



U.S. Army Corps
of Engineers®

Tulsa District Project Update

Honor Cottage opens at Skiatook Lake



The Honor Cottage at Skiatook Lake is dedicated for the exclusive and cost free use of veterans served by the Folds of Honor Foundation.

A healing retreat for Wounded Warriors and their families is now complete at Skiatook Lake, a project managed by the Tulsa District, U.S. Army Corps of Engineers in northern Oklahoma. The official ribbon cutting for the cottage was Sunday, May 26.

The Honor Cottage is a 1,100-square-foot getaway tucked into a secluded hillside at CrossTimbers Marina overlooking the lake, to take advantage of the healing and restorative

power of water. It is dedicated for the exclusive and cost free use of veterans served by Folds of Honor Foundation. Its construction was made possible through a partnership between the Tulsa District USACE, the Skiatook Economic Development Authority, CrossTimbers Marina owner Ron Howell, and the Folds of Honor Foundation.

"The partnership the Corps has with Ron Howell and the town of Skiatook began when the Corps began to look for

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District Commander's Perspective

Thanks to all for the extremely warm welcome as we joined the Tulsa District and its many great partners. The Change of Command ceremony with COL Mike Teague was July 12, 2013, and it has been a fast moving train ever since. As most of you probably already know, Mike retired from the Army August 31, 2013, and began his next career as the Oklahoma Secretary of Energy and Environment soon after. We wish the Teague family well in retirement and their new adventures.

It is such an honor to be part of a District with such a stellar reputation in the U.S. Army Corps of Engineers (USACE). It may be of interest to know that the Tulsa District was our first choice of assignment based on a myriad of reasons including the opportunity to live in Tulsa and serve in the great States of Kansas, Oklahoma and Texas.

It is great to finally be on the downside of winter, where the recent snow and ice storms were a little more prevalent this year than the recent past. As we get ready for the upcoming warmer weather, we begin our preparations for an increase in our recreation mission. With lots of tree damage left by the harsh winter weather, this is no easy task.

We also continue to respond to challenges associated with the low-levels of precipitation and the impacts the drought conditions play in the southwestern sector of the district. Unusually dry conditions have greatly impacted the Red River inflows, resulting in low-lake levels at Lakes Waurika and Texoma, while, further north, Canton and Skiatook continue to be in drought status. Using our drought management plans, we have actions at each lake to minimize drought impacts and be proactive in our communications with other agencies and the public.

We provided Oklahoma Governor Mary Fallin with an update on current Tulsa District reservoir conditions as a result of Oklahoma's existing drought conditions Feb. 17, 2014 at the Oklahoma State Capitol. Also in attendance were Ms. Deby Snodgrass (Oklahoma Secretary of Tourism), Mr. Jim Reese (Oklahoma Secretary of Agriculture), Mr. Mike Teague (Oklahoma Secretary of Energy & Environment), Mr. JD Strong (Oklahoma Water Resources Board), Mr. Richard Hatcher (Oklahoma Department of Wildlife Conservation), and Mr. Chris Turner (Director for SWPA). Topics discussed included Lake Texoma's hydropower operations, pool elevations, current situation, concerns, and the way ahead as well as the current conditions at Waurika, Skiatook, and Canton Lakes. Interagency Drought Management Committee meetings have been scheduled for Canton March 24 and Texoma and Waurika April 15. We will also participate in a public meeting hosted by the Lake Texoma Association April 4.

In this issue of the Project Update, we take pride in presenting a few of our accomplishments. The cover story highlights our Nation's first "Honor Cottage,"

See "Commander" on following page



Colonel Richard Pratt
Commander, Tulsa District

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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ways to expand recreation at our lakes,” said Col. Michael Teague, former Tulsa District Commander during remarks at the ceremony. “CrossTimbers came out of a public/private partnership and it has led to the ability for us to work together to get this first-of-its-kind cottage built at Skiatook for Wounded Warriors. The military believes that a fallen comrade is never left behind, and there are things we can do to help them, such as this cottage. There is no way the Corps would have been able to get this cottage built for our Soldiers without the partnership with CrossTimbers and Folds of Honor and their ability to do this.”

Veteran Robert Jackson, who lost both his legs while serving in Afghanistan in 2003, cut the ribbon as his wife and six children watched. Jackson voiced his concerns about the wellbeing of wounded vets and noted that 22 veterans committed suicide in May alone.

Retired Army Major Ed Pulido, senior vice president of Folds of Honor, said the cottage is a message to the families that their country loves them, supports them, and welcomes them home.

“At the end of the day, when you’re recovering from a traumatic brain injury or post traumatic stress, this is a great place for recovery,” said Pulido, who lost part of his leg while serving in Iraq in 2004.

A \$250,000 investment of donated funds from the Folds of Honor Foundation, an organization that provides spouses and children of the wounded and fallen educational scholarships, funded the cottage. Now retired Oklahoma Air National Guard pilot Major Dan Rooney founded the Oklahoma-based organization.

Veteran Robert Jackson, cuts the ribbon at the Honor Cottage at CrossTimbers Marina at Skiatook Lake.



“Commander’s Perspective” continued from previous page

which provides cost-free, recreation opportunities to veterans and their families at our Skiatook Lake, sponsored by the Folds of Honor Foundation. Another innovative accomplishment is the installation of an aeration system to support the popular trout fishery below Tenkiller Dam. This issue also covers the updated water supply agreement with the State of Kansas for the John Redmond Reservoir, which increases the lake level by two feet and provides a significant increase in the water supply storage to account for lost capacity due to extensive sedimentation. Finally, we continue to support the State of Kansas in their endeavor to dredge the reservoir to restore the original storage capacity, estimated to be 40% reduced by the 50 years of sedimentation.

