



U.S. Army Corps  
of Engineers

# Tulsa District Project Update

## Volunteers Keep Corps Parks Open

Over the course of the last 10 to 20 years, almost without notice and with little or no acclaim, volunteers have come to play a vital role for the U. S. Army Corps of Engineers in the management of our parks on a national scale. In the beginning, they started out with small tasks such as tending to flower beds here and there a few hours per week. Over time their numbers and responsibilities have grown. In the last few years at the same time that Corps budgets have been more constrained and the size of the workforce has been reduced, flat lined and hired labor numbers have faded, the Corps volunteers were looking for economical ways to spend more time outdoors with nature. Many were looking for more ways to contribute to their country and all were seeking a means to supplement and offset the cost of using their recreational/camping vehicles for extended stays at the lake. It was a perfect match. In many instances, the Corps has provided camp sites in exchange for their volunteer labor. As more and more baby boomers are reaching retirement age, the potential volunteer labor pool is growing. Corps Districts across the nation logged millions of volunteer hours in 2007 with an estimated simple value of \$41 million. The Tulsa District was no exception.

The Tulsa District experienced both record flooding and ice storms in 2007. Estimated damages were in the millions of dollars. Operation and Maintenance budgets did not contain adequate funds to make the many necessary repairs to restore the parks to safe and acceptable levels of operation for these unanticipated events. Once again the role of our volunteers grew in scope. No longer were they just watering flower beds or picking



Colonel Funkhouser recognizes efforts of Glenn and Bobbie Wehrmann, two Lake Texoma volunteers.

up a little ground litter. Now they were engaged in massive clean up and restoration efforts. Volunteers were helping the Corps to remove vast amounts

of flood and ice storm debris. At many parks across the District, they were power washing toilet and shower buildings to remove flood deposited sediments from weeks of inundation. Volunteers scraped and painted many of our camp site amenities. They were assimilated into almost every repair and recovery task associated with the damaged public use areas.

During the last year, our Tulsa District volunteers have spent over 37,000 hours working to clean and repair facilities after our flood events and almost 11,000

**Almost without notice and with little or no acclaim, volunteers have come to play a vital role for the U.S. Army Corps of Engineers.**

hours cleaning up debris from the ice storms. From the June/July flood event of 2007 to the present, volunteers have worked over 48,000 hours

at our projects across the Tulsa District. Most of that time was spent working to restore our public use areas.

The simple value of their total volunteer labor since July 2007 is over \$900,000 but that does not do justice to the true value of their effort to the Tulsa District, our customers, and our stakeholders. The Tulsa District operates and maintains over 10,000 camp sites and hosts millions of visitors each year. Those

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# District Commander's Perspective



Colonel Anthony Funkhouser  
Commander Tulsa District

I want to thank you for reading this latest edition of our Tulsa District Project Update. This publication has the current status of our civil and military programs and happenings around our District. Its purpose is for you to see our progress as we work to support you and your communities. The last year has been very difficult for the Tulsa District area with record setting rains, floods, ice storms, and tornadoes. In this Project Update, we emphasize the volunteers and partnerships that enable us to continue to provide service to our many stakeholders. Without them, we would certainly provide lower levels of service.

We continue to serve with public safety and good stewardship of our water resources as our top priorities. We are very aware that the constant rains have impacted the economy of our region and, particularly, the local communities on the Arkansas River system. We know many of you have been affected and we will continue to provide the best service we can.

Our District will face many other non-weather-related challenges in the coming year. Our civil works budget will likely continue to remain flat while the cost of fuel and other construction

resources continue to rise. Our dam, levee, and lock system infrastructure will continue to age and draw on our limited resources for major repairs. Our workforce will also be impacted as we recruit, train, and develop new personnel to replace those retiring. I have confidence that we will overcome these challenges over time. Lieutenant General Robert L. Van Antwerp, Chief of Engineers, recently described four metrics that I see we can use to measure our progress as we seek to overcome short-term challenges for long-term successes.

- **Deliver superior performance**
- **Set the standard for our profession**
- **Make a positive impact on the nation and other nations**
- **Built to last as evidenced by our strong “bench” at all levels – educated, trained, competent, experienced, and certified**

The first metric is continue to deliver superior performance. We must be an organization that is sought for its technical competency and its ability to execute and deliver projects that meet our partners’ needs in schedule, cost, and scope. We have to meet and exceed expectations every time. A customer should seek our services because of our reputation, experience, and high standards. We must maintain this in order to remain a viable option for our military and civil works partners. We will continue to engage our partners throughout all projects to ensure we deliver superior performance. We will measure this with our annual customer surveys and develop action plans to proactively address any shortfalls.

Secondly, we must set the standard for our profession. A profession is an organization that has education requirements, standards of certification and

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## Corps of Engineers

# Missions

The mission of the United States Army Corps of Engineers, the world's preeminent public engineering agency, is to provide quality, responsive engineering services to the nation and its armed forces. The Corps plans, designs, builds and operates water resources projects; designs and manages military facility construction for the Army and Air Force at home and abroad; provides design and construction management support for other Defense and Federal agencies; cleans hazardous areas across the nation through the Formerly Used Defense Sites program and the Formerly Utilized Sites Remedial Action Program; and conducts state-of-the-art engineering research and design at its Engineer Research and Development Center.

Over its 230-year history, the Corps of Engineers mission has evolved. What began as a military engineering mission for the nation in the 18th Century adapted into a major peacetime mission in the 19th Century. The Corps helped develop a vast water resource infrastructure, initiated development of the first national parks, and linked navigable waterways together to move commerce across states.

In the 20th Century, the Corps civil mission changed again with the adoption of more water resources development and management duties including flood control, hydropower, recreation, water supply, shore protection, and disaster relief. More recently, environmental protection and restoration missions were entrusted to the Corps.

As society's requirements and values have changed, the Corps programs have changed to reflect new national priorities.



U.S. Army Corps  
of Engineers

licensing, and is self policing. Our Congressional leaders and our public expect us to ensure we maintain our core technical competencies. We will continue to emphasize and support the certification and licensing of our employees. We must continue to raise the standards of our profession and fund training for our employees. This will allow us to maintain our core engineering and other competencies and provide confidence to our partners. We will assess our success with our training and recruiting plans and by increasing our certifications and licensing.

A major metric is our measure of making a positive impact to our nation and other nations. We have been given the responsibility to manage our nation's water resources and to maintain our dams, levees, and locks and to design and construct quality facilities for our Soldiers and Airmen at the six Army and

Air Force installations within our boundaries. Based on this responsibility, we must ensure public safety and be a good steward of the resources provided to us from our government. We will use our limited resources and put them toward prioritized maintenance requirements to ensure all of our projects operate safely and as designed. Additionally, the U.S. Army Corps of Engineers is supporting the global war on terror and other major projects around the nation and the world. We continue to have selfless volunteers step from our ranks to temporarily support these requirements. Our measure of success is to continue to serve these requirements while we execute our District mission with limited personnel.

