US Army Corps of Engineers®
Little Rock District

Project Update

November 2008

Rain, Rain Go Away:

Spring floods, summer hurricanes leave mark on infrastructure, put District to the test

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Norfork Dam Spillway

Rain, Rain Go Away

Multiple rounds of spring floods and summer hurricanes swept through Missouri and Arkansas this year. District projects and flood fighters performed admirably and prevented untold additional flood losses and human misery. But the dams, navigation channels, parks and other district infrastructure took their licks, leaving officials uncertain when or if enough funds will be available to restore all facilities to service. Meanwhile, efforts continue to evacuate all the floodwater stored in district reservoirs, many of which were filled to record levels during the repeated storms.....**Page 3**

Dewatered Lock Chamber

Top 25 Funding Priorities

For years, district officials have cautioned that aging infrastructure requires ever-increasing attention to remain operational. Funding has not kept up with maintenance and repair needs. Factor in the rain and storms this year that caused additional damage to project infrastructure, and several components are at a critical maintenance state with an increasing risk of failure. At the same time, these officials recognize our nation has many needs that compete for limited dollars. Therefore, they identified our top 25 funding priorities so they can focus on the greatest needs first.....**Page 5**

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Little Rock District Projects

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Project Update

Project Upate highlights top Little Rock District issues in Missouri and Arkansas. If you have questions, contact Randy Hathaway, Little Rock District Deputy District Engineer for Project Management, at (501)324-5053. For more information, visit out web site at www.swl.usace.army.mil.

Little Rock mopping up flood fight arena

With the worst hopefully behind them, Little Rock District flood fighters are cleaning up and repairing the arena. While team members are doing what they can, it is uncertain whether enough funds will be available to restore all facilities to service.

The first round of floods struck in March. The second round hit in April. Wet weather continued sporadically. Then hurricanes Gustav and Ike threw the district a couple more punches, creating still more debris and damage to district facilities.

Deputy of Operations Andrea Lewis said damage to Little Rock District facilities is estimated at more than $50 million. This includes bank stabilization, repairs to navigation channels, cleanup and repair of parks, and other flood-related damage.

An emergency supplemental bill was signed by the president earlier this year, though only about $16 million was slated for Little Rock. Lewis attributed this to the recurring floods.

"We've sent additional requests for consideration under another emergency supplemental bill," Lewis said.

The district is trying to get back to business as usual, though the Arkansas River continues to intermittently flow faster than customary and White River lakes remain higher than normal.

Civil Engineer Technician Russell Cooper (in orange), Park Ranger Jared Trammell (with log), and Natural Resources Specialists Michael Hurley (back to camera) and Rick Hightower clean up debris after the flooding recedes at Hickory Creek Park on Beaver Lake. Photo courtesy of Beaver Project Office.

Natural Resources Specialist Rick Hightower cleans up tree limbs and other debris from Hickory Creek Park on Little Rock District's Beaver Lake. Photo courtesy of Beaver Project Office.

For now, the district's focus is assisting others with repairs to their damaged levees, dredging silted navigation channels and cleaning up parks as they surface from flood waters. Several district employees have also deployed to the Gulf coast to assist recovery operations there in the wake of the devastating hurricanes. Some employees are still working levees here in the district. During the flood, personnel spent long hours assisting communities and levee boards along the Black and White Rivers. Now efforts have shifted to after-action inspections and repairs.

Little Rock is also trying to repair damage Mother Nature did along the 308 miles of Arkansas River navigation channel entrusted to the district.

"There was a lot of silting in the channels," Chief of Navigation Branch Glenn Proffitt said. "We couldn't dredge or

clam while the flows were so high, but when the flows started to drop, the dredge was notified to mobilize July 15."

Before the water began to recede, more than 60 percent of the district's park facilities were flooded. Without sufficient funds, portions of several parks may not be repaired in time to open for the 2009 recreation season. However, district officials are working to return as many facilities as possible to service by spring. While there was much obvious damage to flooded park roads, some damage is revealed more slowly as paved surfaces continue to break down. Many swim beaches and boat ramps are still unusable. Timber is slowly dying along the shorelines.

"We still have several areas that need work. We've been working on things such as removing debris, replacing signs, lantern hangers and gravel screening, replacing or repairing picnic tables and electrical pedestals and adding gravel to roadways," Park Ranger Joseph Harper of Greers Ferry Lake said.

Some help is being contracted out as funds become available, especially for things like electrical repairs and large debris removal. Volunteers helped a great deal in park cleanups. Meanwhile, at Beaver Lake six inmates from Benton County Jail cut, hauled and piled tons of driftwood. They also cleaned trash from the shoreline and campsites.

The erosion at this camp site in a Blue Mountain Lake park surfaced as flood waters receded. This type of damage will have to be repaired when funds become available. Photo courtesy of Blue Mountain Project Office.

Local volunteers clean up flood debris at Viola Campground at Table Rock Lake. Photo courtesy of Table Rock Project Office.

At most lakes, swim beach restrooms were flooded causing concern in surrounding communities about the safety of the water. The district has tested the water in all of the lakes, and it is safe for swimming.

Ongoing communication with the public has been important. District officials and field personnel have met repeatedly with local, state and federal officials, public groups and the media.

"We've kept them informed about flooding concerns and warnings. These meetings also explained the flood reduction system, its process and why we do what we do," Table Rock Park Ranger Larry Hurley said.

During this event, Little Rock's people supported their communities and other districts with flood fighting in many different capacities. They continue to do so today.

Top 25 District Funding Priorities

For years, Little Rock District has cautioned that its aging infrastructure requires ever-increasing attention to remain operational. Funding has not kept up with maintenance and repair needs. Factor in the rain and storms this year that caused additional damage to project infrastructure, and several components are at a critical maintenance state with an increasing risk of failure.

We define critical maintenance as maintenance that if not performed could result in a greater than 50 percent chance of failure of a critical component. Repair or rehabilitation of the component is required to maintain basic project operation within the next 5 years.