As with each of these achievements and on-going projects, we are very proud to be associated with our great partners who continuously work through challenges in order to do what’s right for the Nation and its citizens. We face challenging and complex times where successful **public-private partnerships** may provide better opportunities to improve the desired access and level-of-service to the industrial and recreation elements of Corps projects during a period of constrained federal funding – and we continue to look for opportunities to do so. We must continue to work diligently to sustain our aging infrastructure so that it remains resilient and reliable for future generations.

ESSAYONS!

Tulsa District's Focus on Civil Works

New mechanical systems to help trout fishery below Tenkiller Dam

The stream below Tenkiller Dam in Oklahoma is home to a popular trout fishery; however, during the 2011 drought, low dissolved oxygen levels, and high water temperatures resulted in a fish kill of trout and other types of fish.

As a result of a multi-agency effort, a two-part mechanical solution was developed to prevent further fish kills below the dam.

"What happens is that below the dam, the water level gets so low and the temperature gets so hot that there's no oxygen to support the fishery so the fish basically suffocate," said Richard Hatcher, Oklahoma Department of Wildlife and Conservation Director (ODWC).

"The new mechanical solution ensures that in times of stress there will be enough oxygenated water coming into the area," he said.

Although one of the congressionally-authorized purposes of Tenkiller Lake is for fish and wildlife, there is no water allocated in the lake for that purpose and all water storage is contracted to other users. The Oklahoma Department of Wildlife and Conservation relies on limited donated storage to release water for the fishery. The mechanical system will help ODWC better utilize that donated storage.

The first part of the new system is a low flow pipe that transports water from the surge tank at the hydropower plant to the stream. Prior to the low flow pipe, there was only one mechanism to release water for the trout fishery and it had a minimum release of 150 cubic feet per second. At certain times, this was more water than ODWC wanted released.

"This will allow for smaller and better controlled releases of donated water so that we have higher dissolved oxygen levels, lower water temperatures and more water available downstream," said Kent Dunlap, Tulsa District Chief of Natural Resources.

With the low flow pipe, as little as 50 cubic feet can be released, unlike the earlier mechanism that would waste thousands of gallons of water.

"You couldn't control it," said COL Michael Teague, former Tulsa District Commander. "It's like opening the garage door when you want to let your dog out."

Another benefit of the low flow pipe is that it will be remotely controlled from the Fort Gibson powerhouse so releases can be changed around the clock. In the past, when the gates were used for releases late in the day, the releases needed to continue until personnel arrived in the morning to close the gates.

The second part of the mechanical system is a Supersaturated Dissolved Oxygen System, or SDOX, that will target an isolated pool below the powerhouse where the 2011 fish kill occurred. ODWC can operate the system when the dissolved oxygen levels reach critical lows in that area.



Water gushes from the low flow pipe system into the stream below the Tenkiller Dam. The low flow pipe system transports water from the surge tank at the hydropower plant to the stream.

Continued on following page

"It's available to oxygenate the water in the sluice pool area when we have really critical low dissolved oxygen times," Dunlap said.

He compared the SDOX to an elephant gun in that you don't use often, but when you do it is definitely needed.

The low flow pipe system and SDOX were the result of a partnership between the Corps of Engineers, ODWC, Southwestern Power Administration, U.S. Fish and Wildlife Service, Oklahoma Water Resources Board, Sequoyah Fuel, Tenkiller Utilities, Trout Unlimited, and Tulsa Fly Fishermen. A partnership that Teague called critical to the project.

"All of the agencies had different concerns and also different resources they could contribute to the project," he said. "No agency could have done it alone."

In addition to the mechanical system, ODWC has placed dissolved oxygen monitors along the stream.

"This will allow us to collect very important data in the future to see what the situation is, how the fishery is being affected and when we need to implement these measures that we have in place to keep the fish alive," he said.

The oxygen monitoring, combined with the low flow pipe and SDOX, will help to ensure that the fishery continues to thrive.

"Thousands of people come to the area each year to fish," Hatcher said. "Not only is it important to the local economy, but it's also great for people to come and just enjoy the beautiful surroundings out here."

Visitors fish in the stream below Tenkiller Dam. During the summer of 2011 drought, low dissolved oxygen levels and high water temperatures resulted in a fish kill below the dam.



The Supersaturated Dissolved Oxygen System will help the Oklahoma Department of Wildlife Conservation pump supersaturated dissolved oxygen directly into an isolated pool below Tenkiller Dam in times of critically low oxygen levels.



From left, Scott Hood, Tulsa Fly Fisheries, Chris Turner, Director, SWPA, COL Michael Teague, U.S. Army Corps of Engineers, Tulsa District, Commander, Richard Hatcher, Director, ODWC.



Lock & Dam 18 repaired, open for business

The Newt-Graham Lock and Dam 18 on the McClellan-Kerr Arkansas River Navigation System has returned to full operation following a number of repairs to the down stream gates.

For several months, the Corps monitored leaks through the downstream miter gates. It was decided to schedule a dewatering of the lock chamber to discover the cause. With the gates exposed, several areas of damage were uncovered.

According to Johnny Bell, Tulsa District Technical Support Branch Chief for the U.S. Army Corps of Engineers, "When the lock was dewatered, a number of additional repairs showed up that needed fixing to avoid future unscheduled shut downs." The extra repairs delayed the reopening of the lock by two days.

One suspected problem was confirmed: the rubber seal on the

bottom of the miter gate was damaged. The bottom seal and backing plate were badly deformed and in some spots, torn loose. Drift and debris had jammed against the concrete sill and the seals backing plate causing large gaps between the girder and the chamber base.

Rodney Beard, Tulsa District Navigation Project Manager said, "You never fully know the extent of damage or repairs that are needed until the chamber is emptied. That is why we plan for scenarios A thru Z and ensure our team is prepared for anything."

Early during the dewater, an unscheduled repair was discovered. Debris had damaged a portion of the steel girder in a high stress area of the miter gate. Repair required cutting out the damaged section and welding in a new piece. Prior to repair, the 185-ton gate was supported with hydraulic jacks. Scheduled repairs

had to be postponed while the gate was immobilized. Once the gate was repaired, it had to be carefully realigned for smooth operation.

