



U.S. Army Corps
of Engineers®

Tulsa District Project Update



Only foundations remain at homesites that have been cleared of debris in Joplin, Missouri, after the May 2011 tornado.

Tulsa District's Emergency Response

William Smiley

Chief, Emergency Management and Security
Office, Tulsa District

Calendar year 2011 has proven to be one of the most expensive federal response years ever.

Thousands of USACE team members have responded to the call for assistance over the central and eastern part of the country. Working alongside the Department of Homeland Security (DHS) and the Federal Emergency

Management Agency (FEMA), the U.S. Army Corps of Engineers is engaged in approximately one-half billion dollars in emergency response work for 2011. Four very large response operations are simultaneously under way: South Dakota flooding; Mississippi and Louisiana flooding; Alabama tornadoes, and Joplin tornadoes.

When the Alabama and Joplin tornadoes struck, the Tulsa District rose to the occasion. For the Alabama tornadoes, the Tulsa District sent two Englink Strike Team members to assist with entering mission data into the USACE Emergency Engineering System known as Englink. Tulsa District also sent a public affairs specialist to cover the story and to

continued on page 3

District Commander's Perspective

The diversity of Tulsa District's missions and programs, as well as the large number of challenges and opportunities to excel, continues to amaze me. Since the February 2011 issue of the *Project Update*, we have successfully completed all of the BRAC projects, managed the spring storms, including record pool levels at Tenkiller Lake and a direct hit from a tornado at one of our parks at Canton Lake, worked through the blue-green algae blooms of this summer, and prepared for a drought. Pretty diverse!

This past spring, the Corps held flood waters for an unusually long period of time as we managed the system of reservoirs to help reduce the crest of flood waters along the Arkansas River as well as on the Mississippi River during these record floods. The coordination between Tulsa District, the National Weather Service, and the U.S. Geological Service in managing flood waters is impressive. Releasing water from Oklahoma so it would reach the Mississippi River ahead of the flooding in that river valley reduced the surge heading to the Gulf of Mexico. When the surge of water from the upper Mississippi flooded the valley, we were then able to hold water later in the spring.

As tough as floods are, it is easier to manage flood waters than it is to manage a drought. But that is exactly where we find ourselves today. Much of Kansas, Oklahoma, and Texas are now in extreme drought conditions. Several Tulsa District lakes have 75 percent or less of the conservation storage remaining. Demand for consumptive use of water for water supply and hydropower is increasing with the extreme heat this summer. Plus, water quality has become a major issue as blue-green algae has forced the closure of some lakes and required advisories on others. Low flows, water temperature, and dissolved oxygen levels have impacted, or threatened to impact, trout fisheries, striped bass, and endangered species of mussels. We have already started our Corps Drought Management Committee meetings, and will soon stand up the Interagency Drought Management Committee to bring all of the federal and state agencies together to work through the best use of our precious water resources.

In this issue, we highlight the District's support in helping to return the tornado stricken Joplin area to normal. We were also privileged to have the Honorable Jo Ellen Darcy, Assistant Secretary of the Army for Civil Works, visit our District in June, making visits to John Redmond Dam in Kansas and Oologah Lake and the Webbers Falls Hydropower Rehabilitation Project in Oklahoma. Ms. Darcy met with several of our key stakeholders in Kansas including Governor Sam Brownback, State Representative Tom Sloan, and Mr. Tracy Streeter of the Kansas Water Office. During the visit to Oklahoma, Ms. Darcy met with Mr. Michael Lee from Senator James M. Inhofe's office, Ms. Connie Pearson from Senator Tom Coburn's office, Mr. Ben Robinson from Representative Dan Boren's office, Mr. J.D. Strong of the Oklahoma Water Resources Board, Mr. Jon Worthington of Southwestern Power Administration, Mr. Ron Bowen of Jonesboro Power and Light, Mr. Ted Combes of Southwestern Power Resource Association, and Ms. Deby Snodgrass of the Oklahoma Tourism and Recreation Department. We capped off the visit with a joint dinner between the Tulsa and Little Rock Districts and our navigation stakeholders.



Colonel Michael Teague
Commander, Tulsa District

See Commander's Perspective, page 11

USACE Commander's Vision

A GREAT engineering force of highly disciplined people working with our partners through disciplined thought and action to deliver innovative and sustainable solutions to the Nation's engineering challenges.

Mission:

Provide vital public engineering services in peace and war to strengthen our Nation's security, energize the economy, and reduce risks from disasters.

Commander's Intent:

The U.S. Army Corps of Engineers will become a GREAT organization as evidenced by the following in all mission areas:

- Delivers Superior Performance;
- Sets the standard for our profession;
- Makes a positive impact on the Nation and other nations;
- Is built to last as evidenced by our strong "bench" - educated, trained, competent, experienced, and certified.

We will deliver superior performance through disciplined people, thought, and action. We will use the Campaign Plan as a component of our Corporate Strategic Management Process to establish our command priorities, focus our transformation initiatives, measure and guide our progress, and adapt to the needs of the future.

We will align and synchronize our work throughout the Corps and make deliberate and informed corporate decisions on the best use of our resources. If any requirements outside the Campaign Plan arise, we will make a corporate decision to either divert resources or incorporate new objectives and adjust work priorities as necessary.

My 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!"



U.S. Army Corps
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preserve and record the response efforts. The debris mission in Alabama will likely result in approximately three million cubic yards of debris removed by mission end.

Following the Joplin tornadoes, Tulsa District took on the lead role as the initial responder and response pacesetter. Within three days of the tornado strike, the District provided 10 quality assurance specialists to the Regional Field Office in Joplin.

Tulsa was the first team into the impacted area to begin debris operations with the assistance of the Advance Contract



Lynn Jefferies, quality assurance representative, U.S. Army Corps of Engineers, talks with a contractor while supervising debris clearing from a home that was destroyed after an EF-5 tornado struck Joplin, Mo., May 22. The debris removal mission includes clearing the right of way (10 feet from the curb) and right of entry homes, which the property owner or the city has given the Corps the right to go onto the property to clear debris. The Corps is responsible for clearing more than 1,400 properties.



Initiatives, which provided emergency contracts to pick up and haul away debris. Shortly thereafter, most of the debris was being hauled away by local contractors providing a needed boost to the local economy.

The Tulsa District also provided the first on-scene assistant team leader who stayed for more than 60 days to organize and execute the debris and housing missions for the Joplin response. Additional team members who deployed to Joplin were an Enlink Strike Force team member and a public affairs specialist.

At the time of this article, the debris mission had removed approximately 1.1 million cubic yards of debris. Under the Critical Public Infrastructure portion of this mission, USACE has installed nine temporary schools, including the new high school, and other critical public facilities such as fire stations and storm shelters. Tulsa was also at the tip of the sword for the housing mission, which entailed installation of more than 300 temporary housing units. The Joplin Mission Assignment stands at \$236,740,000.

MG Merdith W. B. "Bo" Temple, Acting Chief of Engineers and Acting Commanding General of USACE, surveys the expedited debris removal area July 19. It's estimated that more than 6,900 homes were destroyed and an additional 875 damaged when an EF-5 tornado struck Joplin, Missouri, on May 22, 2011.

ASA(CW) Jo Ellen Darcy Visits SWT

The Assistant Secretary of the Army for Civil Works, the Honorable Jo Ellen Darcy visited Tulsa District on June 7 and 8, 2011.

The visit was prompted by two significant water resource initiatives in the Southwestern region. The first was the result of the Tri-State Water Summit held in Norman, Oklahoma, in January 2011, which included the Oklahoma Water Resources Board, Texas Water Development Board, and Kansas Water Office. Representatives from U.S. Army Corps of Engineers Headquarters, Southwestern and Northwestern Divisions and Tulsa, Fort Worth and Kansas City Districts also attended.

Through those discussions, two fundamental concerns were voiced from the States regarding the Corps ability to effectively partner with them to address the region's water needs: the relevance and reliability of Corps assistance through our current authorities and procedures, and prioritization of the water supply mission.

The second initiative was brought about by our hydropower stakeholders, particularly Jon Worthington, Administrator of the Department of Energy, Southwestern Power Administration (SPA), Ted Coombes, Executive Director of the Southwest Power Resource Association (SPRA), and Ron Bowen, Director of Jonesboro Power and Light. Due to the success of the customer-funded hydropower rehabilitation project at Webbers Falls, Oklahoma, through the "Jonesboro Agreement" and numerous other customer-funded repairs at Corps projects throughout SPA's region, SPA and SPRA have proposed a 30-year, customer-funded hydropower modernization initiative for Corps hydropower projects.

With this background on exciting water resource projects that are ongoing in our area, Ms. Darcy enjoyed two days packed with visits and information that are highlighted below.

Water Supply

Ms. Darcy began her whirlwind tour in Kansas, touring projects in both the Kansas City and Tulsa Districts, including John Redmond Dam in Tulsa District. Kansas Governor Sam Brownback, Kansas State Representative Tom Sloan and Kansas Water Office Director Tracy Streater stressed several challenges of the Corps in providing relevant and reliable assistance to our State partners in ensuring sustainable water supplies for an ever-growing population. Two-thirds of the water supply in Kansas comes from federal reservoirs, and storage continues to diminish due to sedimentation in the reservoirs.

The theme of water supply as a key water resource planning issue in this region continued as Ms. Darcy traveled to Tulsa, Oklahoma, where she met with Oklahoma Water Resource Board Executive Director J.D. Strong, Senator Jim Inhofe's field representative Michael Lee, Senator Tom Coburn's field representative Connie Pearson, and Congressman Dan Boren's District Director Ben Robinson. Tulsa District is partnering with the State of Oklahoma in preparing the Oklahoma Comprehensive Water Plan, which develops holistic and sustainable solutions for Oklahoma's water needs. Corps reservoirs play an important role in the present and future water supply needs in Oklahoma.