At the same time, district officials recognize our nation has many needs that compete for a finite number of dollars. Therefore, we have identified our top 25 funding priorities so we can focus on our greatest needs first.

To do this, we defined the criticality of each maintenance item across all our business lines. We considered dam safety, levee safety, bridge safety, security, economic impacts, and return on investment. We have estimated the cost of each item and are devising plans to "buy down risk" as funds become available.

Murray L&D Tainter Gate

1. Repair Bridge Superstructure -- Bull Shoals Dam

Bridge and Dam safety issue. In fact it is the number two dam safety priority in the Corps' Southwester Division. The highway bridge suffers large areas of accelerated corrosion on its highway support superstructure and de-lamination of cross beams. There is a risk of failure that could lead to loss of life and property, environmental damage and economic loss. If not repaired, engineers will de-rate bridge capacity, causing impact to emergency, school, commercial and public traffic. Repair Cost = $6,500,000

2. Major Rehab Report/Repair Voids -- Hardin L&D

Deterioration in concrete structure joints has allowed seepage beneath the dam that has carried foundation sand and formed a void. If not repaired, excessive dam deflection will gradually develop, leading to gate jamming or cracking of concrete and loss of full spillway discharge capability. This could eventually cause the dam to become unstable and cause portions of the structure to collapse. Repair Cost = Unknown until an on-going investigation is complete.

Bull Shoals Dam Bridge

3. Rehab Tainter Gates -- Murray L&D

The gates were last painted in 1984. Paint is chipped, missing and thinning. Metal, welds and structural members are corroded, cracked or broken. If repairs are not accomplished, corrosion will increase, necessitating the replacement of members. Continued neglect will lead to gate failure. Repair Cost = $7,800,000

4. Repair Defective Welds/Seal Bridge Deck -- Beaver Dam

Bridge Safety Issue. The bridge across Beaver Dam was designed to have full penetration welds, though recent ultrasonic inspection found numerous fatigue cracks and revealed the bridge was not constructed with full penetration welds. It may not be able to safely carry design loads. If not repaired, the bridge could be de-rated, which would restrict access and our ability to maintain and operate the flood reduction mission. Repair Cost = $225,000

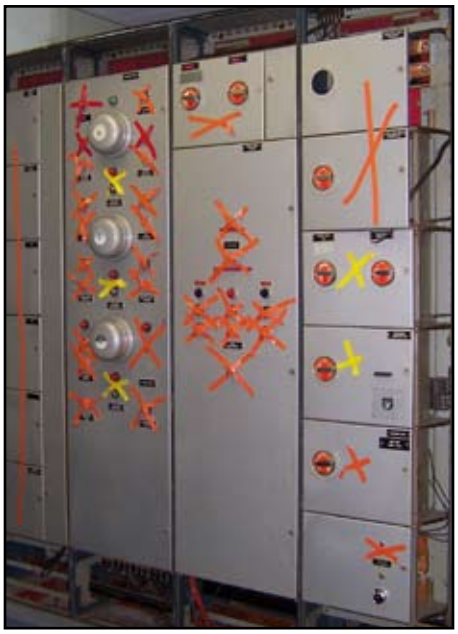
5. Repair & Stabilize Dam Embankment and Sinkholes -- Millwood Dam

Possible Dam Safety Issue. Protection on the toe of the upstream embankment has failed for 2.5 miles. Exposure to wave action will cause further slides and possible eventual catastrophic failure, loss of life, property, loss of flood reduction management ability, environment damage

Millwood Dam Embankment

and economic loss. Repair consists of a 2-3 foot thick quarry riprap stone protection blanket at a 1 on 3 slope. Downstream sinkholes are caused by dispersive soils. Repair Cost = $2,682,000

6. Replace Electrical Control Panels & Wiring -- Locks 4, 5, & 6
Failing electrical breakers and switches pose electrocution and arc flash explosion hazards to workers and a fire hazard to the facility. If not replaced, electrical component failure, fire, or arc flash explosion will result in frequent lock outages up to 120 days and navigation system closure. Repair Cost = $1,113,000



Lock & Dam Control Panel

7. Replace Electrical Control Panels and Wiring -- Locks 7, 8, & 13
Failing electrical breakers and switches pose electrocution and arc flash explosion hazards to hired labor and fire hazards to facilities. If not replaced, electrical component failure, fire, or arc flash explosion will result in frequent lock outages of up to 120 days and navigation system closure. Repair Cost = $1,350,000

8. Repair Arkansas -White Cutoff Structures
Structures are consistently overtopped during high-water events. Because of this, a cutoff path has developed slides, washout rock, failure of geotubes, and damage to the access road and bridge. Failure to repair will result in breaching of Ark-White Cutoff Structures. An uncontrolled cutoff will stop navigation. Repair Cost = $10,000,000

Damaged Arkansas - White Cutoff Structure

9. Replace 15 Kilovolt Transformer Feeders -- Dardanelle Powerhouse
The existing oil insulated 15 Kilovolt feeders are about 45 years old (past rated life). The cables are aging rapidly. Outer jackets have started to crack. If a single failure occurs all four units are subject to failure because all are on the same cable tray. Repair Cost = $2,208,000

10. Shoreline Management/Master Plan Update -- Table Rock Lake
Unbalanced development pressures on the lake resources with a resultant potential degradation of water quality. The Corps needs to manage shoreline development to match stakeholders' interests. If not updated soon, degradation of the shoreline and water quality is likely. Plan Update Cost = $2,600,000

11. Replace Lock Electrical Control Panels & Wiring -- Ozark L&D
Failing electrical breakers and switches pose an electrocution and arc flash explosion hazard to hired labor and fire hazard to the facility. If not replaced, electrical component failure, fire, or arc flash explosion will result in frequent lock outages of up to 120 days and navigation system closure. Repair Cost = $500,000