When it became necessary to delay reopening the lock, Steve Taylor, President of Johnston Port 33, told Corps Operations Manager Kenneth Todd, "We fully understand your dilemma. We all have had projects that did not go like we had them on paper. You and your team don't panic, we know the Corps is doing the best they can to work out those unforeseen problems."

COL Richard Pratt, Commander, Tulsa District, U.S. Army Corps of Engineers said, "With the damages discovered during the dewatering, the time required to complete the additional repair work was time well spent to help assure future uninterrupted operations of an important part of our nation's infrastructure."

Newt-Graham Lock and Dam 18 on the McClellan-Kerr Arkansas River Navigation System has returned to full operation following repairs to down-stream gates.



A poster child for sedimentation:

Dredging John Redmond Reservoir



Sedimentation cakes the shoreline above John Redmond Reservoir. Sedimentation is flowing into the reservoir at a rate faster than anticipated causing issues with water supply storage for the Kansas Water Office. As a result, the water office is planning a first-of-its-kind dredging initiative at the reservoir.

Lakes within the U.S. Army Corps of Engineers, Tulsa District, are designed to accumulate sediment as a natural part of their lifespan, but studies by the Corps and the state of Kansas determined that sediment is accumulating in the conservation pool of John Redmond Reservoir, Kansas at a rate faster than originally projected.

As a result, in a first-of-its kind effort at a federal project, the Kansas Water Office plans to dredge the reservoir in a multi-year effort that will help to regain some of the lost water storage capacity. John Redmond Reservoir, which was completed in September 1964, currently provides water supply for 13 cities, one wholesale water supplier, five industries and the Wolf Creek Nuclear Generating Station.

“From 1964 to 2010, John Redmond has lost an estimated 42 percent of its conservation pool storage capacity and it continues to lose on average 739-acre-feet of storage to sedimentation each year,” said Susan Metzger, Chief of Planning and Policy at the Kansas Water Office. “The state is proposing to dredge the sediment in John Redmond in a phased approach, removing about 600,000 cubic yards of sediment each year.”

In addition to dredging, another major component of the State’s plan to best utilize the reservoir for water supply storage was a reallocation. A reallocation changes the amount of water designated for certain uses such as flood control and redesignates it for other uses such as water supply.

“The reallocation is a federal action to reallocate storage from the flood control pool to the conservation pool for water supply use,” said Steve Nolen, Tulsa District Planning Division Chief. “It involves a two-foot pool increase, so normal lake level increases from elevation 1039 to 1041 permanently.”

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From left, Tracy Streeter, Director, Kansas Water Office, Kansas Governor Sam Brownback, and COL Richard Pratt sign the reallocation contract.

This reallocation was recently approved by the Assistant Secretary of the Army for Civil Works Jo-Ellen Darcy. The resultant water supply agreement was signed into effect by Kansas Governor Sam Brownback, Kansas Water Office Director Tracy Streeter, and Tulsa District Commander COL Richard Pratt, September 5, 2013.

"The two-foot pool rise at John Redmond will increase the state's storage capacity by a little more than 17,000 acre feet," Metzger said. "The reallocation is a necessary and vital piece to ensuring the lake remains a viable water source." However, even with the reallocation, sediment will continue to accumulate unless dredging is done.

Though this is the first time a non-federal agency has attempted a major initiative such as this on a federal project, this is not the first time the Kansas Water Office has performed dredging on a lake. In 2010, about one million cubic yards of sediment were dredged from Mission Lake in Brown County, Kansas. "Dredging of this lake, which is a small public water supply lake, has served as a pilot project for not only future small public water supply lakes, but many of the lessons learned can be applied to dredging at John Redmond Reservoir," Metzger said.

During their planning process, representatives from the Water Office, the Corps of Engineers, and other Kansas state agencies studied some dredging projects on canals and lakes performed by the Ohio Department of Natural Resources. According to Metzger, many of the elements of the Ohio program, such as the methodology, landowner coordination and funding sources, may be used at Redmond.

The state is identifying a design dredge team through a procurement process that will include experts in dredging, engineering and construction. Another step currently ongoing is the preparation of an Environmental Impact Statement by the Kansas Water Office with assistance from the Corps of Engineers. An EIS, a requirement of the National Environmental Protection Act, must be completed when work such as this is done on federal land. The EIS

will identify environmental impacts to the reservoir, and presents alternative actions and consequences ranging from completely dredging the lake to taking no action at all. During the preparation, public meetings were held to solicit input from the general public and gather data. After analysis, a Preferred Alternative is presented and finally, a Record of Decision, expected by the end of 2013, is signed. In addition to the EIS, the Kansas Water Office must apply for a Section 408 permit from the Corps of Engineers that allows them, as a non-federal entity, to modify a federal project. As part of that process, a technical review is completed and, if there are no issues, the permit is granted. The current plan is to use two areas on federal property below the reservoir as dredge material disposal sites. To do this, the Water Office will apply for a real estate outgrant from the Corps of Engineers. This will allow the State to begin the project and use those sites while they work to identify and secure other dredge material disposal sites on nearby private lands. Once all of these steps are taken, dredging could begin as early as March 2014.

While dredging won't restore the reservoir to its original depth, the Kansas Water Office is also addressing ways to reduce the amount of sedimentation coming into the lake. They believe that dredging, combined with other sediment reducing activities in the watershed such as stream bank stabilization, will help regain some of the lost capacity by reducing the amount of sediment coming into the lake, allowing the dredging to be more effective. In addition, sites with significant eroding stream banks were identified on federal land along the Neosho River above John Redmond.

"These sites may be areas where the Corps of Engineers and the U.S. Fish and Wildlife Service can implement sediment-reducing stream bank stabilization practices on federal land," said Metzger.

As the Kansas Water Office plan and implement dredging at John Redmond, Metzger says they will only be as successful as their partnership with the Corps.