America's Great Outdoors

A visit to Oologah Lake followed the Oklahoma stakeholder meeting to view one of Tulsa District's 38 reservoirs, 30 of which have water supply storage, including Oologah. There, Ms. Darcy was thrilled to see President Obama's initiative, America's Great Outdoors, in action. While touring the lake, Ms. Darcy was met at



Ms. Darcy visiting with a volunteer at Oologah Lake.



Back at Tulsa District, Ms. Darcy visits with J. D. Strong, Executive Director, Oklahoma Water Resources Board.



Deby Snodgrass, Director of Oklahoma Tourism and Recreation, COL Teague, and Ms. Darcy.

Continued on page 5, ASA Visit



Ms. Darcy visits with a Boy Scout working on an Eagle Scout project at Oologah Lake.

the Skull Hollow trail head by volunteers and Eagle Scouts working on a project to improve the appearance of the trail. The goals of the America's Great Outdoors initiative are to promote, conserve, and restore America's Great Outdoors and to encourage America's youth to embrace and protect our vital natural resources. Fittingly, a group of local Girl Scouts were picnicking in the area at the time, and gave Ms. Darcy an impromptu serenade by singing, "You're a Grand Old Flag."

Recreation

Oklahoma Tourism and Recreation Department (OTRD) Director Deby Snodgrass joined the entourage at Oologah Lake. Ms. Snodgrass discussed the rapidly developing positive relationship with Tulsa District, including the initiative of OTRD collecting contributed funds to enable completion of the Lake Eufaula Environmental Impact Statement, which is required for an update of the Shoreline Management Plan. Ms. Snodgrass is also partnering

with the district for a Lake Texoma land conveyance to the State of Oklahoma and implementation of Section 3134 of the Water Resources Development Act of 2007 that is intended to identify innovative solutions for increased public recreation opportunities.

Hydropower

Ms. Darcy was also able to visit the Webbers Falls Major Rehabilitation Project where she met with key stakeholders, Mr. Jon Worthington, Administrator of the Department of Energy Southwestern Power Administration; Mr. Ted Coombes, Executive Director of the Southwestern Power Resource Association; and Mr. Ron Bowen, Director of Jonesboro Power and Light. Ms. Darcy received a briefing on how the Jonesboro Memorandum of Agreement worked to fund the Webbers Falls Major Rehabilitation project and how it could be the funding source for the modernization initiative in our region.

Navigation

Tulsa District's portion of the Secretary Darcy tour concluded with a joint Tulsa/Little Rock District meeting with McClellan-Kerr Arkansas River Navigation System stakeholders. The meeting was arranged and hosted by Mr. Bob Portiss of the Port of Catoosa. Discussions included the economic importance of the environmentally friendly navigation system to this region. Initiatives included the future deepening and widening of the system and potential contributed funds to maintain continued reliable service during challenging budgetary periods.

A lot of ground (physically and informational) was covered in two days. Following her visit to Tulsa District, Ms. Darcy did have one regret, "This has really been too short a visit to the hidden jewel of the Corps."



Howard Davidson briefs Ms. Darcy during her tour of Webbers Falls Power Plant. In back, from left, Ron Bowen, President, Arkansas Municipal Power Association, and Jon Worthington, Administrator, Southwestern Power Administration.

District responds to blue-green algae

The extreme hot, dry temperatures throughout the Southwest have caused an outbreak of blue-green algae in nine Tulsa District lakes.

The Corps has confirmed blue-green algae in Keystone, Fort Gibson, Skiatook, Tenkiller, Waurika, Texoma, and Eufaula lakes in Oklahoma and Pearson-Skubitz Big Hill Lake and Marion Reservoir in Kansas.

Blue-green algae are a phylum of bacteria called cyanobacteria that obtains energy from photosynthesis. While blue-green algae exist in most surface waters, excessive blooms are typically caused by elevated nutrients in lake water, calm and hot weather conditions, and a lack of reservoir inflows/outflows that, under normal years, provide for flushing of excessive nutrients and algae from a lake. There are several different strains of the bacteria, some of which produce toxins that can be harmful to humans and pets. Because of the possibility for adverse health risks at higher concentrations, including gastrointestinal illness, respiratory symptoms, skin and eye irritation, and, in rare cases, even death, the Corps of Engineers issued lake-wide advisories and, in some areas of affected lakes, warnings and area closures.

The advisories, warnings, and area closures are based on recommendations and guidelines from the World Health Organization (WHO).

This has been an unusual year for blue-green algae blooms in Oklahoma lakes. There are a few lakes with a history of blooms, however, not to the severity and not in as many lakes simultaneously as is being experienced this year. In Kansas, the blooms are more common. Marion Reservoir, for example, has had blue-green algae blooms each year since 2003.

The Kansas Department of Health and Environment (KDHE) has an established policy for blue-green algae, and the Corps of Engineers follows



Typical sighting of blue-green algae.

their policy for Tulsa District lakes in Kansas. The Oklahoma Department of Environmental Quality does not have an established policy for blue-green algae, so the Corps has adopted, in part, the KDHE policy and signage with the concurrence of Oklahoma Department of Environmental Quality.

The Corps of Engineers is continuously adapting and improving the way it responds to blue-green algae blooms. Typically, when an algae bloom is reported by a member of the public, a park ranger or environmental specialist will go to the area where it was reported for a visual confirmation. Once it is located, water sampling and testing will be performed. When results are received, the Corps makes its recommendation for advisory, warning, or closure based on the cell counts documented in the results.

After tests have confirmed the presence of the algae that exceeds a level that could present a risk to health according to the WHO guidelines, a lake-wide advisory is issued. Under an advisory, all Corps boat ramps, public use areas, swim

beaches, and access points are posted with advisory signs that discourage water contact. If an area is determined to have levels present that exceed the moderate risk to adverse health effects, that area will be posted with warning signs stating that water contact is prohibited. In some cases, areas are closed due to the blue-green algae concentration. At some of the affected lakes in Oklahoma, the lake manager has made the decision to close swim beaches as a precautionary measure.

In addition to the signs posted at affected lakes, the Corps has used social media and traditional media to educate the public on the risks associated with blue-green algae. There has been a tremendous amount of public interest, and the Corps regularly responds to public and media inquiries.

The Corps will continue to monitor the affected lakes and respond to any new reports of blooms. Follow-up testing will be completed to determine if the advisories, warnings, and closures can be lifted or need to be adjusted.



Tenkiller Lake releases 13,000 cfs

Due to heavy spring rainfall in the area, Tenkiller Lake flood pool nearly filled, and the U.S. Army Corps of Engineers, Tulsa District, released water at the rate of 13,000 cubic feet per second through the main spillway gates and hydropower. These releases brought the downstream channel to full capacity. The water did not rise above the channel.

COL Michael Teague, Tulsa District Commander, hosted an information meeting for elected officials and governmental agencies to discuss the releases that were being made at Tenkiller Lake.

Corps personnel monitored the lake around the clock. Individuals downstream of the dam followed guidance from local emergency officials.



Webbers Falls Powerhouse visited

Ms. Murphie Barrett and Mr. Kyle Miller from the United States Senate Committee on Environment and Public Works visited the Webbers Falls Powerhouse on March 24, 2011. Ms. Barrett and Mr. Miller were shown the operations and work that is presently being done within the total rehabilitation project, and then toured the unit being rehabilitated. Representatives from Southwestern Power Administration were present and presented their philosophy and overview of their system operations along with an outlook and history regarding the Jonesboro Agreement that is currently funding the rehabilitation work at Webbers Falls.



From left, Ms. Murphie Barrett, Mr. Kyle Miller, and Mr. Ken Lehman

Tulsa District's Focus on Listening

Pine Creek meeting held in May

COL Michael Teague held a Pine Creek listening session for residents of the communities around Pine Creek Dam on May 17, 2011. Pine Creek Dam has seepage issues along the outlet works conduit that were significant enough to cause the Corps to eliminate the 4.5 foot seasonal pool this summer, leaving the pool below normal levels for this time of year.

Additional investigation necessitated lowering the lake level again -- to five feet below the top of the conservation pool, potentially impacting project purposes of flood risk management, water supply, water quality, recreation, and fish and wildlife.

Pine Creek Dam was reclassified from *very high risk* to *extremely high risk* status on April 18, 2011.



USACE representatives and members of the public study flood inundation maps at the public meeting held at Valliant, Oklahoma, regarding the Pine Creek Dam Safety project.





Amarillo Armed Forces Reserve Center

The construction of the Amarillo Armed Forces Reserve Center started with the contract award on July 13, 2009, and was completed on August 15, 2011. This center includes classrooms, an Operational Maintenance Shop, and a storage building.

Annual workshop held at Altus

On March 3 and 4, COL Teague hosted the annual Base Civil Engineer/Director of Public Works (BCE-DPW) Workshop at Altus Air Force Base. Attendees included the BCEs and DPWs from Altus AFB, Fort Sill, and Tinker AFB along with the Environmental Chief from Fort Sill and the Program Manager of MILCON Design and Construction from the Air Force Center for Engineering and the Environment.

At this year's workshop, participants focused on energy sustainability initiatives, Corps of Engineers contracting updates, and sharing initiatives, challenges and opportunities. Altus Air Force Base personnel provided the group with a tour of the base and C-17 simulator.