Finally, we must educate and train a competent, experienced, and certified workforce. We must build our organization to last beyond ourselves. The real test of our success is our legacy. We

must continue to pursue the next generation of project managers, engineers, real estate and contract specialists, economists, and biologists and bring them into our ranks. We must train them on our Corps responsibilities and our processes to ensure they accumulate experience before we retire. We must work to get them licensed and certified so we can maintain the momentum.

These metrics are essential to our accomplishing all the projects each year but more importantly, these are the measures of success for an organization to prevail through all challenges now and into the future. Lieutenant General Van Antwerp's intent is for the Corps to be one disciplined team – in thought, word, and action – and to meet our commitments, with and through our partners, by "SAYING WHAT WE WILL DO, AND DOING WHAT WE SAY." Tulsa District will endeavor to meet his intent!

## Congresswoman Boyda Visits John Redmond Reservoir



On July 7, 2008, Colonel Anthony Funkhouser, Congresswoman Nancy Boyda (KS-2), and Kansas Water Office Director Tracy Streeter met to discuss John Redmond Reservoir maintenance issues and the Jacobs Creek logjam. The group then toured the area by helicopter to get a better understanding of the ongoing challenges the logjam presents the community and to the project.



Top - (left to right) Tracy Streeter, Director, Kansas Water Office; Congresswoman Nancy Boyda, Kansas District 2; Colonel Anthony Funkhouser, Tulsa District Commander; John Roberts, Deputy District Engineer for Project Management.

Left - Channel is blocked by debris.

Background - The collection of debris is a significant challenge to project managers.

# Corps of Engineers and Fort Riley engineers partner to demolish Fall River water tower

## Initiative saves project funds, provides training to Soldiers

First, you see a flash and smoke. Next, the tower starts to tilt. Then, you hear the explosion. It's a strange chain of events and a lesson in the speed of sound experienced by people gathered to watch the old water tower at Fall River Lake be, according to the Army news release, "explosively reduced."

A former platoon leader of Colonel Funkhouser's, Captain John Miller, leads the 111th Engineer Company (Sapper), 1st Engineer Battalion, stationed at Fort Riley, Kan. Their connection led to a partnership that benefits both the Soldiers and Tulsa District. The engineer company, which returned from Iraq late last year, is always looking for real-life engineering challenges to keep them trained for their military work. The old water tower which needed to be removed from Fall River Project provided just such an opportunity.

The obsolete tower, erected in 1948, had a 25,000 gallon tank and sat on legs approximately 95 feet from the ground to the top of its cap. It was previously used for the Fall River Lake Office and Overlook water supplies. Its final use, however, was to provide training for the young engineer Soldiers. A safe perimeter was established; blast barricades were built by inmate labor (another partnership established by the Fall River Office); the media was informed; charges were set; people gathered to watch; unmanned cameras were anchored by sand bags; and soon there was "fire in the hole!"

The tower was taken down by two planned explosions -- the first causing it to lean and the second making it fall -- right between two trees as predicted.



Lots of work went into the event, and Park Ranger Gary Simmons pulled it all together. Coordination was accomplished with Kansas State Parks, the highway department, nearby residents, and the utility company which temporarily removed transformers in the area of the blast. The Soldiers arrived the day before to prepare. On the morning of the demolition, Simmons said, "It was a lot of work -- lots and lots of manhours -- but it was all worth it to spend last night camped with those young Soldiers and hear their stories and look at their pictures. I think getting to know them on a personal level was the definitive high-point for the entire staff."

Following the tower's fall, nearly 100 Soldiers and family members were guests at a cookout provided by the

An obsolete water tower at Fall River Lake in Kansas was demolished in a training exercise for some Engineer Soldiers recently returned from Iraq.

This valuable training experience saved the Corps of Engineers \$25,000 in demolition costs.

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Members of the 111th Engineer Company (Sapper) posed with their flag in front of the top of the water tower.

Fall River Project Office. “Everyone worked real hard,” according to Susan Couch, manager of Fall River, Big Hill, and Toronto projects. She noted that all the extra work and preparation for both

the blast and the barbeque were accomplished during a flood watch. Fall River was teetering on the edge of requiring 24-hour surveillance. Fortunately, sunny skies greeted the Soldiers and onlookers

that day, and the weather stayed clear through the meal and family time.

The day that started with a bang ended with the feeling of a job well done -- and appreciated.



A crowd gathered to watch the water tower come down. Barriers and guards kept them a safe distance from the blast.



Everything is a canvas when you're young and in love. This is a shot of the water tower at Fall River after the demolition.

# Congressman Tiahrt participates in groundbreakingings

## Cowskin Creek Local Flood Protection

A groundbreaking ceremony was held on February 5, 2008, for the Cowskin Creek Local Flood Protection Project in Wichita, Kansas. Dignitaries included Congressman Todd Tiahrt and Mel Thompson from Senator Pat Roberts' office.

The Cowskin Creek Basin drains an area of 122 square miles and over the years has sustained significant recurring flooding which directly impacts residential areas.

The November 1998 flood resulted in significant damage to about 200 homes and many businesses, some of which

were damaged beyond 50% of their value.

The project creates an overflow channel approximately 300 feet wide on the eastern overbank area of Cowskin Creek, between Kellogg Drive and Maple Street for approximately 1,200 feet.

On September 4, 2007, a construction contract was awarded to a local contractor, Pearson Excavating from Wichita, Kansas.

Construction began in mid-February 2008, and the project should be complete in early 2009.



Participants in the Cowskin Creek groundbreaking are (left to right) Chris Carrier, Director of Public Works; Colonel Anthony Funkhouser, Tulsa District Commander; Councilwoman Lavonta Williams; Councilman Jim Skelton; Mayor Carl Brewer; County Commission Chair Tom Winters; Congressman Todd Tiahrt; Sandy Martz; and Councilman Jeff Longwell.

## Sand Creek Ecosystem Restoration Project

A groundbreaking ceremony was held on March 25, 2008, for the Sand Creek Ecosystem Restoration Project. The Sand Creek corridor in Newton, Kansas, was originally constructed by the Corps of Engineers in the 1960s to alleviate flooding problems through the center of town.

The proposed ecosystem restoration project focuses on riparian corridor habitat restoration that will extend approximately 1.7 miles along the Sand Creek channel.

Along with bank restoration, the project will include

the creation of a 35-acre wetland west of the wastewater treatment plant and two hardwood tree planting areas. More than 450 trees and almost 800 shrubs will be planted throughout the project, with native grasses along the creek.

On January 30, 2008, the construction contract was awarded to a local contractor, Utility Contractors, from Wichita, Kansas.

Construction is scheduled for completion in the summer of 2009.



From left to right - Tulsa District employees Mike Nance, Steven Rous, Dan Johnson, and Kevin Archer with Congressman Todd Tiahrt at the groundbreaking ceremony for the Sand Creek Ecosystem Restoration Project.