Chief of Engineers tours Pantex

Lt. Gen. Tom Bostick, Commanding General of the U.S. Army Corps of Engineers, visited Pantex on January 7, 2014 for briefings and a tour of the \$65 million High Explosive Pressing Facility project.

The facility now is more than 90 percent complete and remains under cost and within budget.

After his tour, Bostick praised the teamwork and collaboration between the National Nuclear Security Administration, Pantex contractor B&W Pantex, the Army Corps, Kiewit Building Group, the main construction contractor, and other contractors for their work on a very complex, highly technical project.

"You can see it's been a very collaborative process," he said. "I have been informed and read about the teamwork, but it's good to see it firsthand on the ground."

The 45,000-square-foot state-of-the-art facility will provide safer, more reliable high explosives production at Pantex, which assembles, modifies and dismantles the nation's nuclear weapons. High explosives are used to provide the initial blast needed to spark a nuclear detonation in an atomic weapon.

The new facility will replace six older buildings — two of which were built during World War II — and combine them under one roof, according to information from B&W Pantex.

Once the facility becomes operational in 2016, high explosives will be pressed into molds at immense pressures and carefully machined into hemispheres, which surround the plutonium core of nuclear weapons. A high-explosive detonation provides the force and pressure needed to compress the weapon's nuclear materials to initiate an atomic blast.



Lt. Gen Tom Bostick tours the HEPF facility



From left, Jeff Halvorson, Lt. Gen. Tom Bostick and Col. Richard Pratt participate in a tour of the HEPF facility.

Tulsa District welcomes new commander



USACE Southwestern Division Commander BG Thomas Kula presents the command guidon to incoming USACE Tulsa District Commander COL Richard Pratt

Colonel Richard A. Pratt assumed command of the U.S. Army Corps of Engineers, Tulsa District, in a ceremony at the Armed Forces Reserve Center in Broken Arrow, Friday, July 12.

Pratt succeeds COL Michael J. Teague, who was commander for the past three years. COL Teague retired from his 28-year Army career immediately following the change of command.

COL Pratt comes to Tulsa from the Navy War College in Newport, Rhode Island. A native of Cape Cod, Mass., COL Pratt earned his commission from Norwich University, The Military College of Vermont, in 1990.

Most recently, COL Pratt served as the Engineer Organizational Integrator in the Force Management Directorate of the Deputy Chief of Staff, G-3/5/7.

COL Pratt earned a Master of Science Degree in Education from Long Island University in 1998.

He is a registered Professional Engineer.

Corps booth at fair wins a top honor

USACE water safety booth staff interact with visitors at the Kansas State Fair. The booth won the “reserve grand champion” ribbon for the caliber of appearance of the booth and the staff, and the value it provided to fair visitors.



Corps transfers 600 acres of land to City of Denison, Texas



In a ceremony at Lake Texoma, a document celebrating the transfer of 600 acres of Lake Texoma shoreline to the City of Denison, Texas, was signed by Congressman Ralph Hall, Texas 4th District, Mr. Jared Johnson, Mayor, City of Denison, Brigadier General Thomas Kula and Developer George Schuler.

The federal Water Resources Development Act of 2007 authorized the Secretary of the Army to sell land for improvement projects that provide for the development of water related resources.

The City of Denison paid \$1.8 million for the acreage that includes nearly nine miles of shoreline. The city will, in turn, sell most of the property to Schuler Development who intends to invest \$215 million in infrastructure including restaurants, shops and homes.

USACE responds to FEMA mission in aftermath of killer OK tornadoes

Employees of the U.S. Army Corps of Engineers (USACE) were among the first on the scene following the May 2013 tornado outbreak in Oklahoma.

Members of the USACE Emergency Support Function III (ESF3) deployed to the scene hours after destructive tornadoes ripped through several areas in the state, with the most extensive damage in the cities of Shawnee, Moore and El Reno.

The USACE ESF3 cadre is coordinated out of USACE headquarters at the request of FEMA in disaster situations where the damage and debris are such that debris management assistance in support of the National Response Framework is necessary.

The ESF3 provides assistance to local governments in developing debris removal contracts and assisting with environmental issues as part of the FEMA Region VI disaster response.

At the on-set of the disaster, Tulsa District Commander COL Michael Teague declared an Emergency Situation for the district and the Emergency Operations Center (EOC) activated to round-the-clock operations. The ESF3 cadre stood ready to provide assistance in any way necessary.

Tulsa District Emergency Management Specialist Kerri Stark deployed to Oklahoma City as soon as the roads opened, arriving in the area by 7:00 p.m., May 20. Stark acted as USACE liaison to the State and local governments at first, and then transitioned to ESF3 Assistant Team Leader when the cadre activated. Greg Deleon-Guerrero acted as Team Leader during the first week of the response. The ESF3 team was located at the Joint Field Office (JFO) in Oklahoma City and was comprised of Stark and nine debris subject matter experts (SME.)

In the EOC at the District Headquarters, the Incident Management Team met several times per day to follow the status of the search and rescue mission and subsequent recovery mission. COL Teague traveled to the disaster scene and met with local, state, and federal officials in the State EOC, while Deputy Commander LTC Don Nestor and District Emergency Manager William Smiley monitored the emergency at the District Office. Ten days after the tornado outbreak, the Tulsa District Commander declared an end to the emergency situation and the EOC returned to normal operating hours.

The USACE ESF3 mission for the 2013 Oklahoma tornado outbreak was one of debris management assistance and technical advice. The cadre provided assistance on contract issues and the development of debris management strategy, with the local, state and federal governments handling the debris removal. The team also provided feedback to FEMA on the Sandy Recovery Act Alternative Procedures for Public Assistance Pilot Program in use as part of this mission.



