Everglades in the Water Resources Development Act (WRDA) of 1992. More direction was provided in WRDA 1996. Finally WRDA 2000 authorized the Comprehensive Everglades Restoration Plan (CERP) as a comprehensive framework for modifications and operational changes to the C&SF to restore, preserve, and protect the South Florida ecosystem.

The estimated total cost of the comprehensive plan is \$7.8 billion spread out over more than 35 years. It will cost about \$182 million each year to operate, maintain, and monitor the complete project. The cost is split 50/50 between the federal government and the non-federal sponsors. The South Florida Water Management District (SFWMD) is the primary non-federal sponsor.

A \$712 million design agreement with the SFWMD was signed on May 12, 2000. The design agreement covers all aspects of design, including construction plans and specifications. It covers 56 components, pilot projects, and program level activities.

"The CERP is not business-as-usual for the Corps," Flowers said. "It must be managed outside the normal stovepipe way of doing business to ensure continuity between projects, and must make effective use of the Project Management Business Process (PMBP) to integrate efforts across functional areas. The process requires a vertical matrix team concept that involves people from all levels, from the district to the Assistant Secretary of the Army for Civil Works."

Matrix teams with mutually determined policy and procedures have been developed at Jacksonville District, South Atlantic Division, and Headquarters. These matrix teams and the Corps' partners will streamline the management process and provide real-time policy and decision-making capabilities. A future Engineer Update article will focus on "Team Everglades" and the functions, personnel, and responsibilities of the team.

A public Web site explaining the restoration plan is available now at <http://www.evergladesplan.org>.

"The CERP offers the Corps an opportunity to showcase its capabilities," Flowers said. "The entire Corps of Engineers needs to know what's going on with this project. Everyone needs to be excited about it. This has to be an absolute team effort. Our challenge at Headquarters is to support the field and make sure the Corps at all levels is set up for success."

POC: GARY HARDESTY, CECW-B, 202-761-5854

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Dam Safety

DOMINICAN REPUBLIC DAM INSPECTIONS

In June and August 2001, several Dominican Republic dams were inspected using a multi-disciplinary, multi-district team of engineers, led by the Jacksonville District. During both mobilizations, Corps inspection teams were accompanied by engineers from the host agency INDRHI (Dominican Republic's Institute of Hydraulic Resources) and from CDE (Dominican Corporation of Energy). The funding agency, USAID (United States Agency for International Development), requested that the Corps perform PICES-type inspections of Tavera, Jiguey, and Aguacate Dams, with a special focus on dam safety. Currently, the Dominican Government faces water supply and energy shortage challenges, and welcomes the technical assistance of the Corps in maintaining and rehabilitating its existing water supply and energy infrastructure, and in developing a dam safety program.

The inspection teams were led by the Jacksonville District Dam Safety Coordinator, Ed Villano. Other Corps participants included Bob Fulton (SAD Dam Safety Program Manager and Electrical Engineer), Dave Dollar (CESAJ Structural Engineer), Manny DeJesus (CESAJ Mechanical Engineer), Raphael Velez (CESAJ Hydraulic Engineer), Phil Smith (CESAS Geotechnical Engineer), Pedro Luciano

(CELRH Structural Engineer), and Stephen "Duke" Loney (CENWP Mechanical Engineer). Since Spanish is the national language of Dominican Republic, several bi-lingual engineers were included as part of the inspection team to provide translation whenever necessary (Manny DeJesus, Pedro Luciano, and Raphael Velez).