Mr. Dan Johnson, Area Engineer for Central Oklahoma Area Office, and Ms. Cathy Scheirman, Deputy Base Civil Engineer, Tinker Air Force Base



COL Teague and Mr. Patrick Beard, Chief, Military Branch, participate in the tour of the C-17 Simulator



Mr. Bron Howard, Program Manager for Altus AFB, and Ms. Lori Hunninghake, Tulsa District's Stakeholder Relationship Manager

Ribbon Cuttings

Altus Air Force Base

New DASR/RAPCON facility unveiled

Col. Jon T. Thomas, 97th Air Mobility Wing commander, and Sen. James Inhofe, R-Okla., cut the ribbon for the opening of the new Digital Airport Surveillance Radar (DASR)/Radar Approach Control (RAPCON) facility on April 19. The new RAPCON is replacing the 50-year-old facility at Altus Air Force Base, providing sufficient space for the new radar system and alleviating crowded working conditions for air traffic controllers.

The new DASR replaces a 1970s-era radar system and has the capability of interfacing with similar radar systems at other local military installations and air traffic control centers throughout the Federal Aviation Administration's southwest Oklahoma region.



Col. Jon Thomas and Sen. James Inhofe cutting the ribbon for the DASR/RAPCON facility. (U.S. Air Force photo by Airman 1st Class Christopher Toon/97th Air Mobility Wing-Public Affairs)

enemy insurgents. When another Soldier was wounded, SFC Monti attempted to rescue him, but was killed in action.



Rendering of JFETS facility

Vance Air Force Base

A ribbon cutting was held at the Armed Forces Reserve Center (AFRC) at Vance Air Force Base, Oklahoma. This facility is the sixth of the seven to open. The other AFRCs now operate at Fort Sill, Muskogee, Mustang, Norman, and McAlester. The final AFRC will open later this year in Broken Arrow.

The new AFRC is nearly 68,000 square feet and cost approximately \$20 million. The facility includes offices, classrooms, storage and maintenance areas, as well as a dining facility and weapons simulator training areas. Ground was broken in June 2009. The prime contractor was TCI Construction of LaCrosse, Wisconsin, which did the work with the help of local and state sub-contractors, overseen by the U.S. Army Corps of Engineers.



DASR/RAPCON Facility

Fort Sill

On August 19, 2011, a ribbon cutting was held for the Joint Fires and Effects Trainer System (JFETS) at Fort Sill, Oklahoma. The JFETS facility will be used as a high-tech training system that incorporates real-time, photo-realistic graphics, surround sound, and artificial intelligence.

Prior to the ribbon cutting, a dedication ceremony in honor of Sgt 1st Class Jared C. Monti was held. SFC Monti, Fire Support Team Leader, was a Soldier in the U.S. Army who received the military's highest decoration for valor, the Medal of Honor, for his actions in Afghanistan. SFC Monti was deployed with his unit when they were attacked by a group of



From left, COL Russell Mack, Commander, 71st Flying Training Wing; MG Myles Deering, Adjutant General for the Oklahoma Army and Air National Guard; BG Tracy Thompson, Commander, Army Reserve 420th Engineer Brigade; and BG Jon Lee, Commanding General, 63rd Regional Support Command.

BG Kula visits McAlester Army Ammunition Plant



Corps of Engineers Southwestern Division Commander BG Thomas Kula met with McAlester Army Ammunition Plant Commander COL Timothy Beckner and Director of Public Works Terry Wafford on July 5, 2011. BG Kula toured the bomb production (Group Technology Center), ammunition and missile maintenance and renovation, storage/distribution, and demilitarization of obsolete or unserviceable ammunition. During the tour, BG Kula viewed the progress of the current 18-20 AT Pad Project and the current rail project.



Mr. Clif Warren, Mr. John Roberts, BG Kula, and COL Beckman, McAlester commander, discussed the benefits of combined McAlester Army Ammunition Plant and contractor construction efforts with McAlester Army Ammunition Plant staff.

Commander's Perspective from page 2

While most of the public associates Tulsa District with the Civil Works program, in this issue we share some of the work being performed for our military mission in support of Fort Sill, McAlester Army Ammunition Plant, and Tinker, Altus, Sheppard, and Vance Air Force Bases. The military mission accounts for about two-thirds to three-fourths of Tulsa District's total program each year. In addition, Tulsa District provides support to Overseas Contingency Operations in Iraq and Afghanistan with civilian volunteers, and also provides assets to other Districts and agencies.

Although we face uncertain times for future budgets due to national priorities, we remain flexible and committed to maintaining the valuable water resource infrastructure in a serviceable condition, and providing the best possible services to the public, military and civil works teammates.

Essays!

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!*





- How Do I... » Contact the Corps? » Find a hunting map? » Get a Regulatory permit? » Find lake levels?
- » Get a job with the Corps? » Find a recreation area? » Submit a FOIA request? » Make a public comment?
- » Contract with the Corps? » Get a discount card? » Buy an annual day use pass? » Find Lake Conditions?

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- CIVIL WORKS BOUNDARY MAP
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Engineer Update
(HQ Newsletter)

April-June 2011 Pacesetter

eNews from the Tulsa District View Past eNews

- News Releases**
- Aug 30 [Blue-green algae update](#)
 - Aug 29 [Lake Texoma in drought management mode](#)
 - Aug 26 [Blue-green algae update](#)
 - Aug 22 [Blue-green algae update](#)
 - Aug 18 [Sedimentation bridge affecting lake level monitoring at Great Salt Plains Lake](#)


[Blue-green algae update, Aug. 30, 2011, printable files at this link](#)

The U.S. Army Corps of Engineers, Tulsa District, has revised its blue-green algae matrix to reflect the latest test results from Lake Texoma. [It is available at this link.](#) In accordance with the federal Centers for Disease Control and Prevention (CDC) Harmful Blue-Green Algae Guidelines, ALL of Lake Texoma is now under a blue-green algae WARNING, and water contact ... [more](#)

[Lake Texoma added to list Aug. 26, printable files at this link](#)

In order to provide members of the public the latest information available so that so that they are able to make informed decisions, the U.S. Army Corps of Engineers, Tulsa District, has once again updated the blue-green algae matrix. [It is available at this link.](#) The Treasure Island portion of Lake Texoma west to the mouth of the Red River including Buncombe C ... [more](#)

[Blue-green algae update, Aug. 22, 2011](#)

 In order to provide members of the public the latest information available so that so that they are able to make informed decisions, the U.S. Army Corps of Engineers, Tulsa District, has once again updated the blue-green algae matrix. Both swim beaches at Waurika Lake are CLOSED, and ALL of Waurika Lake is under a WARNING. Also, the Rocky Point Swim Beach at Fort Gibson Lake is now under a WARNING. At the WARNING level, harmful algae have been found ... [more](#)

Waurika



For updated project information, access our web site at:
<http://www.swt.usace.army.mil>
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[Review Plan - Red River Chloride Control Project, Elm Fork, Area VI General Reevaluation Report](#)
Open for Comments Until:
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Deployments



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- [Update of Current Dam Safety Activities Pine Creek Dam OK July 7 2011](#)
- [April-June 2011 Pacesetter](#)
- [Update of Current Dam Safety Activities Pine Creek Dam OK June 2 2011](#)
- [Eufaula Lake Environmental Impact Statement Public Workshop](#)

http://www.swt.usace.army.mil/[8/31/2011 2:35:38 PM]

Air Depot Gate at Tinker First MILCON to Achieve LEED Gold!

Tinker Air Force Base now boasts its first Leadership in Energy and Environmental Design (LEED) project -- and it received a Gold Rating!

On September 23, 2009, Tulsa District awarded a Design/Build project to The Ross Group Construction Corporation to realign Air Depot Boulevard, construct a new Pass and ID facility, and add a canopy to the gate house.

Beneficial Occupancy was achieved on February 4, 2011, with a final construction amount of \$4.6 million. The six-month time growth on this project was due only to unprecedented severe winter weather and government delays waiting on the Vance Gate to re-open so Air Depot Gate could be closed for construction activities.

One of the Request for Proposal requirements for this project was LEED Silver Certification. During its design and construction, the contractor's commitment resulted in a higher LEED certification. The project earned 39 points, moving the LEED certification into a Gold Rating.

The LEED certification program is an internationally recognized system for providing third-party verification that a building is both designed and built using strategies aimed at improving performance. A LEED Silver Certification requires minimum earnings of 33 points on the rating system. The categories within this rating system include sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, innovation and design process, and administrative inquiries.



New canopy at Air Depot Gate

Sheppard -- Update on ENJPT project



Above and below: Construction photos of the Sheppard AFB Operations Group Facility, which utilizes the innovative construction technique of insulated concrete forms, providing high wind resistance and increased energy savings.



Tulsa District broke ground on December 3, 2010, for the Sheppard Air Force Base Operations (OPS) Group Facility for the 80th Flying Training Wing, home to the Euro-NATO Joint Jet Pilot Training Program. The construction of this 43,486 square-foot facility is 25 percent complete. It is scheduled to be completed by May 2012. This is the first construction project at Sheppard Air Force Base to use insulated concrete forms to construct the walls.

Tulsa District's Tribal Program -- one of a kind



The State of Oklahoma has more federally-recognized Tribes than any other state -- 38. They range in size from the very small Alabama Quassarte Tribal Town of 350 members to the largest in the USA, the Cherokee Nation with 250,000 members. Tulsa District has on-going projects with both of these Tribes, and about 15 others. Tulsa District has a very unique Tribal program that no other Corps District offers.



Alabama Quassarte Tribal Town Elder Center groundbreaking

In the early 1990s, it became apparent to some granting agencies that often times Tribes, especially smaller ones, did not have the expertise to implement the projects for which they received grants. The result was substandard facilities that were undersized and over budget. Unfortunately, grant funds were often abandoned.

In order to address this issue, Tulsa District began offering technical services on a reimbursable basis through the Interagency and International Support (IIS) program. This work is authorized by the Chief's Economy Act. Compliance with this act requires that federal grant money be involved and that we have permission from the granting agency for Corps involvement. The program shows every indication of growing as we partner with new Tribes and federal agencies to meet this important Tribal need.