The U.S. Army Corps of Engineers ESF#3 Team Oklahoma Tornado 2013: Left to right back row: Whit Barton (Debris SME), Bob Chitwood (Debris SME), Cecil Jernigan (Debris SME), Olen Burditt (Debris SME), Greg Williams (Debris SME), Terry Sharpless (Debris SME), Wes Trammell (Debris SME), Greg Deleon-Guerrero (TL) Kerri Stark (ATL), Peter Navesky (Permanent Cadre)

Director of Contingency Operations and Office of Homeland Security, Headquarters, USACE, Karen Durham-Aguilera, P.E., Southwestern Division Commander BG Thomas Kula, COL Teague, Disaster Program Manager William Irwin, and SWD Chief of Operations and Readiness Division Anthony Semento visited the JFO May 31 to meet with FEMA and State Emergency Management officials and to see damaged areas. Kula, Teague, and Semento left the city before severe weather and tornadoes struck that evening, but Durham-Aguilera, Irwin and the ESF3 team sheltered in place at the JFO as the storm passed over. None of them was injured.

The USACE has ESF teams across the nation that stand ready to deploy within hours of a disaster at the request of FEMA as part of the National Response Framework.

Members of the teams undergo extensive initial training for certification to serve as first responders.

Tulsa District's Focus on Military Construction

USACE Tulsa District Eagle Eye Winners

The Tulsa District U.S. Army Corps of Engineers (USACE) named the High Explosives Pressing Facility (HEPF), Pantex, Plant, Texas as the top safety construction project for 2012 and winner of the Eagle Eye Construction Safety Program Award.

The Eagle Eye winners are the Kiewit Builders Group of Fort Worth, Texas, for Contractor of the Year, the USACE Pantex Resident Office for Construction Office of the Year, and Donnie Lankford, Tulsa District, Pantex Resident Office, for Construction Representative of the Year.

The Eagle Eye program seeks to achieve zero accidents at USACE construction sites by creating a competitive environment focused on safety. Through the program, the USACE works with contractors to deliver a quality product in a safe and productive work environment on projects such as the HEPF. The District Safety Office conducts quarterly inspections of construction projects and scores the contractors on the number of accidents, including property, lost time and no lost-time, that occur at the site.



Tinker AFB Child Development Center

The new Child Development Center at Tinker Air Force Base was completed in August 2013. This facility included multi-purpose rooms, isolation rooms, a kitchen area, administrative space, and a playground area.



FY14 Top 15

Tulsa District Unfunded Maintenance Priorities

By making prudent use of FY13 emergency supplemental and regular Operations and Maintenance appropriations, Tulsa District has been able to successfully address and reduce the backlog of critical maintenance and repair of its water resource infrastructure. Every effort is being made to reduce operations costs to be able to invest more appropriated funds into preventative and critical major maintenance. However, the facilities continue to age.

The following are Tulsa District's Top 15 FY14 unfunded priorities for critical maintenance. Critical maintenance are repairs 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 McClellan Kerr Arkansas River Navigation System, Oklahoma

Repair Short Guide Wall at Lock 18 (Newt Graham)

IN 2008, the a tow was headed downstream with 10 loaded barges when it struck the upstream short wall at Lock 18. As the vessel approached Lock 18, the rear of the tow moved to the right causing the head to steer left across the channel. There is now a gap in the expansion joint between two sections of the short wall, Monoliths L-7 and L-8, which is approximately 6 to 8 inches wide on the lock side and a few inches wide on the land side. The Lock should be repaired by demolishing and removing all damaged concrete, and rebuilding the wall to its original specifications. A failure to repair lock structures in a timely manner would mean that structure is more susceptible to collapse. In this instance, should a collapse of the wall occur, this would cause an unexpected closure of the lock channel.

Repair Cost Estimate: \$5.5 million



2 Pat Mayes Lake, Texas

Seal Leaks in Conduit

Pat Mayse conduit has several leaks through monolith joints and cracks. Some of the leaks are now a strong enough to carry surrounding embankment material with them. Large flows through the conduit could go back through these same joints and cracks into the fill and wash away material or form a more serious seepage path. Proposed project is to inject a hydrophobic polyurethane sealant into all of the leaky joints and cracks.

Repair Cost Estimate: \$180,000



3 Webbers Falls Lock and Dam, Oklahoma

Repair Lock Pintle Ball

Downstream landside miter gate is operating jerkily, indicating it is sticking on its pintle ball. If it gets stuck, the navigation system from Lock and Dam 16 to Port of Catoosa will be shut down. A new pintle ball and all related parts should be purchased and installed.

Repair Cost Estimate: \$750,000



4 Webbers Falls Lock and Dam, Oklahoma

Repair Miter Gates

The downstream miter gates need to be checked for fatigue cracks, and repaired. Several structural members near tailwater level have laminated rust and should be rehabilitated and painted. Failure of structural members could cause the gate to cease functioning resulting in an unscheduled shut down of the navigation system.

Repair Cost Estimate: \$1.5 million



5 R.S. Kerr Lock and Dam, Oklahoma

Rehabilitate Tainter Gates and Operating Equipment

The 2008 Periodic Inspection, as well as the 2009 Annual Inspection reports, indicated 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 more than 40 years old and need immediate repair to extend their useful life.

Repair Cost Estimate: \$14.0 million



6 Webbers Falls Lock and Dam, Oklahoma

Repair and Re-paint Tainter Gates

The gates were last rehabilitated and painted between 1998 and 2001. Floating debris swirls in the tailwater, and has rammed members and worn the paint off lower members over the past few years. Cycles of rusting and wear have been going on for the past 11 years. The constant ramming by large driftwood has bent, cracked, and knocked out braces. Two gates are missing members. In addition, some tight or hard to access locations were not well painted, and leaks and splashes are causing them to rust. Several bearings in the pillow bushings for the torque rods on the gates have slipped out of their housings. The repairs and painting are necessary to ensure that the tainter gates continue to operate and meet their intended function.

