Infrastructure Projects Update:

Report from the U.S. Army Corps of Engineers/Jacksonville District Office

Interview by Charley Williams, Geotechnical and Environmental Consultants, Inc.

What is the mission of the Jacksonville District of the U.S. Army Corps of Engineers?

Jacksonville District is the second largest civil works district in the nation. We cover Florida, Puerto Rico and the U.S. Virgin Islands. Our missions include five broad areas: water resources, environment, infrastructure, homeland security and warfighting. Our district contributes to all of these mission areas through a wide variety of programs and projects to: provide navigable harbors and channels, ensure flood protection, restore ecosystems, protect wetlands, stabilize our shorelines, provide recreational opportunities, respond in emergency situations, and provide technical services to other local, state, federal and international agencies.

We operate and maintain 60 navigation projects, 14 deep water ports, 6 navigation locks, 1,500 miles of shoreline and 900 miles of inland waterways. Nine of our ports (Tampa, Port Everglades, Jacksonville, San Juan, Miami, Port Manatee, Canaveral, Palm Beach and Ponce Harbor) are in the top 100 in the United States.

Barry Vorse, Public Affairs Specialist, Jacksonville District Office

The Jacksonville District includes responsibilities for certain infrastructure elements within the District. We are hearing a lot about our aging infrastructure. What do you see as the major challenges in the next five years regarding maintenance, refurbishment, and replacement of District infrastructure?

I would divide that answer into three categories. First is public health and safety. The Jacksonville District has 1,300 miles of levees under its control and most of them were built from the 1930s to the 1960s so with them come problems inherent to the construction of that time period. We also have Herbert Hoover Dike and shore protection beach projects that run the length of the state.

No. 2 would be economics. We are responsible for dredging 15 deep water ports in Florida and Puerto Rico. We need to keep these ports dredged to keep up with global growth. We also have supervision of inland waterways and the Lake Okeechobee Waterway. All of these have commercial concerns plying their waters and their commerce is growing as well.

No. 3 is aging infrastructure. I guess you could add Formerly Used Defense Sites into this as a concern.

Our overall biggest challenge in the next five years will be to communicate to and inform the administration and Congress of the critical needs of our state and in the Antilles as well.

Colonel Paul Gross Kruger, District Commander

Lake Okeechobee is the second largest freshwater lake that lies entirely within the United States. The Herbert Hoover Dike is an earthen system, built in the 1930s, that encircles the lake for 140 miles. What is the problem with the dike?

In the 1930s, the corps built southern and northern levees. After the 1947 hurricane, Congress authorized the Corps to completely encircle the lake, which was completed in the 1960s. The earthen dike is prone to water seepage and piping (internal erosion), causing stability concerns.

Currently, with the impacts of a two-year-long drought, Lake Okeechobee is approximately 9.54 feet. The Corps' goal is to manage the lake between 12.5 and 15.5 feet throughout the year—a safe range for the Herbert Hoover Dike to best balance and meet the needs for all the water resource purposes that Lake Okeechobee serves.

The problem is that when water levels in Lake Okeechobee get too high, water begins to seep faster through the dike—sometimes eroding from inside or under the dike. The movement of soil or erosion is known as piping. Piping creates a continuous, open path through which water moves even more soil and could form large cavities in the dike. These cavities weaken the dike, creating the potential for a breach. Water flows into Lake Okeechobee from a vast watershed that includes the Kissimmee River. During hurricane season, rain causes water levels to rise quickly because it enters the lake six times faster than it can be released. One foot of rainwater in the basin equals a four-foot rise in the lake. The lake averages between 13 and 15 feet (NGVD of 1929). Since Completion of the Herbert Hoover Dike in 1968, the highest recorded average daily Lake level of Lake Okeechobee has been 18.83 feet on October 25, 1995.