12. Repair Undermined Retaining Wall and Outlet Structure -- Norfork Dam
The risk of failure involves potential flooding, loss of life, environmental damage, lost efficiency and high future repair costs. Recent historic flooding eroded the stilling basin right training wall and removed the downstream spillway revetment, causing erosion to the dam embankment and hydropower switchyard and damage to the concrete monolith. Flows from 2008's flood caused severe erosion and left the outlet channel without a large section of protective revetment. Repair Cost = $700,000

13. Repair Undermined Retaining Wall and Outlet Structure -- Beaver Dam
The risk of failure involves potential flooding, loss of life, environmental damage, lost efficiency and high future repair

Beaver Dam Retaining Wall

costs. Recent historic flooding eroded the stilling basin right training wall and removed the downstream spillway revetment causing erosion to the dam embankment and hydropower switchyard and damage to concrete monolith. Flows from 2008's flood caused severe erosion and left the outlet channel without a large section of protective revetment. Repair Cost = $500,000.

14. Repair Alkali Silica Reaction - Cracked Spillway Piers -- David D. Terry L&D
Dam Safety Issue. Nine additional piers have been identified as having cracking that extends through the piers so that only the reinforcing steel is maintaining structural integrity. Reinforcing steel continues to degrade. If not repaired, engineers estimate a 10-15 percent chance of pier failure, if struck by a barge. Repair Cost = $6,000,000

David D. Terry L&D Cracks

15. Rehab Station Service, Install 13 Kilovolt Station Service transformer -- Table Rock Powerhouse
Risk is loss of power that could result in the main unit being unavailable and power plant flooding. Station Service Unit governors are 50 years old and have reached their life expectancy. Problems are beginning to occur that will require individually fabricated replacement parts. Required extended outages are frequent. A back-up power source will be necessary to prevent loss of station service. Repair Cost = $750,000

16. Fabricate Trash Racks and Rehab Howell Bunger Valves -- Nimrod Dam
Dam Safety Issue. If valves fail, the dam will be unable to pass controlled releases, creating the potential for failure that could cause loss of life and property, injury, environmental damage, and economic loss. If not repaired, gradually-developing excessive dam deflection will occur, leading to gate jamming or cracking of concrete to a point of instability and possible collapse of the gates or dam. Repair Cost = $1,030,000

17. Arc Flash Prevention and Protection -- Norfork Powerhouse
Safety Issue. Employees and equipment face potentially devastating Arc Flash hazards in the workplace. Repairs are needed to provide compliance with OSHA and NFPA regulations. This Arc Flash potential is not only at Norfork, but also at all district hydropower projects. Repair Cost = $600,000

18. Construct Tainter Gate Bulkhead Closure Structure -- Greers Ferry Dam
Tainter gate failure could result in loss of life, property, flood reduction management ability, environmental damage and economic loss. A Tainter Gate Bulkhead Closure Structure is required to allow dewatering of tainter gates to allow inspection, maintenance, repairs, etc. Lake level fluctuations allow dewatering and repairs only 5-10 percent of the time without a closure structure. Without this structure the condition of the tainter gates remains unknown much of the time. Repair Cost = $2,103,000

Overhead View of a Nimrod Dam Howell Bunger Valve

Dewatered Lock Chamber

19. Replace Dewatering Stop Logs -- McClellan-Kerr Arkansas River Navigation System

Dam Safety - If valves fail, the dam will be unable to pass controlled releases, creating the potential for loss of life and property, injury, environmental damage and economic loss. Stop logs are temporary closure structures used to dewater locks to perform maintenance. These are shared by all locks on the navigation system. The existing 40 year old stop logs are severely deteriorated, some to the point of being unreliable enough to protect workers. Repair Cost = $1,800,000

20. Construct Grout Curtain in Earthen Dike (No. 3) -- Beaver Dam

Dam Safety Issue. There is a potential of dike failure that could result in loss of life and property, environmental damage and economic loss. Failure exposes Rogers, Ark., to catastrophic consequences because 10-15 feet of the lake's contents could be loosed downstream. This would also result in a loss of power generation. Dike #3 has experienced seepage through the dolomitic foundation rock at normal pools for many years with increases at higher pool levels. A Screening Portfolio Risk Assessment rated Dike #3 as probably inadequate for normal and unusual loading. An SPRA Report recommends construction of a grout curtain. Repair Cost = $1,904,000.

Dike #3

21. Repair Lock Wall Scour Damage – David D. Terry L&D

A scour hole continues to deepen and could lead to failure that would result in an inability to maintain the upper chamber level within the lock and halt navigation. Turbulence over the dam's end sill causes scour. The scour hole at Terry is 4 feet in diameter and 6 feet deep. Total lock wall is 11 feet thick, but with the scour, little more than half the thickness remains. In addition, reinforcing steel has been exposed for years. Repair Cost for Terry = $225,000. A similar situation exists on all Arkansas River locks.

22. Dewey Short Visitor Center Rehabilitation -- Table Rock Dam

This pre-fabricated concrete panel building has shifted since it was built in the early 1960s. The project office shares the building with the Visitor Center, which is a main public attraction in Branson, Mo. The lake shoreline has eroded and will endanger the Project Office and Visitor Center. Rehabilitation and modernization are required. In addition, the facility's exhibits have deteriorated over the last 40 years to the point of being taken out of service. Repair Cost = $6,400,000.

23. Water Supply Reallocation Studies and Assessments

Environmental Assessments are needed for water reallocation studies at Greers Ferry, Bull Shoals, Norfork and Table Rock lakes to complete these resource actions and reports. Several communities, water works boards and alliances are anticipating the needed water resource. Associated Cost = $250,000.

24. Boundary Monumentation -- Bull Shoals Lake

The original boundary around Bull Shoals Lake has never been totally monumented. Seventy miles remain unmonumented. Cost for 10 miles = $140,000.