## Yukon Project Cost-Sharing Agreement Signed



Mayor Ward Larson with Colonel Anthony Funkhouser

The mayor of Yukon, Okla., Ward Larson (left), visited Tulsa District July 29 to sign the Project Cooperation Agreement which formally signifies commitment by the Corps and the city to participate in cost sharing on the construction project which will upgrade Yukon's domestic water supply system. The agreement is the contract between the government and the non-Federal sponsor which defines the responsibilities regarding funding and real estate required for construction of the project.

Stacey Glasscock of Congressman Frank Lucas' office attended the signing ceremony.

# Water Safety Program

*“Your safety, Our concern”*

Life jackets are provided for visitors at most Corps parks near boat ramps and swim areas.



“Bobber” and park ranger Dakota Allison impress young rodeo visitors at the 41st Walleye Rodeo held at Canton Lake, May 15-18.

Tulsa District’s employees take water safety very seriously. Saving one life from drowning makes our presence at boat shows, schools, and special events such as parades.

At the recent Tulsa Boat Show, Corps park rangers were busy the whole time. Sharing information about the Corps recreation program and encouraging water safety were the themes of that visit.

Sincerity and personal appreciation for people make their water safety activities successful.

Children are drawn to the Corps water safety mascot “Bobber - The Water Safety Dog”. Water safety promotional items such as tatoos, frisbees, and coloring books are taken away by the children and become a reminder when at home.

The four major causes of drownings are:

- ✓ Not wearing a life jacket;
- ✓ Abuse of alcohol;
- ✓ Lack of sufficient swimming skills;
- ✓ Hypothermia

*Wear your  
life jacket!*



Corps rangers staff the water safety and information booth at the Tulsa Boat Show.



Park ranger Debbie Chaloupek and “Bobber” ride the Corps float in a parade at the Walleye Rodeo, Canton, Okla. On front of the float is the Corps remote controlled water safety sea serpent “Seamoor”.

## Volunteers Keep Parks Open ... from page 1

visitors spend over \$537 million every year for recreation related goods and services in the various communities within a 30 mile radius of our projects. The resulting visitor spending activities support over 7,000 jobs in the local communities around our lakes. Without the tremendous efforts of our volunteers this last year to assist us with our repairs and clean up operations, many of our facilities would not have been functional which would have resulted in lost revenue and lost jobs to the local businesses and communities around our lake projects.

### Fiscal Year 2008 Emergency Supplemental Bill Provides Funding for Health and Safety Repairs Due to 2007 Flooding

The Emergency Supplemental Appropriations Bill provided \$10.5 million of funds for the Tulsa District projects at the following locations:

- Canton Lake - \$100,000
- Council Grove Lake - \$165,000
- Elk City Lake - \$1,045,000
- Fall River Lake - \$40,000
- John Redmond Lake - \$25,000
- Kaw Lake - \$36,000
- Keystone Lake - \$15,000
- Lake Texoma - \$2,225,000
- McClellan-Kerr Arkansas River Navigation System - \$2,750,000
- Oologah Lake - \$1,700,000
- Toronto Lake - \$30,000
- Waurika Lake - \$175,000
- Webbers Falls Lock and Dam - \$2,250,000

The funds will be used to address health and safety related items such as repairs to embankment and outlet works, dredging and construction of dredge disposal areas for the McClellan-Kerr Arkansas River Navigation System, replacement of toilets ruined by flooding, repairs of failed roadways, and replacement of corroded electrical systems.

Contracts for all emergency repairs will be awarded by the end of September 2008.



# Tulsa District's Military Program

## Fort Sill ahead of schedule

Ross Adkins

Camp Wichita, today better known as Fort Sill, Okla., was never a sleepy frontier outpost. In the 1800s, Fort Sill was home to six cavalry regiments accompanied by frontier scouts such as "Buffalo Bill" Cody, "Wild Bill" Hickok, Ben Clark and Jack Stilwell.

Now, there is even more hustle and bustle as it gets ready to accept returning Soldiers from overseas posts and reassignments from other Army installations as part of the ongoing Base Realignment and Closure program.

The move of the Air Defense Artillery School and the 31st Air Defense Artillery Brigade from Fort Bliss in Texas to Fort Sill is causing much of that new construction. It requires building new instructional buildings, barracks, dining facilities, vehicle maintenance facilities, and administrative buildings. Many existing buildings are being renovated and upgraded.

It also means a huge influx of families into the area. In addition, on-base infrastructure will have to be built or improved to support the additional troops.

The Tulsa District, along with four other districts, Fort Worth, Little Rock, Savannah, and Norfolk, have combined efforts to have everything ready for the troops. Some of the troops have already reported to Fort Sill and most of the troops will be there by 2010, one year before the required BRAC completion in September of 2011. Total cost for the two large BRAC projects is approximately \$338 million.

Ramona Wagner, Tulsa District's deputy chief of Engineering and Construction Division, said, "With the combined skills and dedication to getting the job done by these partnering districts, we should have everything up and running by the target dates."

Another project to soon be advertised will be a nearly \$40 million, 1,200 person Armed Forces Reserve Center to be built on Fort Sill.

Fort Sill remains the only active Army installation of all the forts built on the south plains during the early days of our country. Although it has not increased the size of its boundaries, it certainly has increased its size and stature within today's modern Army.



Major General Temple inspects construction at Fort Sill.



Air Defense Artillery School dining facility under construction at Fort Sill.

# Canton Lake Dam Safety Project Includes Public Meeting

In early May 2008, Tulsa District hosted an open house at the Canton Community Center to discuss the Canton Dam Safety Assurance Project with members of the public. About 40 people attended the open house and spoke one-on-one with Corps representatives.

Studies had determined that there are seepage issues and the potential for the embankment to be overtopped during a probable maximum flood event. Consequently, restrictions to the flood pool and authorized project purpose are in place

while the dam safety project construction is underway.

The multiyear, multiphase project includes construction of a new auxiliary channel spillway which will resolve the embankment overtopping deficiency. As a secondary benefit, the excavated channel material will be placed at the toe of the existing embankment to correct the seepage issue.

The open house was part of a continuing effort to keep the public informed on current and future activities for this project.

The spillway excavation contract is scheduled to be awarded in September 2008. Construction to relocate

Highway 58A and reconfigure the project office is in progress.



Dawn Rice, Tulsa District technical manager, provided tours of the project via presentation boards. Here she speaks with Canton resident, Troy Everett.

## Broken Bow sets lake level record

Broken Bow Lake in southeastern Oklahoma was very active in this spring's efforts to reduce downstream flooding.

David Stewart, lead park ranger, said, "The flooding that occurred during March-April 2008 was, in fact, the flood of record for Broken Bow Lake. The normal pool elevation for the summer period is 603, and it crested on April 6 at 11:00 p.m. at elevation 626.30. It got close to the top of the tainter gates at the spillway but still well under the top of the flood pool."

Right - The fuel storage tank at Beavers Bend Marina (right) broke loose and floated. It had been tied off and kept secured by ropes and a chain link fence. Although it did contain some unleaded fuel, valves had been shut off to prevent spillage.