Repair Cost Estimate: \$9.5 million

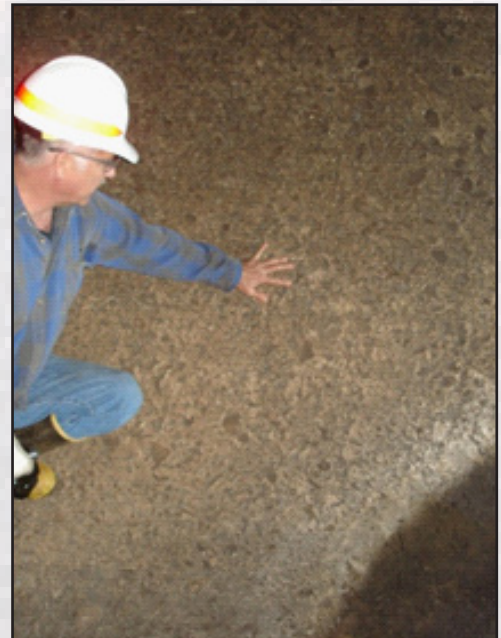


7 Denison Dam, Lake Texoma, Texas and Oklahoma

Replace Service/Flood Gates

Both the 2002 and 2007 Periodic Inspection reports indicated the service/flood gates leak profusely. The gates, their frames, and the sluiceway liners are more than 50 years old, and accumulative corrosion and cavitation has caused significant damage. There is also some cavitation of the concrete in the transitions. A contract was awarded in FY10 to repair one emergency gate. In addition, FY11 funds were used to complete the design of new service/flood gates with a contract awarded in September 2011 for three new flood gates and the turntable. That leaves three more services gates to replace and the frames, liners, and transitions to repair.

Repair Cost Estimate: Three of the six service/flood gates and all six frames, liners, and transitions remain unfunded at a total estimated cost of \$4.2 million. Accelerated wear and corrosion will result if funding is not provided. Continued deterioration to key structural members and surrounding conduit is expected.



8 Pearson-Skubitz Big Hill Lake, Kansas

Repair and Paint Intake Tower Service Gates

The well gates and service gates in the intake have not been painted since construction of the intake tower and are now extremely rusted. Some rust blisters have caused deep corrosion pits into the steel. The gate frames and guides are also in need of repairs and painting.

Repair Cost Estimate:
\$2.1 million



9 Copan Lake, Oklahoma

Repair and Re-paint Tainter Gates

The gallery sump pump outlet sprayed water onto Gate 2's left strut arm since construction. The years of spray have caused severe corrosion, which has eaten away a lot of steel from the middle and bottom members of the left strut arm. Gate 2 needs rehabilitation and painting as soon as practical. The other tainter gates have scattered rust spots, and the 25-year-old paint has broken down, so all four gates should be painted.

Repair Cost Estimate: \$3.3 million



10

Broken Bow Lake, Oklahoma

Seal Leaking Gates in Diversion Tunnel

The low-level gates in the diversion tunnel were used during construction but can't be operated with a full head on them. The gates are leaking more each year and rusting away. The outlet of the diversion tunnel is steel lined and very rusty. Failure of the gates could result in loss of the reservoir pool. The planned approach includes dive investigation, bulkhead construction, and permanent sealing of the tunnel.

Repair Cost Estimate: \$4.1 million



11

Skiatook Lake, Oklahoma

Repair and Paint Service Gates and Liners and Low-Flow Valves-

Severe corrosion and pitting were 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, rehabbing 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 quality 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: \$2 million



12

R.S. Kerr Lock and Dam, Oklahoma

Replace Lock Pintle Ball

Downstream landside miter gate is operating jerkily, indicating it is sticking on its pintle ball. If it gets stuck, the navigation system from Lock and Dam 15 to Port of Catoosa will be shut down. A new pintle ball and all related parts should be purchased and installed.

Repair Cost Estimate:
\$850,000



13

El Dorado Lake, Kansas

Repair Emergency Gates and Bulkhead

Both service gates still slowly drift downward when in an open position. Personnel from Marion have to constantly re-set the gate openings back to positions required for releases. The service gates also occasionally vibrate when they are open between two to four feet and the lake level is above 1346.0. The vibrations have caused damage to the shafts and Service Gate 1. In an effort to stop the drifting of the gates, the gate cylinders were honed out and new pistons and seals were installed in April 2003. The rehabilitation work did not stop the drift but did slightly decrease it. The gate vibration still occasionally occurs.

Repair Cost Estimate: \$1 million



14 Denison Dam, Lake Texoma, Texas and Oklahoma

Replace Service Gate Hoist Equipment

Existing hoist machinery to include gear boxes, brake drums, motors, and controls is 70 years old and may be undersized for the new gates that are being installed. If the equipment is not replaced it could result in the inability to raise the gate to pass floodwater or in a gate being stuck in the open position.