Of the three dams inspected, two were concrete gravity dams (Jiguey and Acuagate), and one was an earth fill dam (Tavera). The three dams range in height from 42 to 110 meters, and have a combined power capacity of 246 MW. A multidisciplinary team was necessary to adequately evaluate the various components of these large projects: reservoirs, earth embankments, spillways, stilling basins, radial gates, instrumentation, galleries, power tunnels, generators, turbines, powerhouses, and switchyards. Standing operating procedures, seismic design, and emergency action plans were also evaluated. Although the inspection team made numerous maintenance and repair recommendations, generally the dams were in good condition and capable of performing adequately. Based on the success of the first inspection in June 2001 (Tavera), the Corps inspectors were invited back for another inspection in August 2001 (Jiguey and Acuagate), with the possibility of additional future inspections, as funding is made available.

POC: EDWARD VILLANO, CESAJ-EN-GG, 904-232-2933

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Information

TERRORISM AND SECURITY COLLECTION

The National Academies of Science has published over 25 recent publications on terrorism and security. A full list of the publications along with ordering information is available at <http://www.nap.edu/terror/>. In addition, all reports can be read online FREE.

POC: CHARLES PEARRE, CECW-EIS, 202-761-4645

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Upcoming Regional and National Meetings and Conferences

RESTORING STREAMS, RIPARIAN AREAS, AND FLOODPLAINS IN THE SOUTHWEST: IMPROVING LANDOWNER ASSISTANCE; INCORPORATING SCIENTIFIC ADVANCES

A workshop sponsored by U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, USDA Natural Resources Conservation Service, Bureau of Reclamation, and Little Colorado River MOM. The workshop Director will be Jon Kusler, Associate Director, Association of State Wetland Managers; and the Onsite logistics coordinator will be Wendy Blackwell.

The workshop is scheduled for October 29-31, 2001 at the Crown Plaza Hotel, Albuquerque, New Mexico.

This training workshop is primarily for a technical and semi-technical audience including federal, state, tribal, and local agency staff (stream, wetland, riparian area, land management, and watershed

management), environmental not for profit organization staff, and academic staff and students. Landowners and others will also be welcome.

The principal goal will be to build state, tribal, local government, federal, and private stream, riparian, and floodplain capabilities to restore streams, riparian areas, and floodplains in the Southwest. The overall question for the workshop is: "How can the effectiveness of stream, riparian areas, and floodplain restoration be improved?" More specific goals include:

- Apply scientific advances to restoration,
- Improve landowner assistance,
- Build local, tribal, state, and federal restoration partnerships including US/Mexican cooperation and cooperation with Indigenous Peoples, and,
- Recommend mechanisms for cooperative restoration on public, private lands, and tribal lands utilizing the Little Colorado Watershed Multiobjective Management Effort and other efforts.

For more information on the workshop contact the Institute for Wetland Science and Public Policy, The Association for State Wetland Managers, P.O. Box 269, Berne, NY 12023-9746, 518-872-1804; Fax: 518-872-2171; E-mail: aswm@aswm.org. Please visit their website at <http://www.aswm.org> for updates on the agenda and speakers.

POC: BEVERLEY GETZEN, CECW-PD, 202-761-4489

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Training

MILCON PROCESS SEMINAR

ACSIM & HQUSACE are pleased to announce a series of two-day seminars on the MILCON Process. The seminars are designed to provide an overview of the Military Construction process, detailed instruction on the DD Form 1391 Preparation, OACSIM/USACE policy and guidance, DD1391 Quality Assurance Team lessons learned, DD Form 1391 Preparation Planning Charrette discussion and key reference information. Instructors from the DD Form 1391 Preparation (PROSPECT) Course, HQUSACE, and OASCIM will provide current information and keys to successful DD Form 1391 project justification documentation.

There is no seminar fee; however, TDY costs are the responsibility of the attendee's organization. **Early registration is recommended since attendance will be limited.** We encourage you to take advantage of this opportunity to enhance your organization's ability to plan, program, budget, and execute successful MILCON projects.

Pre-registration is ongoing for the MILCON Seminars to be conducted Sep through Nov. The website below has been established to ease the process. Please pre-register through this site. The current schedule and hotel location with directions is also available on the web site at <http://www.vwi.com/MILCON/seminarinfo.htm>.