25. MOU with Arkansas Game & Fish Commission -- Nimrod Lake

The district hopes to complete a memorandum of understanding with the Arkansas Game and Fish Commission that would allow for proper maintenance and repair of an existing green-tree reservoir. Quality waterfowl and shoreline bird habitat is rapidly being lost. The existing partnership with AGFC will be expanded for improvements to efficiently and effectively operate the area under better stewardship. Two drainage structures would be replaced for draining after flooding. Cost = $300,000.

Nimrod Dam

Little Rock District Project Issues

Arkansas River Basin

Fourche Bayou Basin

The Army Corps of Engineers has prepared a limited reevaluation report for Little Rock's Fourche Bayou Basin as the decision document for the Assistant Secretary of the Army for Civil Works to determine whether to budget for the acquisition of 1,750 acres of bottomland hardwood forests and the construction of nature appreciation facilities. This work was included as part of the project authorization to construct a flood reduction project in Fourche Bayou that was the scene of repeated urban flooding and loss of life. The flood reduction portion of the project was constructed (without the acquisition of Fourche Bottoms, whose flood storage enables the project to function as designed) and transferred to the city of Little Rock. The bottomland acquisition purposes are environmental preservation, flood storage, and recreation. Public review of the draft reevaluation report and draft Supplemental Environmental Impact Statement was completed in November 2005. The report was sent to Southwestern Division for approval on March 23, 2007. The Final Supplemental EIS is being filed with EPA prior to the signing of the Record of Decision. With the signing of that document by higher headquarters and appropriation of funds, remaining work could proceed. Remaining work has an estimated cost of $4.9 million.

Fourche Bayou cypress trees

May Branch

May Branch flows through a culvert in its lowest three reaches in downtown Fort Smith, Ark., through the Fort Smith Levee at the P Street Pump Station into the Arkansas River. During heavy rains, May Branch flows over land and down streets, flooding industry, businesses, and residences. The last major flooding occurred March 18. Following the signing of the Chief of Engineer's final report in December 2006, Congress authorized the project in the Water Resources Development Act of 2007, dated November 8, 2007. The plan is an open channel with road and railroad crossings and a gated structure through the levee to provide for a 100-year level of protection at full federal participation in Reaches 1 through 4. Reaches 5 and 6 will be included at full city expense. Estimated project cost is $31.5 million with a $15.3 million federal cost and a $16.2 million non-federal cost. Preconstruction engineering and design began in fiscal 2008 with an estimated cost of $3.4 million.

Ozark Powerhouse turbine

Ozark Powerhouse Major Rehabilitation

The contract is ongoing for replacement of the five hydroelectric turbines at Ozark Powerhouse. The first unit has been removed, the water passage is being renovated, and the new turbine components are ready to install. The first unit will be back in service in fiscal 2009. This $78 million contract is the major portion of a project to address the continual maintenance problems experienced at Ozark. Rehabilitation is vital to the region's power customers and important in maintaining reliable electrical supplies. The power customers have contributed $20.1 million in past funding to sustain the Turbine Rehabilitation Contract, and the project is now being funded exclusively with appropriated funds.

Pine Mountain Dam

Pine Mountain Dam was originally authorized in 1965. The dam site is located at mile 35.7 on Lee Creek, 12 miles north of the city of Van Buren in Crawford County, Ark. The project, as designed in the 1980 General Design Memorandum, consists of a multipurpose reservoir (flood control, water supply, recreation, and fish and wildlife enhancement). The reservoir would control runoff from 168 square miles. Section 3012 (1) of the Water

Resources Development Act of 2007 modifies the original authorization of Pine Mountain Dam to add environmental restoration as a project purpose. The legislation directs the Secretary of the Army to finance the non-federal share of the project, including treatment and distributions components, over a 30-year period in accordance with section 103(k) of the Water Resources Development Act of 1986. Lee Creek is designated as an Extraordinary Resource Water, the strictest water quality designation in Arkansas. Previous water quality regulations did not allow construction of a dam on a stream with this designation. Water quality regulations were revised by the Arkansas Pollution Control and Ecology Commission in September 2007 and approved by the EPA in January 2008 to allow dams to be constructed on ERW streams, if, (1) the sole purpose for the funding and construction of the reservoir is to provide a domestic water supply; and (2) there are no feasible alternatives to constructing a reservoir in order to meet the domestic water needs of the citizens of the state of Arkansas. The project will be revised to eliminate all project purposes except water supply and environmental benefits for fisheries. The general re-evaluation report and environmental studies are to be funded at upfront federal financing, as directed in the fiscal 2008 Energy and Water Development Appropriations Act.

Little River Basin

Southwest Arkansas Study

Four Corps lakes (Millwood, Dierks, DeQueen, and Gillham) provide flood damage reduction and are the primary drinking water supplies for the region. Construction of the four projects resulted in the loss of 25,000 acres of bottomland wildlife habitat. About 9,000 acres of wetlands were lost because of reservoir operations. There is a significant opportunity to reallocate storage to increase flood reduction benefits and to restore fish and wildlife habitat. Water releases from the four lakes could aid navigation on the Red River. Navigation goes to Shreveport/Bossier City, La., and it is under study to be extended to Fulton, Ark. Important economic factors are agriculture, poultry and livestock operations. A feasibility study would evaluate flooding, irrigation, restoration of fish and wildlife habitat, water quality, and water releases for navigation and recreation. A Reconnaissance Study of the area, including four counties in Southwest Arkansas in the Red River and Little River basins, was completed in February 2004. In February 2008, Little River County, the Arkansas Natural Resources Commission, and the Arkansas Game and Fish Commission sent letters of intent to be the cost-sharing partners for a feasibility study. Discussions are underway with the potential sponsors to negotiate a Feasibility Cost Sharing Agreement for the feasibility phase. This project is not in the FY 2009 budget.