Repair Cost Estimate:
\$3.2 million

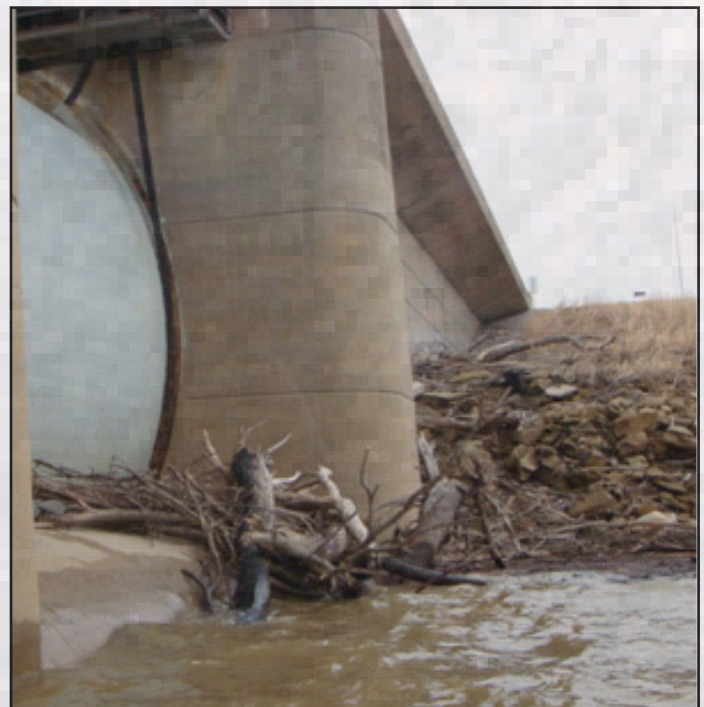


15 Hulah Lake, Oklahoma

Repair Tainter Gates

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 pier and weirs. New chains were installed in a previous fiscal year but the gates and operating equipment still need to be rehabilitated and re-painted. There was advanced rust at the strut arm/girder connection points. The paint has broken down and is chalky. The gates are more than 50 years old and require immediate attention to ensure the gate system does not further deteriorate. A contract was awarded in FY13 for repair of the bulkhead that will be used in completing needed repairs and for removal of debris from the embankment and abutment gates.

Repair Cost Estimate: \$6 million



Arkansas River Basin

Augusta Levee Local Flood Protection Project

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

Under Construction

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.

On September 30, 2011, the contract for

construction of the Augusta Levee Project was awarded to Terra Construction, Inc., Oklahoma City, Oklahoma, for \$6,661,374. Construction efforts are currently underway with completion expected in May 2014.

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 \$209 million, multi-phase Dam Safety project is to correct deficiencies 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 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. A \$41.1 million contract awarded in 2008 allowed for the first phase of the auxiliary channel excavation. 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 riprap, a channel cut-off wall, new piezometers, and extension of the current relief wells were included in the contract. In December 2010, a substantial portion of the contract was completed.

The next phase of the project was constructing a new Highway 58A bridge, which spans the newly constructed phase 1 auxiliary channel. The bridge is a 540-foot long, six-span concrete bridge; the contract was awarded in August 2010 for \$4.1 million and was completed in January 2012.

The project's most recent contract award occurred in September 2011, with the award of the weir and hydraulic structures contract. This contract includes a reinforced concrete weir, intake conduit, wet well, upstream and downstream concrete aprons, and fuse gates. The contract was awarded to ASI Construction for \$37.5 million and is currently under construction with a contract completion date scheduled for October 2014. The weir is 481 feet long, 65 feet wide, and 36 feet deep while the nine fuse gates are 53 feet long, 21 feet wide, and 32 feet tall. The concrete structures total 65,000 cubic yards of concrete and 1,250 tons of reinforcing steel.

Along with the weir and hydraulic structures construction activities in 2013, rehabilitation of the existing spillway bridge structure continued and is sched-





uled for completion in October 2013. Lastly, engineering and design for final award of the phase 2 excavation contract was completed. The Phase 2 excavation contract is scheduled for award in August 2014. The entire dam safety modification project is scheduled for completion in December 2016.

Crow Creek Aquatic Ecosystem Restoration

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

Planning

Crow Creek is an intermittent tributary of the Arkansas River that runs through part of Tulsa, Oklahoma. The creek has a drainage area of approximately two square miles. In the first half of the 20th century, the Works Progress Administration (WPA) lined the banks and bottom of the main stem of Crow Creek with hand-placed stone blocks, creating a trapezoidal channel. Much of the stone has since failed or is in poor condition, leading to stream bank and bed erosion in many reaches of the creek.

The ongoing Feasibility Study effort is exploring opportunities for aquatic eco-

system restoration in and along Crow Creek from just upstream of Zink Park to the creek's confluence with the Arkansas River, a distance of about 3,000 linear feet

Fiscal year 2013 efforts focused on incorporating into the feasibility effort the final plans for a Community park area, "The Gathering Place" by the City of Tulsa and the George Kaiser Family Foundation (GKFF). This plan includes demolition of a significant apartment complex (approx. 18 buildings) immediately adjacent to Crow Creek, near Riverside Drive. With this future open space, an opportunity exists to incorporate aquatic ecosystem

restoration features, such as a floodplain bench and constructed wetlands, as part of the Crow Creek Aquatic Ecosystem Restoration Project.

Fiscal year 2014 efforts will be focused on completion of the Feasibility Study effort, execution of the Project Partnership Agreement, and development of the construction contract plans and specifications.

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

Completed June 2013

The purpose of the Environmental Impact Statement (EIS) was 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 evaluated 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 modifications 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 update, changed conditions, and the need to assess lake-wide cumulative effects, the Tulsa District has updated the Lake Eufaula SMP and supplement the MP by updating the land allocation portion. Actions appropriate for updating these plans and preparing the EIS occurred concurrently.

Issues addressed included: (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.

The EIS evaluated the potential impacts of a range of alternatives on recreation and natural resources. The preferred alternative slightly reduced the amount of shoreline allocated to Limited Development and increased the amount of Public Recreation shoreline in the SMP. This alternative changed the MP land use classifications to be consistent with the SMP designations. Limited Development allocated shoreline decreased to approximately 265 miles, which supports a potential maximum of 6,550 docks based upon physical spacing constraints. A vegetative buffer of 45 feet was applied to all new vegetative modification permits with a five year transition period for existing permits. Dock spacing increased to 75 feet, dock suitability zones

were created, and dock access requirements were modified. In addition, several individual zoning requests received and addressed during the NEPA review process were approved.