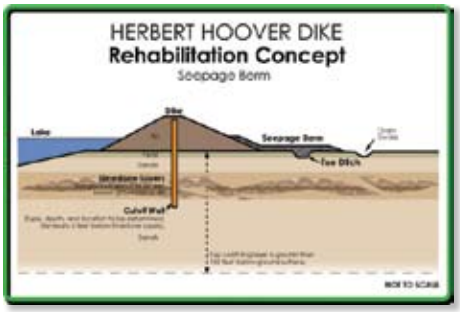
Project Manager Mike Rogalski

The ongoing work on the Herbert Hoover Dike (HDD) required implementation of innovative technical and contracting methods such as "trench cutting, and deep remixing cutoff wall construction" and multiple award contracting. How are the innovations working out on this project

and does the Corps have plans to share the challenges and/or success of these and other innovations through future workshops or seminars?

The technology used in constructing the HHD cutoff wall passed a key test recently, allowing work to move forward in May. Also in May, the Corps awarded a second cutoff wall order to a different contractor, and anticipates awarding a third order in June and a fourth in August. Multiple award contracting and a plan that ensures dedicated resources, helps the Corps maintain momentum on dike rehabilitation. The HHD technical review team is a dedicated resource composed of senior engineers Corps-wide that exchange information and learn from one another. The Corps' Dam Safety and Engineering Division vertical teams also continuously share challenges and lessons learned. As an example, the Jacksonville District gave an HHD presentation at the National Dam Safety Conference in March 2008, and in April 2008, our district hosted the Corps Dam Safety Steering Committee, providing the group with an HHD presentation and on-site tour.

Project Manager Mike Rogalski



The HHD Rehabilitation also highlighted the use of national and international experts in the design and implementation of the work. How do you see the role of engineers in private practice in helping the District meet their engineering goals?

The Corps serves the nation best when we explore all options. Global expertise and resources help the Corps maintain a cutting edge in engineering and construction industry technologies. The Corps has been doing this for many years. In the 1960s, the Corps collaborated with engineers and scientists in England, the Netherlands, Germany and France, to develop large-scale flood risk-management

Project Manager Mike Rogalski

Have the House and Senate appropriations committees approved funding at a level to keep the Comprehensive Everglades Restoration Act (CERP) on the original funding track/schedule?

The Congress has not been funding the Corps at their capability level when it comes to carrying out the studies and projects in the CERP. More importantly however, we should recognize that the efforts to date by the Corps and the State have not necessarily been on the projects that would provide the most benefit. A GAO study published last year found that there are no criteria to ensure that CERP projects are being implemented in a sequence that would achieve environmental benefits as early as possible. Because funding is limited, we need to prioritize the CERP effort and work initially on those areas that are going to do the most good early on.

I am pleased that the Corps is working with the interagency task force, which includes the State, to develop a re-sequencing plan that will focus future efforts on the projects that are most beneficial. I understand they will have this re-sequencing plan by September 2008.

U.S. Representative John L. Mica, Republican Leader, Committee on Transportation and Infrastructure

What is the current status of the restoration effort?

In Water Resources Development Act (WRDA) 2007, we authorized the first major projects under CERP. We should begin to see construction on at least one of these projects soon. It is important that projects that can produce the greatest actual restoration be moved to priority status. With a re-sequencing of the projects, we should see the most beneficial projects get the priority they deserve.

The President has recommended $185 million in his budget for FY 2009. That is $54 million more than the Congress actually provided in appropriations last year.

The Mod Waters project may finally be reaching a resolution. A bridge plan has been agreed to by most of the stakeholders. Mod Waters must be completed before other critical projects can be built.

The restoration of the Kissimmee River is moving ahead very well with significant results in environment restoration.

U.S. Representative John L. Mica, Republican Leader, Committee on Transportation and Infrastructure

Another of the District's major projects is the Restoration of the Kissimmee River. Can you share with us the progress to date on this project and the challenges that still must be met prior to its completion?