White River Basin

Beaver Dam Trout Production Facility, AR

The Beaver Dam trout production facility was authorized by Section 105 of Public Law 94-587, dated October 22, 1976. The facility is to be located just below Beaver Dam in Carroll County to annually produce 150,000 pounds of trout for environmental restoration. Design can be completed with receipt of appropriate funding. In 2001, the Assistant Secretary of the Army for Civil Works stated that the legislative intent for the trout production facility, including a source of water supply, would be at federal expense up to $6 million. Section 132 of the Energy and Water Development Appropriations Act of 2006 directed that losses to hydropower shall be offset by a reduction in federal hydropower costs as determined by Southwestern Power Administration based on the present value of the estimated replacement cost of the energy and capacity when the hatchery operation begins. On Nov. 27, 2007, the undersecretary determined the 21,972 acre-feet of conservation pool storage and the facility's operation, maintenance, repair, replacement, and rehabilitation is to be at no cost to the state of Arkansas. A supplement to the reallocation report to supply water for the project is being reformatted.

Beaver Dam

Bull Shoals Dam and Spillway Bridge

Bull Shoals Dam is at river mile 418.6 on the White River in the Ozark Mountains of north central Arkansas (near the Arkansas-Missouri border) about 10 miles northwest of Mountain Home, Ark. Arkansas Highway 178 crosses Bull Shoals Dam, and that bridge structure has continued to degrade. The level of degradation of the structure and operating equipment at Bull Shoals Dam are resulting in the inability to operate and function as designed. The Bull Shoals Dam and Spillway Bridge project is one of many listed on the Little Rock District's backlog of maintenance. In 2007, the construction contract to repair the spillway catwalk was awarded. This contract is scheduled to be completed in 2008. In September 2008, a construction contract was awarded to seal and rehabilitate the roadway and spillway bridge. Additional repairs are scheduled and will be implemented as funds are received in future years. These repairs will include blast cleaning and painting the bridge superstructure; painting tainter gates, machinery components and machinery support framing; and repair bridge girder and anchor plate grout pads.

Clearwater Dam Safety/Major Rehabilitation

In January 2003, a sinkhole developed in Clearwater Dam near Piedmont, Mo. Investigations determined seepage was the likely cause. A Major Rehabilitation Study concluded a cutoff wall is necessary to solve the problem. To reduce risk until the dam is rehabilitated, an interim risk reduction measures plan was implemented. For instance, seasonal pool deviation requests have been denied, and pool regulation has been modified. A Phase I contract for exploratory drilling and grouting was awarded in 2006. This drilling indicated the rock would require pretreatment grouting before construction of the cutoff wall, so a Phase Ib contract was awarded in August 2007. It is expected to be completed in early calendar year 2009. In September, the Phase II contract to build the cutoff wall was awarded to Bencor-Recon Joint Venture of Dallas for $93,252,500. On-site work will begin in early 2009 and is expected to be completed by late 2013, depending on future funding. The cutoff wall will extend the length of the earthen dam, about 4,300 feet, and it will be rooted about 40 feet into the foundation rock beneath. It will work in combination with the drilling and grouting currently underway to a depth of about 110 feet into the foundation rock. An external peer review panel completed its analysis of Clearwater Dam in July and confirmed the Corps' high risk rating of the dam. The panel recommended many actions already in progress. More detailed seismic analysis will be necessary in upcoming years because of the dam's proximity to the New Madrid Fault. These studies could result in additional remediation measures. Project costs have increased since inception because of unknown subsurface conditions, project requirements, and increased construction costs. Continued funding is critical to keep the project on track and ensure continued safety of the dam.

Springfield Flooding

Springfield, MO

The city of Springfield, Missouri, is creating an environmental beltway downtown on Jordan Creek that will provide flood damage reduction, ecosystem restoration, and redevelopment. Portions of the creek flow through covered conduits in the city center. During the flood of July 2000, $1.85 million in flood damages occurred, interrupting traffic on main city thoroughfares and rail lines. More recent repeated flooding occurred in the spring of 2008. A $3.5 million, 50-50 cost-shared feasibility study was started with the city in May 2004. The feasibility study should be complete in 2012. The flood risk reduction measures to be considered include structure relocations, detention ponds, open channels, and in congested areas, underground culverts. Ecosystem measures to consider include constructed wetlands, water quality sediment basins, and riparian enlargement. A public scoping meeting was held in October 2004 in Springfield to obtain public views and comments. The city is doing the hydrology and hydraulics as an in-kind task as part of its 50 percent share of study cost. On June 12, the Corps approved the "without project conditions H&H" findings.

White River Minimum Flows, AR and MO

The project was originally authorized by Section 374 of the Water Resources Development Act of 1999 and Section 304 of Water Resources Development Act of 2000. The authorizations modified operation of the White River Lakes to include storage for tailwater trout fisheries if the Assistant Secretary of the Army for Civil Works determined the work was technically sound, environmentally acceptable and economically justified. A reallocation study was completed in fiscal 2005, but did not recommend a project for construction. Section 132 of the fiscal 2006 Energy and Water Resources Development Appropriations Act (P.L. 109-103) authorizes implementation of plans BS-3 at Bull Shoals Lake and NF-7 at Norfork Lake, as described in the Reallocation Report, at full federal expense. This is in accordance with section 906(e) of the Water Resources Development Act of 1986. Section 132 also repealed the 1999 and 2000 project authorities, and resulted in a new project. The Supplemental Draft Environmental Impact Statement and Reallocation Report that documented reallocation scenarios NF-7 and BS-3 was listed in the Federal Register for public review and comment on Aug. 6. Public review will conclude Nov. 3. Implementation requires: 1. National Environmental Policy Act process completed with Record of Decision signed; 2. Congress must appropriate funds for construction phases and compensation of Empire Electric's (non-federal Federal Energy Regulatory Commission license 2221) one time buy-out; 3. Corps will coordinate with Arkansas Game & Fish Commission to execute a Project Participation Agreement for modification of lakeside facilities; 4. Arkansas Game & Fish Commission to execute the agreement; 5. Corps facility modifications must be designed and constructed; 6. storage at Bull Shoals and Norfork Lakes must be captured. In fiscal 2008, valves, siphons, and bulkhead were designed, and the feasibility process completed. Also, the "Light Detection and Ranging" contract was executed to obtain 2-foot contour intervals at Bull Shoals and Norfork lakes. Remaining work includes installation of the Norfork siphon system.