The dates for the Military Process Seminar are:

October 3-4 Kansas City, Missouri
Location: DoubleTree Hotel
Capacity: 100 participants

November 13-14 Honolulu, Hawaii
Location: to be announced
Capacity: 50 participants

October 15-16 Heidelberg, Germany
Location: Astron Hotel, Heidelberg
Capacity: 50 participants

November 27-28 Dallas, Texas
Location: to be announced
Capacity: 100 participants

October 30-31 Seattle, Washington
Location: to be announced
Capacity: 100 participants

POC: EDWARD P. RACHT, CEMP-MA, 202-761-8816

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WMDC LAUNCHES E-LEARNING SEMINARS

Many of have asked OPM to make Management Development Center seminars available via "e-learning." We are responding by offering two of our most essential and popular seminars in a format that blends the best of the Internet with the best of in-residence learning. These seminars will develop the same core competencies as our regular offerings of these programs--but participants will be in residence only one week instead of two, and will complete the rest of their learning on line.

Initially we will be offering "blended" versions of the Executive Development Seminar (e-EDS) and the Seminar for New Managers (e-SNM). To learn more about these exciting new programs, go to <http://www.leadership.opm.gov/wmdcnew.html>, or call the seminar director, Dr. Sue O'Donnell at 303-671-1010.

This format also enables OPM to offer you these seminars at FY 01 prices.

POC: CHARLES PEARRE, CECW-EIS, 202-761-4645

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FY02 PROSPECT COURSES

Listed below are PROSPECT courses available in FY02. If interested in enrolling in any of these courses, please discuss this with your supervisor and local training coordinator and have a DD Form 1556 completed and forwarded to the Registrar's Office of the USACE Professional Development Support Center (PDSC). Telephone: 256-895-7421/7425. Fax: 256-895-7469. Some courses are currently full; some still have spaces available. If a course is full, you may request to be put on a waiting list and you will be informed when a space becomes available. Additional information about these courses is available online at: <http://pdsc.usace.army.mil>.

CTL #	COURSE TITLE	LOCATION	START	END	TUITION
253	1391 PREPARATION	Arlington, TX	6/24/02	6/28/02	\$1,200
394	ADV STREAMBANK PROT	Vicksburg, MS	4/8/02	4/12/02	\$2,120
369	ADVANCED HEC-HMS	Davis, CA	4/15/02	4/19/02	\$1,660
67	ADVANCED HEC-RAS	Davis, CA	10/22/01	10/26/01	\$1,760
4	A-E CONTRACTING	Dallas Fort Worth, TX	12/3/01	12/7/01	\$670
4	A-E CONTRACTING	Pittsburgh, PA	3/18/02	3/22/02	\$670
4	A-E CONTRACTING	St. Louis, MO	4/22/02	4/26/02	\$670
4	A-E CONTRACTING	Albuquerque, NM	5/20/02	5/24/02	\$670
251	APPL OF ENGR GEOLOGY	Huntsville, AL	7/15/02	7/19/02	\$1,790
3	ARCH HARDWARE-QV	Sacramento, CA	6/10/02	6/14/02	\$1,500
178	BASIC HEC-HMS	Davis, CA	11/5/01	11/9/01	\$1,620