Below - People gathered to watch the water as the tainter gates were opened six inches to allow discharge.



# Arkansas River Basin

## Arkansas City Aquatic Ecosystem Restoration

Section 206, Water Resources Development Act of 1996, as amended

### Feasibility Study

The city of Arkansas City is located at the confluence of the Arkansas and Walnut Rivers in southeast Kansas, Cowley County, approximately 122 miles northwest of Tulsa, Okla.

The proposed restoration site is located within the historic floodplain of the Walnut River. The recommended plan would improve various types of wildlife habitat over a total of 122 acres. Borrow pits would be modified to be productive fish habitat. Constructed wetlands would provide habitat to numerous types of wildlife as well as improve water quality. Species diversity and carrying capacity would be restored to bottomland hardwood stands and prairie grasslands in the project area.

Fiscal year 2008 efforts are focused on completion of feasibility study efforts that will detail the most cost-effective plan to restore this historic floodplain.

## Arkansas River Corridor

Section 22, Water Resources Development Act of 1974, Public Law 93-251 (Planning Assistance to States Program)

### Study

The Arkansas River is a valuable water resource that provides opportunities for redevelopment to promote economic development, ecosystem restoration, and other initiatives that would improve the quality of life for many citizens living in the Tulsa metropolitan area as well as visitors to the region. At the end of 2006, we completed a comprehensive Master Plan which integrates economic development with ecosystem restoration. This plan identifies specific features and locations based on extensive public out-

reach efforts and technical analysis of the feasibility of the vision.

In 2008, we continued with Phase III of the Arkansas River Corridor Study which focused on engineering and environmental studies. Primary products from this phase include: an ecosystem restoration plan, geotechnical studies, recommendation for holistic approach to weir operation, design recommendations and baseline environmental data.

Two low-water dams have been identified as major components of the comprehensive ecosystem restoration

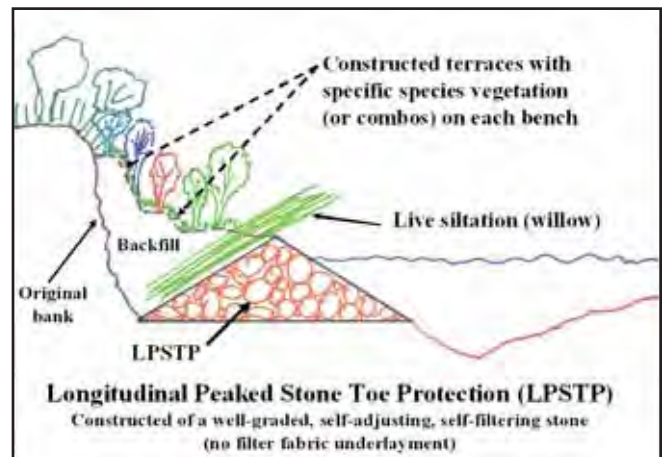
plan. They are necessary as hydropower production at Keystone Dam has negatively impacted this riverine ecosystem. Tennessee Valley Authority was on the team to model impacts of various dam designs on the aquatic ecosystem and public safety. Tulsa County is the cost-share sponsor in Phase III.

The Water Resources Development Act of 2007 authorizes the expenditure of \$50 million in Federal funds for implementation of features in the 2005 Arkansas River Corridor Master Plan. Tulsa District could use \$10 million in 2009 to complete the decision document,



Above - Erosion along the banks of the Arkansas River are a concern for the metropolitan areas included in the Arkansas River Corridor study.

Solutions being considered for that erosion include terracing and plantings.



execute the project cooperation agreement, begin design and the National Environmental Policy Act process, and construct ecosystem restoration measures adjacent to the existing Zink Dam.

This project has generated great excitement within Tulsa County as well as the region. Other municipalities are closely watching the successes of our partnerships with both public and private stakeholders.

On July 7, 2008, the Tulsa County Commissioners voted to award preliminary design and 404 permitting actions to a highly qualified A/E consultant. This effort is a 50%/50% cost share being funded with Tulsa County Vision 2025 funds and a grant from the Economic Development Authority, along with Federal Planning Assistance to States funding.

The Arkansas River Corridor Master Plan and documents are hosted on the INCOG website.

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## Augusta Levee Local Flood Protection Project

Section 205 of the Flood Control Act of 1948, as amended (Continuing Authority - Flood Control)

Pre-Construction Engineering & Design

Augusta is about 19 miles east of Wichita, Kansas. The Whitewater River runs through Augusta to its confluence with the Walnut River.

The original levee was constructed in the 1920s and '30s through private and public sponsorship and was incorporated into the Federal Levee Inspection Program in the 1940s.

The November 1998 flood damages were caused primarily by the Whitewater River breaching of the city's levee system at several locations along the west side of Augusta. The recommended plan is to raise and extend the existing levee to provide a 500-year level of flood protection. On March 3, 2008, the Project Cooperation Agreement for construction of this important project was executed.

Fiscal year 2008 efforts are focused on completion of construction plans and

specifications and obtaining the necessary right of way for the construction effort. We anticipate award of the construction effort in the spring of 2009.

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## Blackwell Lake Clearing and Snagging

Section 208 of the 1954 Flood Control Act, as amended by the 1974 Water Resources Development Act

Project Design Analysis Underway

Blackwell Lake is located in Kay County, Okla., near Braman, and is a primary recreational feature in that part of Oklahoma.

Due to the ice storm of 2001, a heavy load of logs and other debris have accumulated upstream of the Lake Blackwell Dam and spillway. The logjam is blocking access to the gate controls of the dam structure and has completely overwhelmed the normal maintenance capacity of the Lake Blackwell Trust Authority. The logjam has also significantly increased the flooding risks of the residential community immediately upstream (approximately 200 homes). The recommended plan of improvement is to remove the logjam and properly dispose of the accumulated material.

Currently, this project is on hold due to lack of Federal funding. If funding were made available, fiscal year 2009 activities could focus on execution of the Project Cooperation Agreement and initiating construction efforts.

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## Candy Lake Land Sale

Water Resources Development Act of 1999

Land Sale

Candy Lake was deauthorized by publication in the Federal Register in December 1996. The Water Resources Development Act of 1999 authorized the Corps to sell Candy Lake project land at fair market value to the previous landowners or their descendants.

On July 30, 2008, the final deed was recorded at the Pawhuska, Okla., courthouse which completed the relinquishment of flowage easements and

sale of land. This completes the series of deeds the Tulsa District, U.S. Army Corps of Engineers and General Services Administration have negotiated for 72 tracts of land over the past years.

Three remaining tracts totaling approximately 615 acres of land received no heir interest. These tracts were transferred to GSA for disposal through the Federal process. The General Services Administration is currently awaiting determination of eligibility from the Bureau of Indian Affairs as to whether the remaining tracts will be transferred to the Osage Nation or cleared for further disposal actions in accordance with the Federal Real Property Disposal process.