Continuing Authorities Program

Archey Fork Creek, Clinton, AR - Section 205

Archey Fork Creek in Clinton is 62 miles northwest of Little Rock. The city of Clinton, the sponsor, submitted a letter, dated May 2, 2002, to request assistance with their flooding and stream bank erosion problems along Archey Fork Creek. The Milestone Report was submitted to Southwestern Division Oct. 4, 2004. They recommended proceeding into the Detailed Project Report phase after the preliminary benefit/cost ratio was estimated at 2.6. In 2007, Little Rock District received money to continue the study after a long period with no funds. The milestone report

was updated with new engineering options and was found to have a preliminary benefit/cost ratio of 4.2. The project benefits would include flood damage reduction and bank stabilization. The Milestone Report has been approved by Southwestern Division. The city of Clinton would like to move forward with signing the Feasibility Cost Sharing Agreement.

Fourche Creek Sewer Main Bank Stabilization - Section 14

Fourche Creek flows through Little Rock, Arkansas, and drains into the Arkansas River. In February 2007 a streambank slope slide exposed a 42-inch sewer main that can convey 38 million gallons per day of sewage to the nearby Fourche Creek Wastewater Treatment Plant. Although the city repaired the immediate problem by driving about 400 linear feet of sheet piles, the city is concerned about the remaining half-mile reach where the sewer main is not protected. A feasibility study is underway to determine federal interest. This study should be completed by March 2009 and design initiated if appropriate funding is received.

Grassy Lake, Millwood Lake, AR - Section 1135

In fiscal 2004, Congress earmarked $100,000 ($76,000 allocated in fiscal 04-05 with $6,000 used for the Project Restoration Plan) to initiate a feasibility study for Grassy Lake, a pristine wetland just downstream of Millwood Dam along Yellow Creek in southwest Arkansas. This type work falls under Section 1135 of the Water Resources Development Act of 1986, as amended. In 2006, an additional $100,000 was appropriated ($99,000 allocated) for Grassy Lake. In 2007, $75,000 was allocated. In 2008, Grassy Lake was named, and $350,000 was allocated. Construction of the Little River Basin dams has reduced beneficial flooding to the area. This area is owned by hunting clubs that do not allow general public access and may not form a consensus on a project. Consideration by local stake holders is being given to having the state of Arkansas act as the sponsor with Arkansas Natural Resources Commission acting as the lead agency. A project management plan is being developed to support the feasibility study. The January 2007 revision in Corps guidance directs 100 percent federal financing of the study phase. Cost-sharing of the study phase will be captured and shared later as a project cost when the Project Cooperation Agreement is signed.

Grassy Lake

City of Greenwood - Section 205

The City of Greenwood, which is about 15 miles Southeast of Fort Smith, Ark., requested assistance to reduce flood damages by letter dated May 24, 2004. Three major streams flood the city during heavy, short duration rain events that cause major streets to be blocked and homes to be evacuated. The Milestone Report was completed in December 2005. Funds were received in 2007 to update the milestone report and sign the Project Partnership Agreement. The agreement is being negotiated with Greenwood.

High School Branch - Section 205

High School Branch is located in Neosho, Mo., about 17 miles south of Joplin. Frequent flooding damages occur to homes, businesses, and public facilities along the stream. Progress on the Feasibility Report has been constrained by lack of funding, but it is scheduled to be completed by March 2011 if the project is funded.

Little Black Ditch - Section 206

The Little Black River, over a period of years, has changed its course because of flooding events and created a connection to an existing drainage ditch. This ditch, which is called the "Little Black Ditch," discharges into Ditch #2 and then back into the Little Black River, about seven miles downstream. The Little Black River currently discharges a significant flow, perhaps a majority of flow, through the connection to the Little Black Ditch. Flow levels through the main river channel have reduced so that boat access within this seven-mile stretch is no longer possible. The drainage ditch does not have the capacity of the river, which results in flooding of agricultural land and public roads at levels below historic levels. Because of budget restraints, the Corps has not been able to fund Section 206 new starts for the past several years.

Short Mountain Creek, Paris, AR - Section 205

The city of Paris, Ark., asked Little Rock District to conduct a small flood damage reduction study. The study would be conducted under Section 205 of the Flood Control Act of 1948, as amended. The city of Paris is the potential non-federal sponsor. The first $100,000 to initiate a feasibility study is at full federal cost; any costs beyond this require a Feasibility Cost Sharing Agreement and will be cost shared 50/50. The project would be cost shared 35/65 (non-federal, federal) once a Project Partnership Agreement is signed.

Rock Creek at Boyle Park - Section 1135

The city of Little Rock, Arkansas Audubon Society and Arkansas Game and Fish Commission have asked Little Rock District

to initiate a Section 1135 ecosystem restoration study on Rock Creek that focuses on the Boyle Park area. The area of concern is located in and surrounding the vicinity of Boyle Park. The park is about 250 acres of largely unimproved woodland donated to the city by Dr. John F. Boyle in 1929. The area is a mix of residential and commercial activity. The project delivery team determined the study area should encompass the area between Kanis Park and 36th Street in Little Rock, which is roughly 2 miles. Over the course of the community's expansion, including the development of a rock levee in the Boyle Park vicinity by Little Rock District, fish and wildlife habitat on Rock Creek has suffered from neglect and has experienced extreme flooding with stream bank erosion. The city hopes to recondition the creek area into a restored fish and wildlife system. Restored habitat will provide benefits by increasing wildlife in the surrounding area, as well as increased habitat units. The Preliminary Restoration Plan was submitted to Southwestern Division on May 27, 2004. Approval was given in October 2004. However, because of budget restrictions, the project was placed on hold until further notice.