178	BASIC HEC-HMS	Davis, CA	6/3/02	6/7/02	\$1,620
342	CE CONTRACT LAW	San Francisco, CA	4/22/02	4/26/02	\$1,250
356	CERCLA/RCRA Process	Minneapolis, MN	6/11/02	6/14/02	\$910
356	CERCLA/RCRA Process	Denver, CO	7/16/02	7/19/02	\$910
443	CLEAN AIR ACT WORKSHOP	Cincinnati, OH	4/2/02	4/4/02	\$670
263	COASTAL ECOLOGY	Monterey, CA	2/25/02	3/1/02	\$2,640
263	COASTAL ECOLOGY	Monterey, CA	6/24/02	6/28/02	\$2,640
13	COASTAL ENGINEERING	Vicksburg, MS	1/29/02	2/7/02	\$2,420
11	COASTAL PLANNING	Duck, NC	4/22/02	4/26/02	\$2,180
21	CONCRETE I—QV	Vicksburg, MS	11/5/01	11/9/01	\$960
21	CONCRETE I—QV	Vicksburg, MS	2/4/02	2/8/02	\$960
21	CONCRETE I—QV	Vicksburg, MS	6/3/02	6/7/02	\$960
257	CONCRETE MAINT & REP	Vicksburg, MS	4/8/02	4/12/02	\$1,270
257	CONCRETE MAINT & REP	Vicksburg, MS	5/13/02	5/17/02	\$1,270
22	CONCRETE TECHNOLOGY	Vicksburg, MS	4/22/02	4/26/02	\$1,840
28	DAM SAFETY	Vicksburg, MS	3/18/02	3/21/02	\$1,580
28	DAM SAFETY	Vicksburg, MS	5/6/02	5/9/02	\$1,580
397	DIVING INSPECTOR	TBD	12/3/01	12/7/01	\$2,110
259	DIVING REFRESHER	Key West, FL	3/12/02	3/21/02	\$2,620
981	DPW BUDGET/JCA	Huntsville, AL	7/23/02	7/26/02	\$625
991	DPW JOC ADVANCED	Huntsville, AL	4/29/02	5/1/02	\$625
990	DPW JOC BASIC	Huntsville, AL	11/27/01	11/30/01	\$625
990	DPW JOC BASIC	Huntsville, AL	4/23/02	4/26/02	\$625
974	DPW PBSC	Huntsville, AL	6/10/02	6/14/02	\$610
999	DPW PROGRAM MANAGEMENT	Huntsville, AL	4/1/02	4/5/02	\$750
988	DPW PWBOC	Huntsville, AL	1/14/02	1/18/02	\$625
989	DPW PWMOC	Alexandria, VA	4/10/02	4/19/02	\$1,200
989	DPW PWMOC	Alexandria, VA	8/7/02	8/16/02	\$1,200
972	DPW QA	Huntsville, AL	2/25/02	3/1/02	\$610
985	DPW SUPPLY SQL	Huntsville, AL	3/19/02	3/22/02	\$650
983	DPW WORK ESTIMATING	Huntsville, AL	8/20/02	8/23/02	\$625
983	DPW WORK ESTIMATING	Huntsville, AL	8/26/02	8/29/02	\$625
980	DPW WORK RECEPTION	Huntsville, AL	6/11/02	6/13/02	\$600
81	DREDGE SAFETY	New Orleans	7/23/02	7/26/02	TBD
40	EARTHWORK—QV	Vicksburg, MS	1/28/02	2/1/02	\$1,200
40	EARTHWORK—QV	Vicksburg, MS	4/22/02	4/26/02	\$1,200
103	ECOLOGY FOR ENGINEERS	Seattle, WA	8/12/02	8/16/02	\$2,640
264	ECOSYS PLN/MGT ISSUES	Vicksburg, MS	7/22/02	7/26/02	\$1,570
280	ECOSYSTEM RESTORATION	Vicksburg, MS	4/15/02	4/19/02	\$1,610
280	ECOSYSTEM RESTORATION	Vicksburg, MS	5/20/02	5/24/02	\$1,610
90	ELEC EXTERIOR DESIGN	Las Vegas, NV	4/8/02	4/12/02	\$1,610
360	ELECT SECUR SYS DES	Huntsville, AL	5/13/02	5/17/02	\$1,070
374	ELECTRICAL DESIGN II	Huntsville, AL	3/11/02	3/15/02	\$1,580
42	ELECTRICAL—QV	Norfolk, VA	7/22/02	7/26/02	\$1,260
398	ENV REG PRAC APPL	Omaha, NE	4/22/02	4/26/02	\$1,120
395	ENV REMED TECH	Denver, CO	6/17/02	6/21/02	\$1,290
337	ENV REMED TECH-CONTAIN	Denver, CO	6/19/02	6/21/02	\$690
371	ENV REMED TECH-INSITU	Denver, CO	6/17/02	6/19/02	\$690
225	ENV SAMPLING	Denver, CO	6/11/02	6/14/02	\$1,390