Today the district uses more technical disciplines than ever including civil, mechanical, and structural engineers, architects, quality assurance technicians, planners, and economists to ensure these important customers have access to expertise they need. Most technical support is for Housing and Urban Development (HUD) Indian Community Development Block Grants, but last year Tulsa District was involved in

U.S. Department of Agriculture, Bureau of Indian Affairs, Department of Energy, and the Office of Head Start grants. Popular projects include wellness centers, elder centers, community centers, child care centers and medical facilities.

To assist Tribes with grants, the Corps begin with the application process. We provide Tribes with up to seven different documents for HUD applications. We also have performed economic feasibility studies and developed alternative energy feasibility study scopes. Once grant funding is received, we assist by providing documentation necessary to put contracts in place. This includes the request for qualifications, selection committee worksheets, interview questions, and a contract the Tribes can use. After the contract is in place, we really prove our value by being on site for a minimum of 18 quality assurance inspections as distinct milestones. We also manage monthly progress meetings between the owner and contractor.

One of our most unique HUD projects began in 2010 when five Tribes from northeast Oklahoma agreed to combine almost \$5 million in grant funding to construct a multi-clinic medical facility. The collaborators intended to combine a second year of grants to fully fund the project. As the project gained momentum, the Northeastern Tribal Health System (NTHS) agreed to fund the remainder of the project. In July 2011, the NTHS awarded an \$8.5 million contract for design/build services to construct a 51,000 square-foot facility. Construction has begun, and the project should be open in 20 months. This state-of-the-art facility will provide services to any federally recognized Tribal member.



Eastern Shawnee Tribe of Oklahoma Wellness Center

Continued on page 15, Tribal



Quapaw Fire and Emergency Medical Services -- the only emergency service in the county since the Tar Creek buy out.

Through the Tribal team’s outreach efforts, we have discovered a need for Tribal master planning and water resource studies. While some of the master planning effort is funded through federal grants, Tulsa District executed two Planning Assistance to State cost-share agreements with Tribes in FY11.

The Fort Sill Apache Tribe of Oklahoma and Tulsa District executed a Planning Assistance to States agreement. It is a 12-month, \$100,000 Master Plan Study cost shared at 50 percent. Members of the Fort Sill Apache Tribe are direct descendants of about 81 Chiricahua Apache prisoners of war that were held at Fort Sill until 1913. The story of this Tribe is tragic but through their strength and perseverance, they are making great strides. It is truly our honor to serve this distinguished Tribe.



Weight room for Eastern Shawnee -- note Tribal symbol on the floor.

The Chickasaw and Choctaw Nations recognize their responsibilities to ensure current and future generations the long-term stability of their homeland’s water resources. Tulsa District was very pleased to have been chosen to partner with the Nations on a Planning Assistance to States cost-shared study. This study will appoint a panel of experts to provide guidance on developing in-stream flow methodology in the southeastern region of the state. This is a 12-month, \$120,000 study that is cost shared at 50 percent.

Another project that is holding the interest of many is the W.D. Mayo Hydropower Project. In the Water Resource Development Act of 1987, the Cherokee Nation was authorized to construct a hydropower facility at W.D. Mayo Lock and Dam. At the time, it was not economically feasible, but it is now, and the project is moving into the design phase. Tulsa District is working with the Nation and their consultants to ensure all 408 report requirements and 404 permits are fully addressed. The Cherokee Nation hopes to begin construction within the next three years.



Seneca Cayuga Wellness Center foundation work



FY11 Top 15

Tulsa District Maintenance Priorities

By making prudent use of FY09 supplemental and regular Operations and Maintenance appropriations, combined with American Recovery and Reinvestment Act funding, Tulsa District has been able to successfully address and reduce the backlog of critical maintenance and repair of its water resource infrastructure. However, the facilities continue to age.

The following are Tulsa District's top 15 FY11 priorities for critical maintenance. Critical maintenance are items that, if not performed, could result in failure of the component, resulting in potential loss of the project and the protection of downstream property and population.

As always, public safety will continue to be the primary focus as the District allocates our available resources.

1 Keystone Lake, Oklahoma

Bridge Replacement

The Keystone Lake Spillway Bridge is located at Keystone Lake in Tulsa County, Oklahoma, about 15 miles west of Tulsa, Oklahoma. The bridge carries State Highway 151 on 18 simple spans over the spillway. The existing bridge was built in 1964 and consists of two welded plate girders supporting floor beams and stringers for each 42-foot span. The existing deck is deteriorated and requires replacement.

In 2004/2005 the Oklahoma Department of Transportation performed extensive work on the deck. What was supposed to be minor deck repairs turned into a major full-depth repair. The material used to patch the deck is not concrete, so the strength or capacity of the deck can no longer be determined. The patch is also failing with cracks that allow moisture into the deck and accelerates corrosion. Due to the magnitude of the patching, the entire deck or the bridge must be replaced. Until such time, a crane will not be allowed on the bridge, which will seriously limit the ability to do emergency repairs and sluice gate inspections.

Initial engineering results (completed in December 2010) from an ongoing study included a fatigue analysis that indicated the fatigue life of the bridge had expired in 1994. Based on the final validated report, completed in February 2011, the bridge was determined to be at the end of its useful life.

In addition, the bridge deck must be replaced, which also includes retrofitting the steel to bring the bridge up to current design standards. The cost estimate of repair versus replace



is still valid; therefore, it is still more economical to pursue bridge replacement. Since the District uses most spillway bridges as a "platform" for operations, the design criteria used would be structurally more stringent than normal bridge design criteria. Design variances may be necessary to align the geometry of a new bridge along the existing spillway.

In the interim, the bridge will be load posted, and the frequency of inspection will be increased to every six months.

Status: The in-house design of the bridge is at the 35% completion milestone and is currently under review. Design completion is scheduled for February 2012.

Repair Cost Estimate: \$8.4 million



2 Kaw Lake, Oklahoma

Install Seepage Filter Blanket on Downstream Face of Dam

The 2005 Periodic Inspection indicated that there was a possible seepage issue with the dam embankment. As a result, several piezometers were installed in 2007, which, over time, have indicated that there is, in fact, seepage in the embankment that fluctuates with the pool level. This situation requires immediate repairs to ensure the safety of the embankment.

Repair Cost Estimate: \$1 million

3 Oologah Lake, Oklahoma

Repair and Replace Service Gates, Hoisting Equipment, and Low-Flow Systems

Several challenges exist at the Oologah gate tower. The bridge allowing access to the gate tower has cracked corbels that need structural analysis and repair. If the corbels fail, the bridge could collapse and no water releases could be made through the four service gates inside the gate tower structure. All four service gates have lost structural strength and the top one-third of each gate needs to be replaced. One new service gate needs to be constructed and the spare gate modified to act as a second emergency gate. (Only one emergency gate exists at the project; it will receive repairs, as well). The steel liners, air vents, and gate guides in the conduit need repair or replacement. The 48-inch, low-flow valve is inoperable and needs to be replaced. If the gate and conduit system repairs are not made, a gate failure could occur. This would result in loss of service to the navigation system and potentially disrupt water supply to the city of Tulsa and other nearby cities. The 1950s gantry crane at the gate tower installs the emergency gate and removes service gates for maintenance. Currently, the gantry crane is unreliable in its electrical operation and may not perform satisfactorily in a flood event. Due to the bridge corbel issues, a mobile crane cannot access the gate tower in the event of an emergency.

Status: A design to replace the worst service gate was completed in FY10. After further investigation, it was discovered that this gate had suffered too much corrosion to be safely converted to an emergency gate. The design includes repair of the eroded concrete within the gate liner. This design can be used to replace the three remaining gates and repair the remaining liners. Proposals were received January 12, 2011, and a contract was awarded in March of 2011 for \$1.7 million to replace Gate 4 and the wire ropes for Gate 4. Subsequent to award, the wire ropes on Gates 1 and 2 failed. Thus, Gates 3 and 4 are currently operable and Gates 1 and 2 are currently inoperable. If the contractor is allowed to take Gate 4 out of service, Gates 3 and 4 become inoperable and no releases can be made through either conduit. We have a plan in place: Fabrication of Gate 4 will pro-



ceed unimpeded. Operations will purchase the wire rope for the contractor to install. The contractor shall not mobilize until the wire rope is onsite. Funding was provided for this plan on August 10, 2011, and purchase order for the wire rope was processed on the same date. Modification for the installation was completed August 11, 2011.

Under the current funding situation, we do not anticipate being able to award any options that include replacing the low-flow valve.

Repair Cost Estimate: \$5.5 million for remaining three gates.



4 Hulah Lake, Oklahoma

Rehab Tainter Gates, Sluice Gate Bulkhead and Debris Removal

Status: The 2009 Periodic Inspection indicated that the tainter gates had critical deficiencies including rusty tainter gate chains, rusty critical areas on the tainter gates, rusty tie-back beams, and shallow spalls in piers and weirs. These gates are more than 50 years old and require immediate attention to ensure the gate system does not further deteriorate. A \$960,000 contract for partial repair has been awarded for replacing the tainter gate chains. A modification to that contract is currently being pursued to rehabilitate the tainter brake drums. If additional funding is not available, this will result in increased future costs and the increased probability of structural failure.

Repair Cost Estimate: \$5.3 million

5 Sardis Lake, Oklahoma

Repair and Paint Service Gates

The 2009 Annual Inspection indicated the service gates and liners have several areas of bare metal that require painting, as well as areas of structural damage that should be repaired. These repairs are necessary to ensure the service life of the gates and liners can be met.