Southside Water, White River, Batesville, AR - Section 14

Southside Public Water Authority asked Little Rock District to conduct a streambank study on the south bank of the White River in the vicinity of Batesville. The public water authority maintains a 16-inch ductile raw water line extending parallel to the river for about 1,500 to 2,000 feet that carries water from the river intake facility to the water treatment plant. The high water events of March and April 2008 further intensified the deterioration of the streambank at this site. The study would be conducted under Section 14 of the Flood Control Act of 1946, as amended. The Southside Public Water Authority is the potential non-federal sponsor. The first $100,000 to initiate a feasibility study is full federal cost. Any costs beyond this require a Feasibility Cost Sharing Agreement and will be cost shared 50/50. The project would be cost shared 35/65 (non-federal, federal) once a Project Partnership Agreement is signed.

Assisting Southside Water

State HWY 58 at Guion, AR - Section 14

The Arkansas Highway and Transportation Department asked Little Rock District to conduct a streambank study on the right descending bank of the Highway 58 Bridge near Guion. The highway department is concerned the bridge abutment would be compromised if erosion continues. The high water events of March and April 2008 further intensified deterioration of the streambank at this site. The erosion reach is about 1,500 feet upstream of the bridge to at least 1,000 feet downstream. The study would be conducted under Section 14 of the Flood Control Act of 1946, as amended. The highway department is the potential non-federal sponsor. The first $100,000 to initiate a feasibility study is at full federal cost. Any costs beyond this require a Feasibility Cost Sharing Agreement and will be cost shared 50/50. The project would be cost shared 35/65 (non-federal, federal) once a Project Partnership Agreement is signed.

Planning Assistance to States

Howell Creek, West Plains, MO - Section 205

Howell Creek is in West Plains, just north of the Arkansas Border on Highway 63. The city of West Plains, the sponsor, submitted a letter dated Feb. 3, 2004, to request assistance with their flooding problem on Howell Creek. Little Rock District is working on developing the existing conditions for the hydrology of the area. The milestone report will be completed in early 2009 to determine if there is federal interest.

Issues

Greene County, MO, Groundwater Study

Greene County Resource Management Department asked Little Rock District to conduct a ground water study to investigate the reliability of the Ozark Aquifer to meet future needs of the county and, if necessary, to identify other water supply sources and facilities to meet that need. The project is authorized under Section 22 of the Water Resources Development Act of 1974, as amended. The cost of the study would be shared 50/50 between the Corps and Greene County. An agreement between the Corps and Greene County was signed in December 2006. The study is scheduled to continue through December 2009 with an estimated cost of $500,000 ($250,000 federal and $250,000 non-federal). Current activities include groundwater flow model construction, calibration of groundwater flow model, evaluation of groundwater-use scenarios and determination of zones of contribution. The project was delayed in fiscal 2008 because of late receipt of both federal and non-federal funding.

Emergency Supplemental Requirements

The project offices, parks, facilities and numerous other structures in Little Rock District were partially or totally impacted by floods that occurred in late spring and early summer 2008. Documentation of the massive damage to numerous facilities and substructures was analyzed. Estimated costs for the replacement, repairs or needed construction were developed. The level of degradation to some structures, facilities and equipment may result in an inability to operate some items in their intended purpose. In July 2008, the district received Flood Supplemental

Funds in the amount of $16,086,000. A district-wide effort to strategically obligate the majority of these funds prior to Sept. 30 was implemented. The remainder will be obligated by the end of the calendar year.

GWOT & Disaster Response

Little Rock District has direct roles in providing engineering support to the military in the Global War on Terrorism and to the nation in preparation for and responding to natural and man-made disasters. A significant percentage of Little Rock District personnel have deployed on rotations both stateside and abroad in support of these missions. The district currently has seven employees deployed to the Middle East in support of the Global War on Terror and 39 employees deployed in support of recovery operations for Hurricanes Gustav and Ike. The district has deployed more than five-dozen personnel to the Middle East since 2001. Most volunteered as Civilians, while others were called to duty in the National Guard and Reserves. Their technical and management skills in infrastructure construction and repair have been instrumental in rebuilding the Middle East. The district also provides tele-engineering support from "home" to deployed military units overseas that need assistance in engineering analysis and design requirements.

Jim Marple on his second tour in Iraq

Levee Certification

Within Little Rock District's boundary, FEMA is revising the Digital Flood Insurance Rate Maps in Conway, Jackson, Johnson and Logan Counties. FEMA has notified all levee owners within those counties that they must provide, within 30 days, documentation certifying that their levees meet FEMA requirements or request that their levees be provisionally accredited and agree to provide levee certification documentation within 24 months. The Corps is not uniquely qualified to perform levee certification and thus is unable to receive funds from local government. Therefore, we are not able to perform levee certification for the federal or non-federal levees operated and maintained by local sponsors. The North Little Rock Levee and Floodwall, Van Buren Levee and Floodwall, Crawford County Levee District, and Clarksville Levee and Floodwall are in the process of hiring private architect-engineer firms to perform the certification.