The Kissimmee River Restoration (KRR) project is intended to restore over 40 square miles of river and floodplain ecosystem including 43 miles of meandering river channel and 27,000 acres of wetlands. Restoration efforts will re-establish an environment conducive to the fauna and flora that existed there prior to the channeling efforts in the 1960s. The following are the Corps's goals and objectives to restore the ecological integrity of the damaged ecosystem:

- re-establish historic hydrologic conditions
- recreate the historical river/floodplain connectivity
- recreate the historic mosaic of wetland plant communities
- restore the historic biological diversity and functionality

Accomplished to Date: All lands needed to complete KRR have been acquired—a total of 102,061 acres. Phase I construction was completed in 2001, and continuous water flow has been reestablished in the project area. When restoration is complete in 2011, more than 40 square miles of river-floodplain ecosystem will be restored including almost 20,000 acres of wetlands and 46 miles of historic river channel.

Barry Vorse, Public Affairs Specialist, Jacksonville District Office

The USACE is the lead agency for dealing with complex and potentially dangerous site scenarios such as the Pine Castle Jeep Bombing Range in Orlando. Do you anticipate that the Corps will be asked to address other FUDS (Formerly Used Defense Sites) in Florida? How is funding for this program structured?

Jacksonville District currently has 25 FUDS sites in Florida at some stage

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of investigation. As Florida grows, so will the number of FUDS sites. The Jacksonville District serves in a primary project manager role for all DERP FUDS projects in Florida. We often work with other districts, such as Huntsville and St. Louis, if certain projects call for their particular areas of expertise.

Project Manager Charlie Fales

What is the protocol for investigating such sites with the Corps as lead agency? Specifically from a local government perspective, what is the criteria for expanding investigations beyond the initial defined FUDS boundary?

If contamination is found within a FUDS site boundary and it leads off the FUDS sight, we are authorized to follow it wherever it leads.

Project Manager Charlie Fales

The Corp is charged with maintaining the nation's ports. Should a hurricane require that emergency dredging operations be called into play, would this divert funding from other Florida-based projects?

That's not how it works. After the 2004 series of hurricanes, just such a scenario took place. Congress passed emergency funding to finance 17 beach renourishment projects in the state of Florida, which had been damaged by the series of hurricanes. That 2005 authorization of $154.5 million in funding for shore protection covered 70 miles of coastline. These projects have held up well since their completion.

Barry Vorse, Public Affairs Specialist, Jacksonville District Office

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About the Author:

Charley Williams is Manager for Business Development, Geotechnical and Environmental Consultants, (GEC), Orlando. Recent project awards for GEC include geotechnical engineering for the Burnham Institute at Lake Nona, expansion of Airsides 1 and 3 at Orlando International Airport and environmental assessments for Central Florida Commuter Rail.

Photograph on page 22 is the Kissimmee River Restoration in progress. At right is the straight channel dug in the 1960s. To the left is the meandering oxbows the river contained prior to the channel dredging. Fish species have returned in abundance to the natuiral waterways which had been filled in. The straight channel has now been filled in wherever possible.

New Members

5/1/08 through 5/31/08

Big Bend

Catherine E. Breland, EI; PEPP
CDM
Sponsor: Anna M. Padilla, EI

Todd J. Mechler, AS; FPEG
State of Florida/DMS
Sponsor: Mark R. Fuller, PE

Michelle Roddenberry, PhD, PE; FEE
FAMU-FSU College of Engineering
Sponsor: Victor H. Herrera, EI

Broward

Hamid Hosseini, PE; PEPP
GBF Engineering Inc.
Sponsor: James F. Thompson, PE

Samira Shalan, EI; FPEG
City of Tamarac
Sponsor: John E. Doherty, PE

Calusa

Jordan C. Cook, EI; PEPP
Johnson Engineering Inc.
Sponsor: Dana Hume, PE

Todd Turrell, PE; PEPP
Turrell, Hall & Associates

Jonathan P. Wadas, EI; PEPP
Johnson Engineering Inc.
Sponsor: Dana Hume, PE

Central Florida

Sailaja Alath, PE; PEPP
BASE Consultants, PA
Sponsor: John C. Nagle, IV, PE

Danni Hirsch, AS; PEPP
Gattling Jackson Kercher Anglin
Sponsor: Kok Wan Mah, PE

Rhet L. Schmidt, PE; FPEI
Moffatt & Nichol

Timothy Viox, PE; PEPP
Sea World

Emerald Coast

Thomas J. Moore, PE; FECON
Moore Engineering
Sponsor: Danielle Pitt Slaterpryce, PE