350	ENVIRON RESTORATION OVIEW	Omaha, NE	5/7/02	5/9/02	\$820
16	FACILITATOR WORKSHOP	Huntsville, AL	3/4/02	3/7/02	\$630
236	FIELD SAFETY	St. Louis, MO	5/14/02	5/16/02	\$1,080
236	FIELD SAFETY	Nashville, TN	6/11/02	6/13/02	\$1,080
236	FIELD SAFETY	Atlanta, GA	7/16/02	7/18/02	\$1,080
33	FIRE EXT SYS DESIGN	Huntsville, AL	5/6/02	5/10/02	\$1,830
6	FIRE PROTECTION	Huntsville, AL	4/22/02	4/26/02	\$920
6	FIRE PROTECTION	Huntsville, AL	6/3/02	6/7/02	\$920
50	FLEX PAVE CONST—QV	Vicksburg, MS	10/15/01	10/19/01	\$1,280
50	FLEX PAVE CONST—QV	Vicksburg, MS	4/29/02	5/3/02	\$1,280
316	FLOOD DAMAGE - GIS	Davis, CA	1/14/02	1/18/02	\$1,810
272	FUND WETLANDS	Annapolis, MD	6/3/02	6/7/02	\$1,980
272	FUND WETLANDS	Olympia, WA	8/5/02	8/9/02	\$1,980
54	GENERAL CONST—QV	Denver, CO	2/25/02	3/1/02	\$740
219	GIS-HYDROLOGIC ENGR	Davis, CA	12/10/01	12/14/01	\$1,550
124	GROUNDWATER HYDRO	Davis, CA	8/19/02	8/23/02	\$1,930
141	HTRW CONST INSP	Fort Worth, TX	4/8/02	4/12/02	\$1,330
428	HTRW COST REIMB T.O.	Ft. Worth, TX	11/6/01	11/8/01	\$470
340	HVAC CTR SYS: DESIGN	Champaign, IL	3/25/02	3/29/02	\$1,140
68	HVAC SYS TA&B-QV	Phoenix, AZ	1/14/02	1/18/02	\$1,280
223	HW MANIFEST/DOT CERT	Dallas, TX	5/6/02	5/10/02	\$1,000
429	HW MANIFEST/DOT RECERT	San Diego, CA	2/5/02	2/6/02	\$390
429	HW MANIFEST/DOT RECERT	Dallas, TX	5/8/02	5/9/02	\$390
161	HYDRO ANAL FOR ECOSYSTEMS	Davis, CA	2/11/02	2/15/02	\$1,730
986	IFS FUNCTIONAL COURSE	Huntsville, AL	4/8/02	4/12/02	\$625
75	MASTER PLANNING	Denver, Colorado	2/11/02	2/15/02	\$850
74	MECHANICAL—QV	Kansas City, MO	5/20/02	5/24/02	\$850
78	NATIONAL ELEC CODE	Seattle, WA	8/5/02	8/9/02	\$790
399	ORD AND EXP RESPONSE	Huntsville, AL	8/12/02	8/15/02	\$520
85	PAVE DESIGN & CONST	Vicksburg, MS	2/26/02	3/7/02	\$1,960
400	PAVEMENT CONST—QV	Vicksburg, MS	1/23/02	2/1/02	\$1,830
115	PAVEMENT EVAL/REPAIR	Vicksburg, MS	4/2/02	4/11/02	\$1,880
260	PROJ MGT BUS PROCES-HTRW	Nashville, TN	4/29/02	5/3/02	\$1,310
984	PWIFS MGMT COURSE	Huntsville, AL	2/5/02	2/8/02	\$625
978	QAE/PI	Huntsville, AL	7/15/02	7/19/02	\$625
441	RAD WASTE TRANSPORT	Dallas, TX	5/7/02	5/10/02	\$940
286	REAL PROP MGT	Western Region	7/22/02	7/25/02	\$700
286	REAL PROP MGT	Huntsville, AL	3/18/02	3/22/02	\$700
98	RESERVOIR MODELING C-RES	Davis, CA	6/17/02	6/21/02	\$1,830
281	RIPARIAN ECOL/MGT	Phoenix, AZ	5/6/02	5/10/02	\$2,170
281	RIPARIAN ECOL/MGT	Louisville, KY	6/17/02	6/21/02	\$2,170
430	RW MANIFES/DOT RECERT	San Diego, CA	2/5/02	2/6/02	\$430
430	RW MANIFES/DOT RECERT	Dallas, TX	5/8/02	5/9/02	\$430
970	SA/DBA TRAINING COURSE	Huntsville, AL	3/5/02	3/8/02	\$650
248	SHEAR STRENGTH	Huntsville, AL	5/21/02	5/23/02	\$1,270
113	SOIL STRUC INTERACT	Vicksburg, MS	3/25/02	3/29/02	\$2,250
214	SPACE UTILIZATION	Huntsville, AL	4/1/02	4/5/02	\$850
975	SQL FOR IFS	Huntsville, AL	2/11/02	2/14/02	\$625
58	STAT METHODS WATER	Davis, CA	7/15/02	7/19/02	\$2,040