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## Canton Lake, Oklahoma (Dam Safety)

Flood Control Act approved June 28, 1938 (Public Law 761); Flood Control Act approved July 24, 1946 (Public Law 526) (irrigation storage); Flood Control Act approved June 30, 1948 (Public Law 858); and the Water Resources Development Act of 1990 (Public Law 101-640) (water supply storage)

Under Construction

This is a \$79 million multi-phase dam safety project with the first phase consisting of a Spillway Stabilization Construction Project in which 64 anchors were installed into the spillway to correct stability deficiencies. The first phase contract was performed for \$4.5 million and was completed in October 2006. In fiscal year 2007, a slurry trench contract was awarded in September 2007 for \$1.4 million to construct a water barrier between the lake and the new location of the auxiliary spillway. Development of plans and specifications for the excavation contract also continued in 2007. Fiscal year 2008 activities include awarding a \$3.1 million contract for the relocation of Highway 58A, a \$900,000 design/construct contract for reconfiguring the current project office, and the award of the first phase of the auxiliary channel excavation contract which is anticipated to occur in September 2008.

The first phase of the auxiliary channel excavation contract will consist of the

excavation of the new auxiliary channel (1.5 million cubic yards), construction of concrete diaphragm walls and aprons, channel rip rap, groundwater control, channel cut off wall, new piezometers and extension of the current relief wells. As a secondary benefit of the contract, the excavated channel material will be placed at the toe of the existing earth embankment to mitigate seepage under the existing embankment.

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## Cowskin Creek, Local Flood Protection Project, Wichita, Kansas

Section 205 of the Flood Control Act of 1948, as amended (Continuing Authority - Flood Control)

Pre-Construction Engineering & Design

The Cowskin Creek Basin is located in the western part of Wichita, Kansas. This basin has sustained significant recurring flooding problems directly impacting residential areas. The November 1998 flood resulted in significant damage to about 200 homes and

many businesses, some of which were damaged beyond 50% of their value. The recommended plan of improvement would include channelization of a portion of Cowskin Creek with construction of an overbank area to convey the high flows during a flood event.

On September 14, 2007, the contract for construction of the Cowskin Creek Local Flood Protection Project was awarded to Pearson Excavating from Wichita, Kansas, for \$2,489,828. Notice to Proceed was issued on October 3, 2007. Construction is in progress and scheduled for completion by early 2009.

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## East Tulsa County, Haikey Creek Watershed, Oklahoma

Section 205 of the Flood Control Act of 1948, as amended (Continuing Authority -- Flood Control)

Feasibility Study

The Haikey Creek watershed is approximately 9 miles long and a maximum of 8 miles wide, originating in Broken Arrow, Okla., flowing generally south-

ward within east Tulsa County through portions of the cities of Tulsa and Bixby. The drainage area contains approximately 37 square miles and is largely urbanized.

The city of Bixby requested assistance to reduce flooding and improve riparian habitat in the lower reach of Haikey Creek. Potential improvements could consist of channelization of Haikey Creek and/or construction of a levee approximately 2-5 feet high.

On February 26, 2008, only one alternative was identified that fulfilled the Federal requirement for project implementation. Unfortunately, this alternative did not address all the needs of the sponsor and, at that time, the city of Bixby decided to pursue implementation efforts without Corps involvement.

Study termination efforts are underway and information from the study is being provided to the city of Bixby to allow them to complete implementation of the locally preferred option.

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## Grand (Neosho) River Wetlands and Bottomland Hardwoods Ecosystem Restoration, Oklahoma

Section 206 of Water Resources Development Act of 1996, as amended (Continuing Authority -- Aquatic Ecosystem Restoration)

Planning

This ecosystem restoration project will focus on wetland bottomland hardwood habitat restoration along the Neosho River upstream of Miami, Okla. Project features could include outdoor classrooms and multipurpose maintenance trails that provide public access for nature-related recreation.

In December 2006, The Natural Resources Conservation Service at Stillwater completed a preliminary assessment report detailing possible improvements that could be accomplished.

This project is on hold due to a lack of Federal funds to complete the feasibility study effort.



Canton Lake, Okla., Dam Safety Project

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## Grand Lake Comprehensive Study

Section 449 of the Water Resources Development Act of 2000

### Study

Grand Lake became operational in 1941 and its purposes include hydroelectric power (operated by the Grand River Dam Authority, an agency of the state of Oklahoma) and flood control (directed by the Corps). Grand Lake is located in the Grand (Neosho) River Basin (a sub-basin of the Arkansas River Basin) and is an integral component of a system flood control operation consisting of 11 principal reservoir projects in the Arkansas River Basin. The system operation of the 11 reservoirs also benefits the McClellan-Kerr Arkansas River Navigation System.

Grand Lake was designed and constructed by the Grand River Dam Authority and initially had a single purpose of hydropower production. In order to include Grand Lake as part of a comprehensive multipurpose plan for the Arkansas River, the Flood Control Act of 1941 authorized the Corps to manage the flood control features. The flood control pool limits were established from elevation 745.0 to 755.0 (Pensacola datum). Flood flowage easements were acquired up to elevation 750.0 by the State of Oklahoma. Other Federal agencies acquired flood flowage easements from elevation 750.0 to 760.0. The flowage easements are now held by the Corps.

In response to public concerns, Congress established Section 560 of the Water Resources Development Act of 1996 which authorized the Corps to conduct a study that considered the combined operating purposes of flood control and hydropower. The September 1998 Grand Lake, Okla., Real Estate Adequacy Study report documents that areas were found around the lake where, using current criteria and based on current lake operations, additional flowage easements would be recommended if Grand Lake was a “new” Corps project.

A letter report was prepared by the Tulsa District Corps to document an

initial technical evaluation of historical and theoretical flood events. Based on review of the letter report, the Assistant Secretary of the Army for Civil Works concurred on September 14, 2007, that further detailed study is warranted. With that decision and in accordance with the provisions of Section 449 of the Water Resources Development Act of 2000, the feasibility study could be conducted at full Federal cost.

Existing funds will be used to complete a study/project management communications plan and hold a feasibility scoping meeting. A Geographical Information System (GIS) Summit will be conducted in fiscal year 2008 and will include data gathering with priority given to information that would help Ottawa County and the city of Miami, Okla., in making short-term floodplain management decisions.

Potential future feasibility phase activities would be dependent on annual congressional funding. The purpose of the feasibility study would be to identify cost-effective solutions to the flooding problems consistent with current Federal policies. Categories of alternatives to consider include structural measures (such as levees), nonstructural measures (such as flood proofing and buyouts of flood prone structures), changes in the system operation, and combinations of measures.

A strategic activity, to address minor flood events, is the flood control pool releases consistent with the current system operating plan. While there is only limited and preliminary data at this time to confirm the effectiveness, it is likely that this approach reduces flooding related to the more frequent (minor/moderate) flood events. It is important to note, however, that large flood events, like those frequent in the late 1980s and 1990s, overwhelm available flood storages, significantly limit the ability to transfer flood waters to downstream lakes quickly, and cause significant flooding with or without operational modifications.