Repair Cost Estimate: \$800,000



6 Big Hill Lake, Kansas

Repair Intake Tower Service Gates

The 2010 periodic inspection indicated that the gates and guides should be rehabbed and repainted within the next few years. The gates were last accessible in 2007, and at that time the gates and guides had significant rust blisters occurring. No repairs have been performed since this time with

the assumption that the gates and guides are having increased deterioration. These repairs are necessary to ensure that the service gates and guides meet their intended service life.

Repair Cost Estimate: \$1 million

7 R.S. Kerr Lake, Oklahoma

Rehabilitate Tainter Gates and Operating Equipment

The 2008 Periodic Inspection, as well as the 2009 Annual Inspection Reports, indicated that floating debris that passes through the gates continues to cause damage to the gate paint and members. Gates 11 and 12 have bent strut arm braces. Just about every gate has some slightly twisted girder braces, and many of the rib and girder stiffeners are severely rusted and thin. Additionally, the remote controls for the tainter gates have proven unreliable and are no longer used. Many of the control inclinometers have been damaged by debris and are unusable. These gates and the operating equipment are over 40 years old and need immediate repair to extend their useful life.

Repair Cost Estimate: \$9 million



9 Lake Texoma (Denison Dam), Texas

Replace Service Gates/Seals and Repair Flood Gates

Both the 2002 and 2007 Periodic Inspection reports indicated the service gates leak profusely. The gates are over 50 years old and accumulative corrosion and cavitation is causing significant damage. This project provides for replacement of two service gates; cleaning, repairing and painting four flood gates; and replacing upper stationary bronze seals on all flood gate slots. Accelerated wear and corrosion will result if funding is not provided, and continued deterioration to key structural

8 Webbers Falls Lock and Dam, Oklahoma

Repair Tainter Gates

The 2008 Periodic Inspection indicated that the gates and guides be rehabbed and repainted within the next few years. The gates were last painted between 1998 and 2001. Floating debris swirls around in the tailwater and has already worn off paint on the strut arms. In addition, some tight or hard to access locations were not well painted and are rusting. Lastly, several bearings in the pillow bushings for the torque rods on the gates have slipped out of their housings. These repairs are necessary to ensure that the tainter gates continue to operate and meet their intended service life.

Repair Cost Estimate: \$8.5 million

members and surrounding conduit will result. The gantry crane identified in the FY09 Project Update has been funded through the ARRA program.

Status: A contract was awarded in FY10 to repair one emergency gate and four draft tube gates. After further structural inspection of the four draft tube gates in December 2010, it was determined that the cost to repair the gates would be significantly more than the cost to replace. A modification has been completed to replace all four gates in lieu of repair. In addition, FY11 funds were used to complete the design of additional flood gates with an anticipated award in September of one flood gate and the turntable with available options for additional gates in the contract.

Repair Cost Estimate: \$5.7 million



10 Tenkiller Lake, Oklahoma

Repair Tainter Gates

The 2009 Tainter gate inspection indicated that the paint on the upstream and downstream sides of the tainter gates was starting to show wear and should be painted, as necessary, to prevent further corrosion. Repairs are required of twisting strut arms, repairs of a crack in a rib flange and repairs of lamination in strut flanges and painting of trunnion girders and weld repairs. These repairs are necessary to ensure that the tainter gates continue to operate meet their intended service life.

Repair Cost Estimate: \$4.2 million

11 Broken Bow Lake, Oklahoma

Repair/Modify Floating Bulkhead

The safe operation for the use and performance of the bulkhead has become a concern. The bulkhead, composed of four different leaves, is a great mechanical design, but some changes are required before it can be utilized to its full potential. Assembling the gate into the appropriate configuration requires considerable scheduling and coordination. Different lake levels require different configurations. A mobile crane is required to maneuver the leaves during assembly. A temporary

crane pad must be constructed by use of a dozer. The pad must be located immediately adjacent to the water's edge in order to provide crane access to the bulkhead leaves. A permanent pad is not feasible due to the ever-changing lake level and a corresponding change of the shoreline. As a result of the difficulties in using the bulkhead, Gate Operational Condition Inspections could not be made on all gates. Modification of the bulkhead is needed to ensure its use during all lake elevations and to reduce the manpower and equipment costs each time it is assembled and used. Severe leakage in the spillway gallery has become a Dam Safety concern. Assurance and reliability of the bulkhead to function for a long period of time is required to properly assess and correct this problem.

Repair Cost Estimate: \$500,000

12 Skiatook Lake, Oklahoma

Repair and Paint Service Gates and Liners

Severe corrosion and pitting was originally reported on these gates, liners and valves in 2003. This project provides for the repair and painting of two service gates, two emergency gates and a low-flow valve; cleaning, repairing and painting two service gates, two emergency gates and the low-flow valve and associated metal gate liner plates, frames, air vents, and bonnets. Also, rehabing gate babbitt sill on service gates and welding repair and machining the bottom sealing surface of the service gates.

Skiatook Lake makes continuous water releases through the low-flow valve to meet water quality standards for the city of Tulsa. In addition to flood waters, these water quality releases have taken their toll on all gates and the low-flow valve. Skiatook Lake provided two-billion gallons of water supply releases in 2008.

Accelerated wear and corrosion will result if funding is not provided. Continued deterioration to key structural members and surrounding conduit will result.

Repair Cost Estimate: \$1.1 million



13 Red River Chloride Control

Procure 36-Inch Water Line

Since 1999, the majority of the breaks in the pipeline seem to be caused by differential settlement of the foundation materials. As a result of the pipeline breaks, gravel and dirt have washed into the line during the breaks resulting in

the surge tanks filling with material. The amount of debris in the line is unknown. Additional funds are necessary to make major pipeline replacements. In FY11, \$60,000 was used to purchase pipe and repair kits to keep the system in operation but no significant capital improvements were able to be made. The system is in poor repair and has met its useful life.

Repair Cost Estimate: \$500,000

14 Hugo Lake, Oklahoma

Refurbish Gear Boxes and Replace Control Cabinets

The shaft seals have failed due to age requiring immediate repair to ensure the gears do not rust and become defective. The control cabinets are original to the project and need to be replaced. These repairs are necessary to ensure that the tainter gates continue to operate and meet their intended service life.

Repair Cost Estimate: \$500,000



15 Kaw Lake, Oklahoma

Paint Bridge and Hoist Machinery

Information is from the 2010 Bridge and Periodic Inspections. The superstructure steel is rusting in critical stress areas but section loss is presently insignificant. At girder welds, other discontinuities are noted including rust and a hole. Floor beams and stringers show coating failures and corrosion along flanges and at webs. Welds are missing at connections for floor beams. Cantilever brackets at floor beams lack welds or the welds are noted as poor quality. The steel for the bearings has corrosion with pits. With regard the hoist equipment, it is in poor to fair condition. Most of the gear boxes have peeling paint and rust. Rusty gears were found and require repair. These repairs are necessary to ensure that the tainter gates continue to operate and meet their intended service life.

Repair Cost Estimate: \$1 million



Arkansas River Basin

Arkansas River Arkansas City Aquatic Ecosystem Restoration

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

Feasibility Study, Inactive

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, Oklahoma.

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 habitats. 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.

By letter dated August 7, 2008, the city of Arkansas City indicated that they would not be able to pursue implementation efforts due to current fiscal constraints and would like the option to reconsider this project in 2011. At that time, project implementation efforts were suspended.

In January 2011, City officials contacted the Corps of Engineers expressing a renewed interest in project implementation efforts and asked that the Corps consider a slight variation to the recommended plan.

On June 28, 2011, Corps and City staff visited the proposed restoration area, which is significantly smaller in scope (only the McFarland site) than what had been recommended during the feasibility study effort. It was decided that the City will pursue implementation efforts on their own as the reduced scope of project

could not be justified within the Corps ecosystem restoration authority.

Arkansas River Corridor

Section 905(b) Water Resources Development Act (WRDA) Analysis as an initial response to Section 3132, WRDA 2007

Study, Planning

The Arkansas River is a valuable water resource that provides opportunities for redevelopment for ecosystem restoration due to extreme variations of river flows, flood risk management, recreation improvements and environmental and water quality focus. With this effort, there would likely be economic development 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.

The Water Resource Development Act of 2007 Section 3132 provided authorization for the Secretary of the Army to construct features of the Arkansas River Corridor Master Plan and included

authorization of \$50 million in federal funds. The project must now go through economic and environmental justification in a feasibility study.

In 2009, the Corps completed Phase III of the Arkansas River Corridor Study that focused on engineering and environmental studies. Primary products from this phase included an ecosystem restoration plan, geotechnical studies, recommendation for holistic approach to weir operation, design recommendations, and baseline environmental data.

In 2010, Tulsa District received \$90,000 for a new start feasibility study. It was the first new start the District had received since 2003, and indicative of the support this project enjoys both locally and on Capitol Hill.

These funds were used to complete the reconnaissance report, as well as negotiate a feasibility cost-share agreement. Tulsa County will be the cost-share sponsor for the feasibility study that should begin in 2011, depending on federal appropriations. Feasibility studies



typically last three years. Unfortunately, there have been no appropriations since the agreement was signed.

Two low-water dams have been identified as major components of the comprehensive ecosystem restoration plan. Hydropower production at Keystone Dam has negatively impacted this riverine ecosystem, and a series of low water dams will be studied to determine if they are a justified and sustainable ecosystem restoration plan. Tulsa County was the cost-share sponsor in Phase III.

If funded in FY12, Tulsa District would further develop and screen alternatives, gather more geotechnical data, and begin the National Environmental Policy Act (NEPA) process.

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 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.

FY11 efforts are focused on completion of construction plans and specifications, and assisting the city of Augusta in obtaining the necessary rights-of-way for the construction effort. On July 21, 2011, the solicitation for the construction contract was issued. This solicitation is set aside for Service-Disabled Veteran-Owned Small Business (SDVOSB).