Gulf Coast

Nicholi A. Arnio, PE; PEPP
HDR Engineering Inc.
Sponsor: Robert S. Kosoy, PE

Richard M. Dodd, PE; PEPP
GAC Contractors Inc.
Sponsor: Benjamin C. Faust, PE

Yvonne Paguada, PE; PEPP
CPH Engineers Inc.
Sponsor: Kenneth A. Vander Jagt, PE

Miami

Casimiro Diaz, PE; PEPP
JALRW Engineering Group

Sara J. Duffoo, PE; PEPP
Target Engineering Group Inc.
Sponsor: Ramzi B. Asfour, PE

Northeast Florida

Edwin R. DuPont, PE; FECON

Palm Beach

Kenneth W. Jackson, PE; PEPP
Kimley-Horn and Associates Inc.
Sponsor: Charles L. Geer, PE

Jason Lee, PE; PEPP
Kimley-Horn and Associates Inc.
Sponsor: Kevin Schanen, PE

Pinellas

Joseph P. Fullone, PE; PEPP
Fullone Structural Group
Sponsor: Charles S. Warrington, Jr., PE

Ridge

Diane Miller, PE; FPEG
Polk County
Sponsor: Surendra Gandhi, PE

Monthly Membership Report

CHAPTER	MEMBERS AS OF 7/31/07	NEW GOAL	NEW 07-08	NEW % ACHIEVED	MEMBERS AS OF 5/31/08
Big Bend	224	22	19	86.4	224
Broward	285	28	18	64.3	270
Calusa	307	31	24	77.4	312
Central Florida	720	72	43	59.7	692
Daytona Beach	90	9	4	44.4	89
Emerald Coast	52	5	9	180.0	57
Forest	74	7	5	71.4	77
Gulf Coast*	59	6	13	216.7	67
Indian River	90	9	3	33.3	85
Miami	369	37	33	89.2	351
Myakka	213	21	12	57.1	205
Nature Coast	33	3	0	0	30
North Central Florida	98	10	4	40.0	95
Northeast Florida	359	36	15	41.7	343
Northwest Florida	108	11	9	81.8	104
Palm Beach	432	43	31	72.1	424
Pinellas	256	26	14	53.8	246
Ridge	86	9	6	66.7	86
Tampa*	400	40	34	85.0	396
Treasure Coast*	156	16	19	118.7	151
Out-of-State	54		5		55
TOTAL	4,465	441	322	73.0	4,365
Previous Year	4,229	422	491	116.3	4,387

*Indicates best recruitment within category

FLORIDA ENGINEERING STORY

In 1959, President Thomas L. Bransford, PE initiated a new idea for FES. On May 16, he invited all chapter presidents to a meeting in Orlando to explain and discuss a wide range of society and chapter activities. Ten presidents from the ten 12 chapters attended. He encouraged the holding os some type of similar meeting annually, and in 1962 the first Chapter Officers Conference was held in St. Petersburg. This meeting has become a family affair ever since, call today the FES Leadership Conference.

St. Pete was the location of the first Chapter Officers Conference (aka FES Leadership Conference). The city during that time was called the city of Green Benches, a reference to its multitudes of seemingly eternal resting places for its many seniors.
Photo courtesy of stpete.org.

FES Historian Donald W. Ditzenberger, PE provides facts about the history of the Florida Engineering Society. For the complete history please visit: www.fleng.org and click on "Florida Engineering Story."