Mid Arkansas Water Alliance

The Mid Arkansas Water Alliance is a coalition of 8 counties (Cleburne, Faulkner, Pulaski, Saline, Lonoke, Conway, Perry, and Garland) in Arkansas that was formed to ensure a future water supply for the central Arkansas area. As a result of previous studies, it was determined that the best source of water would be to purchase enough storage in Greers Ferry Lake and Lake Ouachita to meet the needs of the area through 2025. A reallocation study and Environmental Assessment are underway. Under study were reallocations for 18,751 acre-feet (15 million gallons a day) at Greers Ferry Lake and 33,303 acre-feet (20 million gallons a day) at Lake Ouachita. Public workshops were held at Greers Ferry, Hot Springs and Little Rock in September 2006. The report package is scheduled to be forwarded in May 2009 to Corps HQ in Washington for approval. It should be noted that MAWA initially requested the remaining Corps discretionary storage in both lakes, but later reduced the request to leave discretionary storage for other utilities. At Greers Ferry Lake, about 14,000 acre-feet of discretionary storage would remain after this reallocation and all other requests currently being processed. About 10,000 acre-feet of discretionary storage would remain at Lake Ouachita. Because of a December 2007 dam safety classification of Blakely Mountain Dam, Lake Ouachita is no longer under consideration. The Greers Ferry reallocation is not affected.

Military Program

Fort Chaffee National Guard

Little Rock District is providing support to the Arkansas Army National Guard at Fort Chaffee. The Guard obtained use of Fort Chaffee by license during the Base Realignment and Closure Program, and the installation became known as the Fort Chaffee Maneuver Training Center. Though the Guard designs and constructs many of its own projects through state procurement sources, Little Rock District has strengthened its relationship with Guard facilities management staff over the past several years. As a result the Guard turned to Little Rock District for help in executing an estimated $18 million Combined Armed Forces Reserve Center at Fort Chaffee, which is currently under construction. Little Rock District created a Request for Proposals in a very short time-frame and awarded a construction contract for the project in September 2006. This project was a result of the 2005 Base Realignment and Closure recommendations and legislation. The project is scheduled for completion in late 2008. Additionally, the district awarded several Job Order Contract task orders for Guard projects near the end of fiscal 2008, with a total value of about $1.2 million.

Pine Bluff Arsenal

Little Rock District manages the design and construction program at the Pine Bluff Arsenal, the Department of Defense's premier chemical arsenal. The district awarded a construction contract for an Army Family Housing Project on March 31. This project will provide five new officer family housing units. Project completion is scheduled for May 2009. Little Rock District designers will begin work on a Bomb Storage Infrastructure Upgrades project in October 2008. This $25 million

Pine Bluff Arsenal

project consists of improvements to the Bomb Storage Area at the southern end of the arsenal. This area contains 71 existing warehouses. Roads that provide access to the warehouses are in varying stages of deterioration. The improvements will include resurfacing gravel roads, regrading to correct drainage problems. Work will also include repairing or replacing damaged concrete loading docks, floor slabs, reinforcing walls, roofs and doors to meet current security standards for buildings used to store arms, ammunition and explosives. Requirements have changed significantly since the original buildings were constructed. Little Rock District intends to have the project ready to advertise in October 2009.

Support For Others

Department of Energy - Office of Secure Transportation, Ft. Chaffee

The Department of Energy's Office of Secure Transportation, has established a permanent training facility for new federal agent recruits at Ft. Chaffee. The agency acquired about 6 acres under the Base Realignment and Closure program and has leased additional acreage and facilities from the Ft. Chaffee Redevelopment Authority. The agency has also secured the joint use of substantially more land and facilities through an agreement with the Arkansas Army National Guard. DOE entered into an interagency agreement with Little Rock District in 1998 and again in 2007 to provide facility maintenance, engineering consultation, design services, and construction projects. To date, projects to upgrade facilities have been accomplished using Little Rock District's Job Order Contracts. DOE has an aggressive five-year plan for ramping up its facilities at Ft. Chaffee. Several larger projects are anticipated, which will likely require design and more complex procurement actions. The main focus of the Office of Secure Transportation at Ft. Chaffee at this time is to obtain the Equipment Concentration Site #15, located on about 39.32 acres. This site will be vacated in about 2 years. It contains a 29,523 square foot vehicle maintenance facility, three other storage buildings, a wash pad, privately-owned vehicle parking, and a fenced military equipment parking area. Acquisition of this site will greatly enhance DOE presence at Ft. Chaffee and result in new projects and jobs. Little Rock District has provided support by responding to rapidly changing requirements, especially on maintenance and security projects. The district has also completed a comprehensive master plan for the agency at Ft. Chaffee and is providing other real estate support.

DOE Agent Facility

Department of Homeland Security – Border Fence

The Department of Homeland Security created a Strategic Border Initiative program to gain control of our nation's southern borders. The US Army Corps of Engineers' Engineering Construction Support Office in Fort Worth oversees several aspects of this aggressive program, including the acquisition of real estate, engineering design, awarding and administering construction contracts and providing materials to sites constructed by military personnel. Though the Corps' work is centrally managed, the agency uses a virtual team spanning several districts and divisions. Little Rock District has assisted by providing project management support for the Primary Fence 70 (PF 70), which installed 70 miles of fence by September 2007, and Primary Fence 225 (PF 225) which includes installation of 225 miles of primary fence. Work also includes border patrol roads, access roads, secondary fence, tertiary fence, lights, and other barriers. U.S. Fish and Wildlife Service and the International Boundary and Water Commission are involved to ensure barriers comply with local, state and federal law, as well as environmental law and international treaties. These projects will help protect against terrorist attacks and crimes and ensure the legal entry and exit of people and goods across the border by December 2008.

Department of Veterans Affairs

The Department of Veterans Affairs and the U.S. Army Corps of Engineers signed a Memorandum of Agreement in September 2007 that established a mutual framework for the Corps to assist the VA with planning, design and construction management, as well as provision of certain goods and services. The goods and services include technical investigations, project management, real estate services, design services, construction services, environmental services, and contracting services. Through the agreement, Little Rock District now provides project management, design services and contracting support to the Veterans Integrated System Network Region 17 in Texas. This spring the district executed 15 non-recurring maintenance projects totaling about $22.5 million and six construction projects totaling more than $35 million. The projects are at Veterans Affairs Medical Centers in Dallas, Bonham, Temple, Waco, San Antonio and Kerrville. The non-recurring projects include renovations for radiological technological upgrades, patient and clinical areas, and upgrading utilities.

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