We anticipate award of the construction effort in September 2011.

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 \$167 million, multi-phase Dam Safety project is to correct deficien-

cies related to stability (movement of the existing spillway), seepage under the existing embankment, a hydraulic deficiency of not being able to pass the probable maximum flood event, and new seismic requirements.

Construction started in 2006 with a \$4.5 million contract to stabilize the existing spillway with 64 anchors drilled into the downstream spillway weir. In 2007, work commenced to resolve the remaining deficiencies with the construction of a new auxiliary spillway channel with the excavated material being used for a seepage berm on the downstream face of the existing embankment. Construction of the auxiliary spillway channel required two preliminary contracts to facilitate the excavation. These included relocating Highway 58A for \$3.1 million and reconfiguring the current project office for \$900,000. In 2008, a \$41.1 million contract for the first phase of the auxiliary channel excavation was awarded. This contract included 1.3 million cubic yards of excavated material being used to construct a seepage berm on the downstream toe of the existing earth embankment. In addition to the excavation, concrete diaphragm walls and aprons, channel rip rap, a channel cut-off wall, new piezometers, and extension of the current relief wells were included in the contract. This contract was substantially completed in December 2010.

The project's most recent contract award occurred in August 2010 with the award of the new Highway 58A bridge. This is a 540-foot long, six-span concrete bridge that spans the new auxiliary channel. The bridge contract was awarded for \$4.1 million and is currently scheduled for completion in January 2012.

In addition to the construction activities, engineering and design was completed on the new auxiliary spillway weir, fuse gates and hydraulic structures phase, and continues on the Phase 2 excavation portion. The new auxiliary spillway weir, fuse gates and hydraulic structures contract will be awarded in September 2011. The entire project is scheduled for completion in December 2015.



Eufaula Lake EIS for Update of the Shoreline Management Plan and supplement to the Master Plan

The purpose of the Environmental Impact Statement (EIS) is to address alternatives and environmental impacts associated with an update of the Shoreline Management Plan (SMP) and supplement to the Master Plan (MP), Eufaula Lake, Oklahoma. The EIS would likewise evaluate alternatives and environmental impacts associated with specific proposals for recreational development facilities on federal lands at Eufaula Lake as identified through the SMP update and MP supplement process.

Eufaula Lake is a multi-purpose reservoir about 12 miles east of Eufaula, Oklahoma, in McIntosh County. At Eufaula Lake, private shoreline uses including private boat docks and vegetation modification are managed under a permit system dependent upon shoreline allocation classifications specified in the SMP. Reviews and updates to SMPs are periodically provided, and the last update to the Eufaula Lake SMP occurred in 1998. Similarly, land resources at Eufaula Lake are managed in accordance with MP requirements. In the land allocation portion of the MP, all project lands are assigned categories that are used for determination of appropriate uses for these lands. The last update to the Eufaula Lake MP occurred in 1977. Owing to the elapsed time since last updates, changed conditions, and the need to assess lake-wide cumulative effects, the Tulsa District seeks to update the Lake Eufaula SMP and supplement the MP by updating the land allocation portion. Actions appropriate for updating these plans and preparing the EIS will occur concurrently.

As the SMP and MP update processes involve public participation and input, it is possible that specific proposals

for recreational or other development features involving project shorelines and/or lands may be received by the Tulsa District. For proposals that have advanced to a planning stage of sufficient detail to allow for proposal-specific alternative and impact analysis, the EIS would include these analyses. For reasonably foreseeable development proposals that have not advanced to the point where proposal-specific analyses are possible, these will be assessed under cumulative impacts but will require additional analysis under the National Environmental Policy Act (NEPA) prior to their implementation at Eufaula Lake.

Issues to be addressed in the EIS include but are not limited to: (1) socioeconomic impacts associated with allocation classifications and specific development proposals; (2) matters pertaining to shoreline impacts; (3) potential impacts to cultural and ecological resources; (4) public access and safety; (5) impacts to lake use, public parks, and recreation; (6) aesthetics; (7) infrastructure; (8) lake water quality; (9) traffic patterns; (10) terrestrial and aquatic fish and wildlife habitat; (11) federally listed threatened and endangered species; and (12) cumulative impacts associated with past, current, and reasonably foreseeable future actions at Eufaula Lake.

A public scoping meeting for this action was conducted on June 2, 2011, in Eufaula. In addition, public workshops addressing updates to the SMP and MP may be held at locations near Lake Eufaula. News releases and notices informing the public and local, state, and federal agencies of the proposed action will be published in local newspapers.

The draft EIS will be available for public review and comment. While the specific date for release of the draft EIS has yet to be determined, all interested agencies, Tribes, organizations and parties expressing an interest in this action will be placed on a mailing list for receipt of the draft EIS. In order to be considered, any comments and suggestions should be forwarded to the Tulsa District Office in accordance with dates specified upon release of the draft EIS.

Grand Lake Comprehensive Study

Section 449 of the Water Resources Development Act of 2000

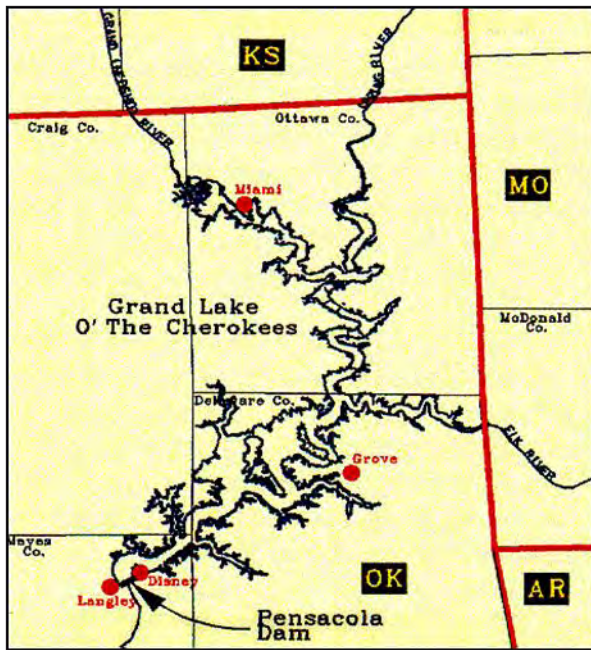
Study

Grand Lake was designed and constructed by the Grand River Dam Authority and initially had the 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 operate the flood risk management storage. The flood risk management pool limits were established from elevation 745.0 to 755.0 (Pensacola datum). Flowage easements were acquired up to elevation 750.0 by the state of Oklahoma.

Other federal agencies acquired flowage easements from elevation 750.0 ranging up to 760.0. The administrative jurisdiction of the flood risk management flowage easements was transferred to the Corps in October 1959.

In response to public concerns, Congress established Section 560 of the Water Resources Development Act of 1996 that authorized the Corps to conduct a study that considered the combined operating purposes of flood risk management and hydropower. The September 1998 Grand Lake, Oklahoma, 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 were a “new” Corps project.

A letter report was prepared by the Tulsa District 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. However, this provision makes the study totally dependent on avail-



able annual funds specifically provided by Congress because it is not consistent with administration budgetary policy. If a non-federal cost-sharing partner can be identified, the study could become more competitive in the Corps budget process and the likelihood of future funding would increase.

FY08-10 activities included the preparation of a Hydrology and Hydraulics Geographical Information System (GIS) Needs Assessment Report, meetings with city of Miami officials, development of a Project Management Plan (PMP), and a draft scope of work for mapping and GIS support. Using carry-over funds from FY10, FY11 activities included initial development of mapping products to complement adjacent area maps being created by the Federal Emergency Management Agency. When completed, the mapping products will help Ottawa County and the city of Miami, Oklahoma, in making short-term floodplain management decisions.

Potential future feasibility phase activities would be dependent upon annual funding. The purpose of the feasibility study would be to identify cost-effective solutions to reduce the risk of flooding and consistent with current federal policies. Categories of alternatives to consider include structural measures (such as levees and bridge modifications), nonstructural measures (such as

flood proofing and buyouts of flood prone structures), changes in the system operation, and combinations of measures.

In the short-term, a strategic activity conducted by the Corps is the operation of flood risk management pool releases consistent with the current system operating plan to potentially reduce impacts of minor flood events. 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 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.

John Redmond Watershed Study

Section 208, Flood Control Act of 1956 and Resolution of the 110th Congress 1st Session, United States Senate, Committee on Environment and Public Works, adopted July 31, 2007

Watershed 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 (KWO) in September 2006 for the John

Redmond Reservoir Study and updated in 2008 to increase study scope and cost. KWO requested a more detailed analysis of all alternatives rather than the preliminary screening process more typical of a feasibility 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 2008, the study team focused on monitoring gauges, conducting watershed modeling, extrapolating data from sediment studies for flood pool estimates, and analyzing 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.

In 2009, Tulsa District completed an alternative analysis at which time it became evident that federal project implementation was not economically justified. The District recommended the study shift to complete a collaborative watershed management plan. The KWO agreed to this option.

In 2010, the Feasibility Cost Share Agreement and the Project Management Plan (PMP) were revised to reflect the redirection of the study from a feasibility study to a watershed study for that portion of the Neosho Basin upstream of John Redmond and downstream of Council Grove and Marion Lakes at the direction of the KWO. The KWO is interested in using the data gathered during the interim feasibility study to develop a comprehensive, holistic watershed study that directly corresponds to and integrates with Kansas' water planning activities, including the Kansas Reservoir Sustainability Initiative and Reservoir Roadmap.