285	STREAMBANK EROS/PROT	Vicksburg, MS	10/15/01	10/19/01	\$1,920
285	STREAMBANK EROS/PROT	Vicksburg, MS	3/25/02	3/29/02	\$1,920
339	SURVEYING II	Huntsville, AL	7/9/02	7/12/02	\$1,130
296	SURVEYING III	Huntsville, AL	4/29/02	5/3/02	\$1,890
228	TERC TASK ORDER ADM	Omaha, NE	4/2/02	4/5/02	\$500
188	UNSTEADY FLOW HEC-RAS	Davis, CA	3/11/02	3/15/02	\$1,790
164	WATER & WATERSHED	Davis, CA	5/13/02	5/17/02	\$1,700
152	WATER DATA MGT/HEC-DSS	Davis, CA	9/16/02	9/20/02	\$1,790
162	WELDING DESIGN	Troy, OH	4/29/02	5/3/02	\$1,430
239	WET MIT BANK DEV/MGT	Orlando, FL	6/24/02	6/28/02	\$1,910
275	WETL CONST WQ IMP	Oakland, CA	7/8/02	7/12/02	\$2,260
273	WETLANDS EVAL	Mobile, AL	3/25/02	3/29/02	\$2,200
35	WORKING DIVER	TBD	9/3/02	9/26/02	\$3,270

POC: JOHN BUCKLEY, CEHR-P-TO, 256-895-7431

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Open Discussion and Comments

No items for discussion were received this month.

(Editors' note: If you want to share your thoughts with our readers regarding a subject of general interest, send an email to the E&C News editor at charles.pearre@usace.army.mil. A synopsis of your comments will be published next time).

Editors' Notes

FUTURE THEMES

For individuals wishing to submit articles for future issues of the Engineering and Construction News, the themes for the next three issues are shown below:

October 2001	TBD
November 2001	TBD
December 2001	TBD

The Districts of the Month will be as follows:

October 2001	Nashville District
November 2001	St. Paul District
December 2001	Baltimore District

POC: CHARLES PEARRE, CECW-EIS, 202-761-4645

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