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## Grand/Neosho Ecosystem Restoration Study

Section 208, Flood Control Act of 1956

### Study

The study area consists of the 12,500 square-mile Grand/Neosho River Basin in northeastern Oklahoma and southeastern Kansas. Flooding around Grand Lake, sedimentation problems in John Redmond Reservoir, and the 1,800 square miles of uncontrolled drainage areas have increased the need for a basin-wide study to address flooding and floodplain management problems and opportunities, and ecosystem improvements associated with aquatic habitats, wetlands, and watershed corridors.

A feasibility cost-share agreement was executed with the Kansas Water Office in September 2006 for the John Redmond Reservoir Study. This interim study focuses on the ecosystem degradation that has occurred in John Redmond Reservoir. This degradation is largely a result of sedimentation and nutrient loading. Other local issues such as the logjam and an assessment of dredging as an alternative are included in the multi-year study.

In 2007, we collected data for modeling, completed a sedimentation survey in the lake, and completed alternative formulation.

Ongoing actions in 2008 include installing monitoring gauges, conducting watershed modeling, conducting sediment studies, and preliminary formulation of alternatives. We also submitted a feasibility scoping meeting package to Corps headquarters. This is a major milestone to gain policy review and concurrence on alternatives and evaluation measures.

With additional funds in fiscal year 2009, we could complete the National Environmental Policy Act documents and prepare the draft feasibility report for the Division Commander’s public notice. The study is scheduled to be completed in December 2009.

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## Joe Creek Ecosystem Restoration Project, Tulsa, Oklahoma

Section 1135, Water Resources Development Act of 1986 (Continuing Authority -- Habitat Restoration)

### Feasibility Study

Joe Creek is a tributary to the Arkansas River at Tulsa, Okla. The Joe Creek Local Protection Project was constructed under the authority of Section 205 of the 1948 Flood Control Act. A majority of the improved channel is concrete lined. The proposed project will focus on improvements to the riparian stream corridor habitat that was impaired when the original flood control project was constructed. Detailed feasibility study efforts were completed in August 2008. Fiscal year 2009 activities will focus on completion of contract plans and specifications.

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## Lawton Wastewater Infrastructure

Section 219(f)(40), Water Resources Development Act of 1992 as amended

### Pre-Construction Engineering & Design

The project consists of constructing wastewater infrastructure for the city of Lawton, Okla. Lawton is located approximately 100 miles southwest of Oklahoma City in Comanche County, Okla.

The city is conducting a 20-year, three-phase \$63 million sewer rehabilitation program in response to a consent order from the Oklahoma Department of Environmental Quality. The program involves total replacement of sewer pipelines and upgrading of other components. The services provided by the city's infrastructure include off-base housing for the Army at Fort Sill. The Corps participation in the overall project will be approximately \$2.5 million.

The city will provide the construction

plans and specifications and the Corps will conduct all contracting and construction administration services as well as publication of the Environmental Assessment.

In fiscal year 2008, the Project Cooperation Agreement was signed. This allows the sponsor to begin acquisition of real estate. This activity should be complete in fiscal year 2009. If acquisition occurs on schedule, a contract could be underway in fiscal year 2010.

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## McClellan-Kerr Arkansas River Navigation System, Arkansas & Oklahoma, 12-Foot Navigation Channel

Section 136, Energy and Water Development Appropriations Act, fiscal year 2004 (Public Law 108-137)

### Authorized (Not Started)

The McClellan-Kerr Arkansas River Navigation System is approximately 445 miles long, consists of 18 locks and dams, and provides 9-foot-deep inland navigation from the Mississippi River to Catoosa, Okla. In 2005, the system carried 12.9 million tons of various materials to include petroleum products, wheat, chemicals, and steel.

This project will deepen the navigation channel to a minimum depth of 12 feet thereby increasing the efficiency of the system. Deepening of the channel will be performed by a combination of techniques including altering the flow management, constructing dikes and jetties and dredging the channel. This project also includes a significant environmental component to include creation of bottomland hardwood forests and high quality wetlands as well as other environmental enhancements.

This project has a projected cost estimate of \$165.5 million and is jointly managed by both Little Rock and Tulsa

Districts. To date, \$7.0 million was provided through a fiscal year 2005 congressional add to complete the feasibility study and the Environmental Impact Statement as well as to start dredging activities and construction of dikes and jetties.

During fiscal year 2006, dredging commenced and was completed at mile 348 in Pool 15 in Oklahoma as well as commencing construction of training structures in Pools 2 and 7 in Arkansas. Construction of a Least Tern Island with rock protection was also accomplished in conjunction with the dredging activities in Pool 15. Design of river structures was accomplished for Pools 2, 7 and 5. Mitigation activities including aquatic and terrestrial surveys were performed in both Oklahoma and Arkansas. A five-year project plan was also developed for the project that includes an integrated project breakdown of activities and associated costs that has been vetted through the navigation stakeholders.

This project was not included in the fiscal year 2007 budget. However, fiscal year 2006 carryover funds were used to place stone structures to improve self scour in Arkansas, continue the design of upland dredge disposal sites, and continue real estate efforts in Oklahoma.

This project is not included in the fiscal year 2008 budget. The only activity performed in fiscal year 2008 was the completion of the design for the upland dredge disposal sites and the cultural resource investigation. Funds have been exhausted resulting in no further work ongoing on the project.

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## Oklahoma Comprehensive Water Plan

### Study

We are providing technical planning assistance, through the Planning Assistance to State authority to the Oklahoma Water Resources Board, for an update of the Oklahoma Comprehensive Water Plan (OCWP). In fiscal year 2008, we have developed programmatic work plan, developed and distributed an infrastructure survey for municipalities and rural water districts and a pilot GIS project. Coinciding with these integrated efforts is an extensive public participation program to create a transparent and open planning process. Contingent on approvals and future funding, it is anticipated that information from Southeast Oklahoma and Washita Watershed Management Plans will be integrated into the OCWP.

The entire process has three phases. Currently, the Corps is authorized to participate only in the studies.

The first phase of the OCWP update will focus on development of water demand projections by county and region throughout forecast year 2060 as well as a comprehensive inventory and analysis of the state's water supplies. Phase two of the updated water plan will identify local and regional problems and opportunities related to the use of water for public supply, agricultural, industrial, recreational, and environmental uses. This particular segment of the planning process, involving close partnerships with both municipal and rural water system representatives, will identify infrastructure needs, management options, and other measures to maximize the efficiency of Oklahoma's public water suppliers.

The third phase of the state water planning process involves the implementation of planning initiatives and tools derived from the issues, problems and needs identified during phase two. The Oklahoma Water Resources Board is drawing upon the expertise of Oklahoma's foremost water experts from various water use sectors, local, state and Federal governments, and universi-

ties to develop policy recommendations for consideration by the state legislature.

The Water Resources Development Act of 2007 authorizes the expenditure of \$6.5 million in Federal funds for completion of the Oklahoma Comprehensive Water Plan. It further specifies that this effort will be completed with a 75% Federal and 25% non-Federal cost share. Upon issuance of the guidance from Corps headquarters, an agreement will be executed to support a broad general investigations study.