In early 2011, work on this project, except for the stream gauging through the USGS, was temporarily suspended due to the lack of funding for FY11. The KWO expressed interest in continuing the watershed study once funding is

restored. Also, should funding become available, the KWO expressed an interest in continuing with the USGS gauging activity through the suspended period, if at all possible.

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, Oklahoma. 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.

This project was awarded for construction on April 19, 2011, at a cost of \$4,905,750 to Coast to Coast LLC. Notice to Proceed was issued on June 2, 2011, and completion is expected in October 2012.

John Redmond Reservoir Reallocation Study

Section 208, Flood Control Act of 1956 and Resolution of the 110th Congress 1st Session, United States Senate, Committee on Environment and Public Works, adopted July 31, 2007

Watershed 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 risk management (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 risk management 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.

The study and subsequent report are being done in response to Congressional Senate Report 106-58 to study raising the conservation pool at John Redmond Dam and Reservoir to meet the terms of two existing water supply agreements with the State of Kansas. Water storage has been steadily depleted by uneven sediment deposition such that there is infringement on State of Kansas water supply agreements.

Based on the evaluation of several alternatives, the preferred alternative is to increase the top of the conservation pool elevation from 1039.0 feet National Geodetic Vertical Datum (NGVD) to 1041.0 feet NGVD to meet current water supply agreements and water quality demands.

Corps Headquarters reviewed and provided comments on a draft final report in 2008. The Corps determined that because water supply is the primary reason for the reallocation, all replacement costs will be paid by the beneficiary - the Kansas Water Office (KWO). The KWO asked Tulsa District to hold the report rather than send it for approval with the recommendation that they pay all replacement costs. The District has held the report since November 2008, and during that time encountered another obstacle. Since Hurricane Katrina, the Corps has increased focus on dam and levee safety. A national team has been inspecting structures and found risks at Hartford Levee, which is part of Redmond Reservoir. Because of the risks, the pool cannot be raised until corrections are implemented. Modifications to Hartford Levee to address the safety risk factors are currently in progress.

One positive aspect of our effort on this study is that several of the replacement actions identified as KWO actions are occurring on Corps-owned property. This land is leased to the U.S. Fish and Wildlife Service (USFWS). Because of this, Tulsa District has been able to partner with KWO and USFWS to complete partial replacement of wetlands and bottomland hardwoods.

Lawton Wastewater Infrastructure

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

Under Construction

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

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.

Construction on the project was completed during the third quarter of FY11. Financial closeout and final transfer of the constructed work to the City of Lawton is scheduled to occur during the first quarter of FY12.

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

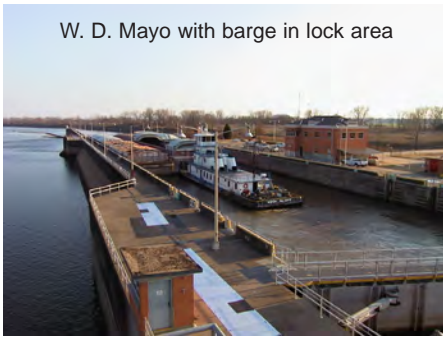
Section 136, Energy and Water Development Appropriations Act, fiscal year 2004 (Public Law 108-137)

Authorized (Not Started)

The McClellan-Kerr Arkansas River Navigation System is approximately 445 miles long, consists of 18 locks and dams, and provides nine-foot-deep inland navigation from the Mississippi River to Catoosa, Oklahoma.

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

W. D. Mayo with barge in lock area



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.

The projected cost estimate of \$185.5 million is cost-shared with the Inland Waterway Trust Fund, and is jointly managed by Little Rock and Tulsa Districts. To date, \$7 million has been provided through a FY05 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 FY06, dredging commenced and was completed at mile 348 in Pool 15 in Oklahoma, and construction of training structures in Pools 2 and 7 in Arkansas was started. 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 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 FY08, FY09, FY10, or FY11 budgets. However, FY06 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.

Funds have been exhausted resulting in no further work on the project.

Oklahoma Comprehensive Water Plan

Study

The Oklahoma Water Resources Board (OWRB) is working with multiple federal, state, Tribal and other stakeholder organizations to update the Oklahoma Comprehensive Water Plan (OCWP). Tulsa District is providing technical planning assistance for this effort through the Planning Assistance to States Southeast Oklahoma General Investigation Study and the Washita River General Investigation Study authorities. The data, tools, and prioritization of needs information associated with the OCWP update are shared resources of the studies and will be used, contingent on approvals and funding, for future phase detailed investigations.

Additionally, 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. To date, no funding has been appropriated. Implementation Guidance is at Corps Headquarters for review, at which point it will be submitted to the Assistant Secretary of Army for Civil Works for approval.

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

The first phase of the OCWP update includes the 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 water plan update identifies the 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, identified 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 universities to develop policy recommendations for consideration by the state legislature.

In 2008, we developed a programmatic work plan and developed and distributed a pilot Geographic Information System project and an infrastructure survey for municipalities and rural water districts. Coinciding with these integrated efforts was an extensive public participation program to create a transparent and open planning process.

In 2009, we completed assessments of water demand and of ground and surface water supplies. The results of these two assessments were compared to define gaps where supply is inadequate.

In 2010, conservation assessments, refinements to demand projections, and regional supply alternative assessments were completed.

In 2011, the following activities will be completed: Model documentation and training for the Oklahoma Gap tool, Reservoir Yield Model, and Climate Demand Model; production of Watershed Planning Regional Reports/Basin Technical Appendices; construction of detailed plans for hot spot solutions and infrastructure; completion of a wastewater infrastructure Capital Needs Assessment and provider Planning Guide; and preparation/submission of Final Report (November 2011).

Oologah Lake Watershed Feasibility Study, Oklahoma and Kansas

Section 208 of the Flood Control Act of 1965 and Resolution of the 110th Congress 1st Session, United States Senate, Committee on Environment and Public Works, adopted July 31, 2007

Watershed Study

The focus of this ongoing watershed study is the approximately 2,350 square-mile subset of the 4,300 square-mile Verdigris River watershed upstream of the dam at Oologah Lake in Oklahoma to the dams at the four federal reservoirs in the Verdigris River Basin in southeastern Kansas. The purpose of this watershed study is to assess the existing conditions in the watershed and identify the problems contributing to impairment of the aquatic resources, as well as potential solutions to restore aquatic habitat and quality on a regional basis. The City of Tulsa, as the local partner and sponsor, has worked proactively with the Corps to engage representatives from over 30 federal, state, and local agencies, universities, special interest groups, and individuals throughout the watershed in both Oklahoma and Kansas. Through this collaborative planning process, the stakeholders have identified issues and potential solutions for application on a regional basis to improve the quality of water resources in the watershed. This approach provides the opportunity to achieve sustainable water resources solutions on a regional basis.

This study will present various management strategies that can be implemented throughout the watershed on a regional basis. Since the majority of the land in the Oologah Lake watershed and study area is privately owned, the potential solutions are those that can be implemented by individual landowners in the basin. Although this effort is led by the Corps and the City of Tulsa, implementation of the many strategies established in the report as a result of the collaborative planning process will occur by other federal, state, and local agencies with

authorities to assist the individual landowners in the watershed.

The study will culminate in a report documenting the process and findings, and it will include appendices with water quality data, water quality analysis, and outputs from the modeling effort that has served as the primary planning tool throughout the study.

In 2011, the first draft of the watershed study will be circulated among the many partners, and the final document is expected to be completed by the end of FY11.

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, are 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 percent 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 FY08, the alternative analysis and selection was completed.

In 2009, we completed cost estimates that identified project implementation could be done through the Continuing Authorities Program. This means the reports do not have to go to HQ and Congress for approval.

In 2010, the CE-QUAL-W2 modeling, which models how the recommended plan would affect water quality in Spavinaw and Eucha Lakes, was completed. The modeling results show that

the recommended plan would achieve the planning objectives. The model(s) and model documentation were submitted for agency technical review and were approved.

In 2011, the model documentation will be incorporated into the feasibility report and forwarded to Southwestern Division for approval. The recommendations in the report will include implementing the project under Section 206 of the Continuing Authorities Program.

Tribal Support Program

10 USC 3036(d)(2)

Continuing

Oklahoma is home to 38 federally recognized Tribes. Tulsa's program has traditionally consisted of grant application support, contract administration support, and construction oversight for HUD Indian Community Development Block Grant (ICDBG) projects. Some of these projects include wellness centers, food distribution centers, medical clinics, substance abuse centers, and many more. The impact these projects have to quality of life for an often underserved demographic is tremendous.

In FY11, Tulsa's Tribal Support Team became involved in a unique collaboration among five Tribes and the Northeastern Tribal Health System (NTHS). In an effort to provide high quality medical care, five Tribes combined their ICDBG grants, and the NTHS matched the money to construct one large medical facility with multiple specialties. A design-build contract was awarded by NTHS in July 2011, and construction will last approximately 20 months. Along with this project, we assisted about 15 other tribes with grant application and construction projects.

In FY12, the Tribal Team expects to support about 15-20 Tribes in their grant application, construction, and contract management efforts.

The district team is also finding an interest in our planning expertise. In FY11, Tulsa District executed two cost-share agreements for Tribal studies. One was with the Fort Sill Apache Tribe, and



Quapaw Fire and Emergency Medical Services

the other agreement includes both the Chickasaw and Choctaw Nations. These studies are being conducted under the Planning Assistance to States Authority.

In FY12, Tulsa District expects to execute non-cost-share agreements with the Thlopthlocco Tribal Town for a master plan study and with the Cherokee Nation for technical review for the W.D. Mayo Hydropower Plant. The Cherokees were authorized to construct a hydropower plant at W.D. Mayo Lock and Dam in WRDA 1986; however, it has only recently become economically feasible.

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 69,000 kW. These turbines were the first tube turbines of this magnitude ever built and placed into 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. 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 generators will be rewound and 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 as an option under the Ozark contract that was awarded in May 2005.

The Webbers Falls Powerhouse Rehabilitation project's current cost is \$72.7 million with a scheduled completion date of December 2014. The project scope includes the turbine rehabilitation, generator rewind, rehab of the intake/tail race gantry cranes, rehab of the bridge cranes, rehab of the intake gates

and bulkheads, and installation of new 13.8KV breakers.

In 2008, the three turbine runner options were awarded to Andritz Inc. for \$39.1 million. This contract is currently under construction with the first unit scheduled to begin commercial testing in September 2011. In addition to the turbine runners, the turbine and generator bay bridge crane rehab contract was awarded and completed in 2008 for \$2.3 million, and the intake and tail race gantry crane rehab contract was awarded in 2009 and completed in 2010 for \$3.8 million using American Recovery and Reinvestment Act funds. In September 2010, a \$3.1 million contract was awarded to rehabilitate four intake gates, four tailrace bulkheads, and three intake bulkheads. The gate and bulkhead job is anticipated to be completed in May 2012. Lastly, in December 2010, a \$4.9 million contract was awarded for the rewinding of all three generators. This generator rewind project is scheduled for completion in November 2013.

All work with the exception of the gantry cranes is funded by customer funding sub-agreements through the Southwestern Power Administration.

Red River Basin

Email Stephen.L.Nolen@usace.army.mil or Kenneth.L.Shingleton@usace.army.mil.

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 (WCWID) #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 (TWDB) in conjunction with the Wichita County Water Improvement District #2 and the City of Wichita Falls.

Tulsa District awarded a contract to conduct flood plain inventory and finished hydraulics and hydrology work to include the probable maximum flood, modeling, and yield analysis. We also completed preliminary geotech studies.

In 2010, TWDB and the Corps focused on reconciling the two models used to calculate firm yield but found no resolution to the difference.

In 2011, a third party organization analyzed the Water Availability Model and RiverWare models for Lake Kemp and found that when the differences between the models are reconciled, neither predicts a significant increase in the lake's firm yield from raising the lake's conservation pool by six feet. The study team is currently working with the TWDB and WCWID on a path forward.

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

Bowie County Levee

Energy and Water Development Appropriation Act of 2001 and 2003

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 that will be constructed. This plan consists of restoring six miles of existing levee, constructing four miles of new levee, and constructing 1.4 miles of channel to divert Barkman Creek flows to the Red River.

In February 2010, Tulsa District formulated its final offering for a mitigation plan. The sponsor has considered the plan and has indicated that it will offer an alternative rather than accept the plan as submitted by the Corps. During FY11, the sponsor will continue to develop its alternative mitigation plan. When the sponsor ultimately offers its plan, Tulsa District will evaluate it and determine its acceptability as a valid alternative. After the mitigation plan is mutually accepted, the Environmental Assessment (EA) can be revised and published, thus clearing the way for formulation and submittal of the project decision document.

Tulsa District has been directed to submit a Post Authorization Change Report (PACR) to the division commander for approval. This PACR will serve as the decision document that is the basis for the Project Partnership Agreement (PPA) for the project. The PACR will be submitted within the six months following the publication of the revised EA. Approval should follow submittal within another six months.

The PPA should be submitted within six months of approval of the PACR. Approval of the PPA, which should take an additional six months, will clear the way for the sponsor to begin real estate

acquisition that should occur within 24 months of the approval of the EA. Upon completion of the real estate acquisition, which should take 12 months, a construction contract can be awarded, and construction can begin. Construction is estimated to take three years.

Denison Land Conveyance (WRDA 2007)

Water Resources Development Act of 2007 Section 3182, (j) and (k)

Conveyance of Land at Lake Texoma, Texas

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 land 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 National Environmental Policy Act (NEPA) documentation and other real estate requirements such as survey and appraisal. All costs are to be funded by the city.

A Notice of Intent to prepare an Environmental Impact Statement (EIS) was published in the Federal Register on August 6, 2008. A public information meeting was held September 11, 2008, as a part of the NEPA EIS scoping process. Public comments were accepted and summarized in a scoping report, which is posted to the Tulsa District website.

The draft Environmental Impact Statement (EIS) is being conducted. It is anticipated that the draft EIS will be available for public review during fall 2011. Comments regarding the EIS may be directed to:

Mr. Stephen Nolen or Mr. Ken Shingleton, Environmental Analysis & Compliance Branch, U.S. Army Corps of Engineers, Tulsa District, 1645 S. 101st East Avenue, Tulsa, OK 74128-4609.

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.

A water supply yield analysis has been completed and reviewed by the Texas Water Development Board. The analysis indicates substantially less yield from a reallocation from the flood pool than the initial estimated. As a result, studies have been suspended and a draft report of findings is planned to be submitted by the end of September 2011.

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.

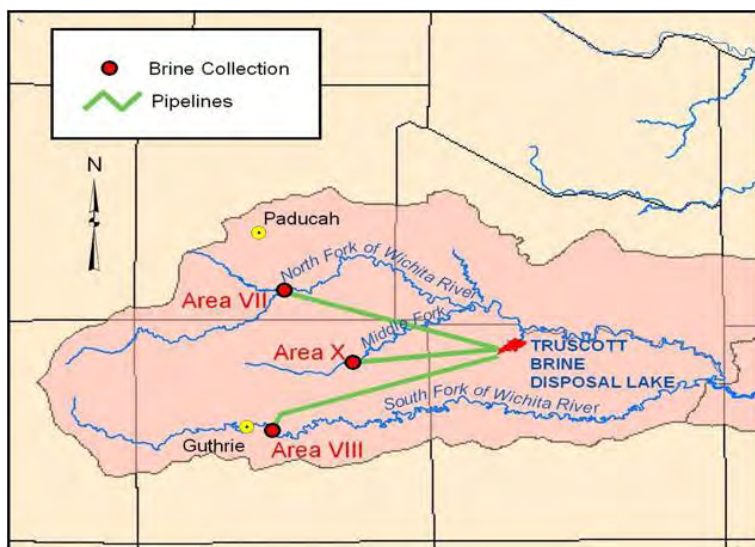
Under Construction

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. The state of Oklahoma has expressed a renewed interest in the Area VI element of the Red River project, and re-evaluation efforts are underway. Area VI is located on the Elm Fork of the North Fork of the Red River in Harmon County, Oklahoma.



Portions of the Wichita River Basin Chloride Control element, located in northwest Texas, have been constructed and in operation since 1987. Features include two low-flow collection dams, a pump station, and diversion pipeline to the Truscott Brine Disposal Reservoir. Additional construction efforts at the Area X pump house were completed in August 2010.

With carryover funds from FY10, land appraisal efforts for the remaining right of way at Area X in Texas were completed. In addition, detailed baseline environmental monitoring activi-

ties were continued. For the Area VI Re-evaluation effort, all associated studies should be complete by December 31, 2011. As soon as additional funding is made available, efforts to provide refinement of chloride control alternatives and incorporation of all NEPA documentation for Area VI will be initiated.

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, the Corps developed a programmatic work plan and developed and distributed a pilot Geographic Information System project and an infrastructure survey for municipalities and rural water districts. Coinciding with these integrated efforts was an extensive public participation program to create a transparent and open planning process.

In 2009, we completed assessments of water demand and of ground and surface water supplies. The results of these two assessments were compared to define gaps where supply is inadequate.

In 2010, conservation assessments, refinements to demand projections, and regional supply alternative assessments were completed.

In 2011, the following activities will be completed: Model documentation and training for the Oklahoma gap tool, reservoir yield model, and climate demand model; production of Watershed Planning Regional Reports/Basin Technical Appendices; construction of detailed plans for hot spot solutions and infrastructure; and completion of a wastewater infrastructure Capital Needs Assessment and Provider Planning Guide.

This study is scheduled for completion in 2012.

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 Corps developed a programmatic work plan and developed and distributed a pilot Geographic Information System project and an infrastructure survey for municipalities and rural water districts. Coinciding with these integrated efforts was an extensive public participation program to create a transparent and open planning process.

In 2009, we completed assessments of water demand and of ground and surface water supplies. The results of these two assessments were compared to define gaps where supply is inadequate.

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This study is scheduled for completion in 2013.

WRDA 1999 Conveyance of Lands to State of Oklahoma

The Water Resources Development Act of 1999, Section 563(e) authorized the Secretary of Army to convey to the state of Oklahoma lands in the Lake Texoma State Park. The law required conveyance to be at fair market value, and all costs are to be paid by the state. Conveyance must comply with environmental laws, including the National Environmental Policy Act (NEPA). In 2006, 558 acres of land was sold to the state through the Commissioners of Land Office (CLO). The land was withdrawn from the park lease. The CLO subsequently sold the

land to Pointe Vista Development, L.L.C. The state has requested conveyance of additional lands in the state park through the Oklahoma Tourism and Recreation Department.

A Notice of Intent to Prepare an Environmental Impact Statement (EIS) was filed in the Federal Register on August 21, 2009. A public information meeting was held in Kingston, Oklahoma, on September 22, 2009, as a part of the NEPA scoping process. Comments from the public meeting regarding the proposed conveyance of Texoma State Park lands were made part of the scoping report that is posted to Tulsa District's website, www.swt.usace.army.mil.

The draft phase of the EIS is expected to commence in the fall of 2011.

Although the formal comment for EIS scoping has ended, comments regarding the EIS may be directed to Mr. Stephen Nolen, Environmental Analysis & Compliance Branch, U.S. Army Corps of Engineers, Tulsa District, 1645 S. 101st E. Avenue, Tulsa, OK 74128-4609.

Fax: 918-669-7546

Email: Stephen.L.Nolen@usace.army.mil