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## Oologah Lake Watershed Feasibility Study, Oklahoma and Kansas

Section 206, Flood Control Act 1958; Resolution adopted on May 25, 1960 by the House Committee on Public Works

### Study

The Verdigris River Basin drainage area is approximately 4,300 square miles and is located in southeastern Kansas and northeastern Oklahoma. This basin is impounded to form Oologah Lake.

The study will develop a watershed management plan with identified measures to reduce impacts of upstream activity on aquatic and terrestrial habitat within the basin. Upstream development has adversely affected the water quality at Oologah Lake which is a water supply source for the city of Tulsa.

In 2007, efforts focused on alternative modeling, calibrating the lake model and gathering data. We began a detailed institutional analysis which is a tremendous collaborative effort with other Federal, state and local agencies. In 2008, funds are being used to complete the institutional analysis, appendices to watershed management plan and the first draft of the plan. Multi-state and local meetings have been a major effort in 2008. Data gathering and modeling will continue throughout the study at the request of the sponsor.

In 2009, the first draft of the watershed management plan will be released. This study enjoys a tremendous following and an extensive review is expected. We will also conduct an in-progress review

with our headquarters. Dependent on Federal funding, the study should be complete in 2010.

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## Sand Creek Ecosystem Restoration Project, Newton, Kansas

Section 1135 of Water Resources Development Act of 1986, as amended (Continuing Authority - Habitat Restoration)

### Pre-Construction Engineering & Design

The Sand Creek Ecosystem Restoration Project focuses on improvements along Sand Creek within the city limits of Newton, Kansas. The Sand Creek Local Flood Protection Project was completed by the Corps of Engineers in April 1967.

The proposed project will focus on improvements to the riparian stream corridor habitat that was impaired when the original flood control project was constructed.

On January 30, 2008, the Sand Creek construction contract was awarded to Utility Contractors, Wichita, Kansas, for \$10,371,766. Remaining efforts, in fiscal years 2008 and 2009, will be focused on project construction.

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## Spavinaw Lake Watershed Feasibility Study

Section 208, Flood Control Act of 1965 (Public Law 89-298)

### Study

Spavinaw Creek, and its downstream impoundments - Eucha and Spavinaw Lakes, is severely impacted by nutrient loading and excessive algae growth as a result of agricultural practices in Arkansas and Oklahoma. Degradation of water quality has led to taste and odor problems, increased treatment costs, and the lakes' decreased recreational and aesthetic value. Together, Spavinaw and Eucha Lakes provide 47% of the water supply for the Tulsa metropolitan area. The Tulsa Metropolitan Utility Authority entered into the feasibility cost-share agreement in June 2004.

Because of extensive ecosystem restoration work being done by the poultry industry in the watershed, this study is focused on in-lake solutions. In fiscal year 2008, we continued with alternative analysis. This included identifying and contracting with engineering experts to help with the analysis. With alternatives clearly identified, environmental analysis also began. An alternative formulation briefing package was sent to our headquarters. This represents a major milestone in the study and is designed to gain policy review and headquarters concurrence with the selected alternative.

In 2008, the team will complete all studies and the report will be completed in 2009.

## Webbers Falls Powerhouse Major Rehabilitation, Oklahoma

River & Harbor Act, approved July 24, 1946; Project Document HD 758, 79th Congress, 2d Session

### Under Construction

The run-of-river power plant contains three 23,000 kilowatt (kW) inclined-axis Kaplan-type generating units with a total rated generating capacity of 60,000 kW. These turbines were the first tube turbines of this magnitude ever built and placed in operation. As a result, the design did not consider all of the factors specific to the operation of slant-axis turbines and, consequently, the project

has been plagued with mechanical reliability problems during its operation. Currently, one turbine is non-operational; the two remaining units will continue to fail regularly until they can no longer generate power. The major rehabilitation project will replace all three turbines resulting in \$1.32 million of net benefits per month to the nation. In addition to rehabbing the turbines, the cranes will be rehabbed, the generators will be rewound and turbine governors will be upgraded which will increase the capacity of the plant by 8.5%.

In February 2001, the Corps of Engineers Hydroelectric Design Center (HDC) recommended that the Ozark and Webbers Falls turbine replacements be combined into one contract for a savings of over \$5 million to the government and power customers. The Webbers Falls Turbine Replacement contract was subsequently included in the Ozark con-

tract as an option and awarded May 3, 2005.

The Webbers Falls Powerhouse Rehabilitation project's current cost is \$69.2 million with a scheduled completion date of December 2012.

Fiscal year 2008 activities include the award of the three turbine runners for \$39.1 million as well as the turbine and generator bay bridge crane rehabilitation contracts for \$2.3 million all funded by customer funding sub agreements. Specific fiscal year 2008 activities include rehabbing the existing turbine and generator bay bridge cranes, and fabrication of the turbine runner, stub shaft and wicket gate assembly. Scheduled fiscal year 2009 activities include completion of the bridge crane contracts as well as disassembly of the turbine runner and wicket gate assembly for unit 3.



Brigadier General Kendall P. Cox, Southwestern Division Commander, inspects plans for Webbers Falls turbine replacement.

# Red River Basin

## Bowie County Levee

Energy and Water Development Appropriation Act of 2001 and 2002

Pre-Construction Engineering & Design

The Bowie County Levee is located near Texarkana, Texas, in Bowie County, Texas. The existing levee is 8.8 miles long and was built in 1913. The locally preferred plan, known as Alternative B, is the plan which will be constructed.

This plan consists of restoring 6.0 miles of existing levee, constructing 4.0 miles of new levee, and constructing 1.4 miles of channel to divert Barkman Creek flows to the Red River.

In fiscal year 2008, the Regional Variance, which allows vegetation to remain on the river side of the levee, was revised and approved by the Corps and the sponsor. Additionally, revisions to the mitigation plan were requested by the sponsor. These revisions are under evaluation to determine the impact to the mitigation plan and the Environmental Assessment. The Project Cooperation Agreement (PAC) should be approved in fiscal year 2009. This report will serve as the project decision document and, therefore, the basis for drafting the PCA. The PCA will be submitted late in fiscal year 2009. Approval of the PCA should come late in fiscal year 2010. This will clear the way for the sponsor to begin real estate acquisition during fiscal year 2011 and complete in fiscal year 2012. Upon completion of the real estate acquisition, a construction contract can be awarded and construction can begin.

## Denison Land Conveyance

Water Resources Development Act of 2007

The Water Resources Development Act of 2007 authorized the Secretary of the Army to convey to the city of Denison up to 900 acres of lands at Lake Texoma, which were included in a 2005

lease application. The conveyance is to be at fair market value and is subject to completion of NEPA documentation and other real estate requirements such as survey and appraisal. All costs are to be funded by the city.

Preparation of an Environmental Impact Statement was published in the Federal Register in early August 2008. A public meeting is scheduled for September 11, 2008.

## Kemp Lake Reallocation Study

Water Resources Development Act of 1986

Study

Lake Kemp is located on the Wichita River at river mile 126.7 in Baylor County, Texas. Lake Kemp was originally constructed in 1924 by the Wichita County Water Improvement District #1. The lake was constructed for the primary purposes of irrigation, water supply, and related uses.

The reallocation study is being conducted with the Texas Water

Development Board in conjunction with the Wichita County Water Improvement District #2 and the city of Wichita Falls. In 2007, the District awarded a contract to conduct a cultural resource study and a sedimentation study.

In 2008, we will complete the hydraulic and hydrology studies and begin the structural and geotechnical studies. Economic studies will begin in 2008 and will be complete in first quarter 2009.

The project is operated and maintained by the Wichita County Water Improvement District #2 and the city of Wichita Falls, Texas.

During the design and reconstruction of Lake Kemp, sedimentation was a key consideration. Design Memorandum No. 1 recommended raising the conservation pool after 40 years of operation to recover conservation storage lost to sedimentation. The latest sedimentation survey performed at Lake Kemp was in 1973, and it indicated an expected high level of sedimentation. In recent years during drought conditions, the upper portions of Lake Kemp appear severely impacted by sedimentation.



Congressman Ralph Hall and Colonel Anthony Funkhouser participate in Denison Land Conveyance kickoff meeting.

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## Mangum Geotechnical Study

Section 22 of the 1974 Water Resources Development Act

### Study

Phase VI of the Mangum Lake Geotechnical Study will focus primarily on cost estimates for the preferred dam alignment. We will also drill one bore hole and develop a piezometer at the site. Funding caused a delay of this phase, but it is expected to restart this fiscal year. The recently completed Phase V study was comprised of a geotechnical investigation and stream loss study of the proposed dam site near Mangum, Okla. The Oklahoma Water Resources Board was the cost-share partner.

Foundation conditions at the proposed Mangum Dam site, 2 miles southwest of Mangum on the Salt Fork of the Red River, appear to be favorable. Complex geology and karstic conditions impose limits on elevation, size and capacity of the reservoir. While the proposed dam site was proven feasible, the elevation needs to be 1550 feet (mean sea level) for structural stability rather than the locally preferred 1560 feet. The difference in elevation reduces the acre feet of storage by half.

Further study could be focused on additional characterization of foundation conditions, hydrogeology and water loss.

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## Red River Basin Chloride Control Project

This project was authorized for construction by the Flood Control Act of 1966, approved November 7, 1966, Public Law 89-789, SD 110; as modified by the Flood Control Act approved December 31, 1970, Public Law 91-611; and as amended by the Water Resources Development Acts of 1974 and 1976. The Water Resources Development Act of 1986, Public Law 99-662, amended the above authorization to separate the overall project into the Arkansas River Basin and the Red River Basin and authorized the Red River Basin for construction subject to a favorable report by a review panel on the performance of Area VIII. Section 3136 of the Water Resources Development Act of 2007 reaffirmed that operation and maintenance responsibilities would be at full Federal expense.

### Under Construction

The Red River Chloride Control Project is authorized to identify and implement measures to reduce naturally occurring brine emissions into several sub-basins within the Red River Basin in northern Texas and southern Oklahoma. The project's primary purpose is to improve water quality for municipal, industrial, and agricultural uses along the Red River within Oklahoma, Texas, Arkansas and Louisiana.

Improvements include construction of low-flow dams, pump stations, and diversion pipelines to impoundment facilities. This project is a select major water strategy of the 2007 Texas Water Plan for the region and the state of Oklahoma has expressed a renewed interest in the Area VI element of the Red River project and reevaluation efforts are underway. Area VI is located on the Elm Fork of the North Fork of the Red River in Harmon County, Okla.

Portions of the Wichita River Basin Chloride Control element, located in northwest Texas, have been constructed and have been in operation since 1987. Features completed and in operation include two low-flow collection dams, a pump station and diversion pipeline to the Truscott Brine Disposal Reservoir.

Recently, construction efforts had been placed on hold until a cost-sharing partner was identified to assume the operation and maintenance responsibili-

ties. However, passage of Section 3136 of the Water Resources Development Act of 2007 reaffirmed that operation and maintenance responsibilities would be at full Federal expense. Pending sufficient Federal funding, construction efforts will resume.

Fiscal year 2008 efforts are focused on completion of contract plans and specifications at Area VII in Texas and continued reevaluation efforts for Area VI within the Elm Fork Basin in Oklahoma. In addition, detailed baseline environmental monitoring activities are continuing.

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## Southeast Oklahoma Water Resource Study

1983 Supplemental Appropriation Act (PL 98-63)

### Study

This study has been reinitiated to support the Oklahoma Comprehensive Water Plan (OCWP). The Oklahoma Water Resources Board is the sponsor. This is one of three studies that will result in development of watershed management plans. These plans will be integrated into the OCWP. In 2008, study focus will be on infrastructure assessment, a water demand study, and a GIS pilot program.

In 2009, the water demand study will be completed and an assessment of the existing sources will begin. An analysis of gaps in the sources of water will be analyzed and the formulation of alternatives will begin. This study is scheduled to complete in 2012.

## Texoma Reallocation Study

Water Resources Development Act of 1986

Study

The Water Resources Development Act of 1986 authorized the Assistant Secretary of the Army for Civil Works to reallocate 300,000 acre-feet of storage from hydropower to water supply storage at Lake Texoma. The law specified that 150,000 acre-feet of storage would go to Texas and Oklahoma with 50,000 acre-feet of the Texas total going to the Greater Texoma Utility Authority. The North Texas Municipal Water District (NTMWD) has expressed an interest in the remaining Texas storage.

The draft final report recommends the reallocation of 300,000 acre-feet from hydropower to water supply. Water supply agreements for 105,000 acre-feet were sent with the report for

review. Comments from Corps headquarters recommended negotiation with Southwestern Power Administration to find agreement on hydropower compensation calculations. These negotiations are currently underway. It is the team's objective to have the report approved and contracts signed this calendar year.

## Washita Feasibility Study

Red River and Tributaries above Denison Dam, Texas, Oklahoma, and New Mexico, House Resolution dated February 25, 1938; Senate Resolutions dated February 18, 1954 and June 19, 1962

Study

The Washita River is a tributary to the Red River in Oklahoma and flows into Lake Texoma. The Oklahoma Water Resources Board signed the feasibility cost-share agreement in June of 2008. It

was fully executed by the Commander in July 2008. This study is one of three that is being integrated into the Oklahoma Comprehensive Water Plan.

In 2008, the feasibility cost-share agreement will be executed, an infrastructure assessment will be mailed to municipalities and rural water districts and a detailed water demand assessment will begin.

In 2009, the infrastructure and water demand assessments will be completed and water supply assessment will begin. Infrastructure data will be integrated into the GIS database.

This study is scheduled for completion in 2012.

For updated project information, access our web site at:

<http://www.swt.usace.army.mil>  
or call 918-669-7366