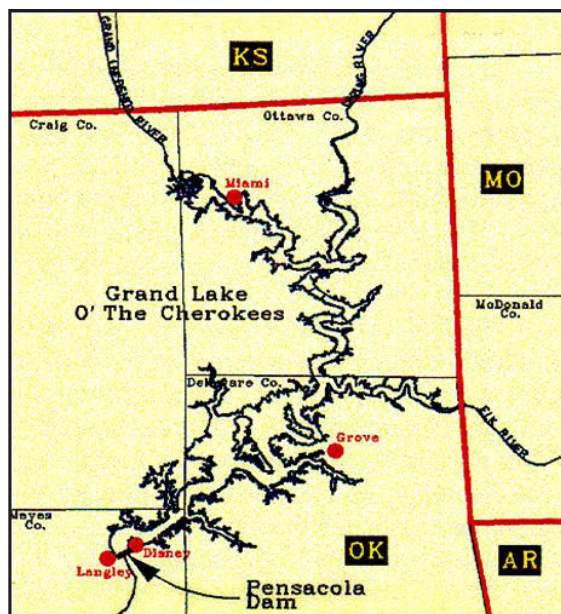
The draft EIS was completed December 7, 2012. A subsequent Notice of Availability was published in the Federal Register announcing Draft EIS completion and soliciting public comment. The Tulsa District held a Public Workshop for the Draft EIS December 19, 2012. The Public comment review period was complete January 22, 2013. The Final EIS was completed May 6, 2013 and a Record of Decision was issued June 7, 2013. The Shoreline Management Plan updated and Mater Plan was supplemented June 17, 2013.

Questions regarding this project may be directed to: Dr. Bryan K. Taylor, Project Manager, Programs and Project Management Division or Mr. Stephen Nolen, Chief, Environmental Analysis & Compliance Branch, U.S. Army Corps of Engineers, Tulsa District, 1645 S. 101st East Avenue, Tulsa, OK 74128-4609. Email: bryan.k.taylor@usace.army.mil or stephen.l.nolen@usace.army.mil

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 manage the flood risk management features. 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 available 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.

FY08-12 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), GIS support and mapping products to complement adjacent area maps created by the Federal Emergency Management Agency. The mapping products are now available to help Ottawa County and the city of Miami, Oklahoma, in making short-term floodplain management decisions. A related effort that was completed in FY13 utilized the mapping, in conjunction with a USACE Silver Jackets Pilot Project Program, to develop a provisional interim risk reduction flood inundation mapping tool for the Miami, Oklahoma area.

Potential future feasibility phase activities that focus on priority flooding issues in the vicinity of Miami, Oklahoma would be dependent upon the participation of a non-federal cost-share sponsor and 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 buy-outs of flood prone structures), changes in the system operation, and combinations of measures. The Grand River Dam Authority has indicated an interest to potentially participate in a cost-shared study that would also include additional assessments associated with Federal Energy Regulatory Commission requirements for proposed future hydropower operations at Grand Lake.

In the short-term, a strategic activity conducted by the Corps is the management 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 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

John Redmond Reservoir is located on the Neosho River in Coffee County, Kansas. The reservoir is located in the lower unit, in a system of three projects in the upper Neosho River Basin in Kansas. The original design for the project included storage in the reservoir to capture an estimated 50 years of sedimentation. Sedimentation has occurred at a higher rate than was originally anticipated and has had a greater impact on the water supply storage than planned for. Storage available for water supply purposes in John Redmond has been steadily depleted by sediment deposition, such that State of Kansas water supply obligations are being infringed upon.

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 John Redmond Reservoir. After evaluation, the USACE determined that the reallocation modification to the conservation pool from elevation 1039.0 to elevation 1041.0 would not significantly increase life safety risk to John Redmond Dam or Hartford Levee. Based on the reduction in risk due to construction of the inverted filter and the associated repair to the toe drain system and the associated construction of the relief well collector system, the life safety risk associated with the Hartford Levee is minimal. The results of the Periodic Assessment for Hartford Levee and the inverted filter completion report were presented to the Dam Senior Oversight Group (DSOG) in July 2012. The DSOG recommended the Dam Safety Action Classification (DSAC) be revised from a DSAC II to a DSAC IV for the Hartford Levee. The DSAC rating has been officially revised by memorandum dated October 22, 2012.

The Tulsa District has drafted comments in response to the Project Guidance Memorandum submitted for consideration by USACE Division staff. Additional flood storage reduction analysis has been conducted and a more detailed hydrologic and hydraulic analysis of downstream impacts and related increases in risk of economic damages have been evaluated. The Environmental Analysis has been updated to include these results.

The reallocation was approved by the Assistant Secretary of the Army (Civil Works) June 14, 2013. Approval of this storage reallocation fulfills requirements of the Senate report to reduce the impact of uneven sediment deposition to the conservation pool and highlight the Tulsa Districts efforts to deliver enduring and essential water resources solutions and further solidify the collaborative partnership that exists between the Tulsa District and the state of Kansas.

John Redmond Dredging Initiative

Ongoing

John Redmond Reservoir was constructed in 1964 by the U.S Army Corps of Engineers (Corps) with an original design life of 50 years. At construction, the reservoir had a surface area of about 9,800 acres and a water storage capacity of 82,200 acre-feet (AF). In 2007, the Kansas Biological Survey completed a bathymetric survey of the reservoir and concluded that the surface area had reduced to about 8,800 acres with a water storage capacity of 50,200 AF. The State of Kansas is proposing to dredge John Redmond Reservoir to restore water supply lost to sedimentation. This sedimentation has attributed to the decreases in surface area and volume of this reservoir. Since 1964, John Redmond has lost an estimated 42 percent of its conservation-pool storage capacity (as of 2010). The estimated sedimentation rate of 739 AF per year is about 80 percent more than the sedimentation rate (404 AF/year) that was originally projected for the conservation pool by the Corps at the time the reservoir was completed.

Dredging sediment from the conservation pool would restore water supply storage for the benefit of the regional water users. Dredging would also restore the lost aquatic habitat for the benefit of public recreation and the lake ecosystem.

The Kansas Water Office (KWO) has initiated a request, through the Corps, to dredge John Redmond Reservoir. During 2013, the KWO continues data collection, completion of environmental documentation, and conducting of stakeholder and public outreach meetings. In addition, the KWO has developed a comprehensive website containing key information regarding this initiative. The website can be found at: http://www.kwo.org/projects_programs/JohnRedmondDredging.html.

The KWO has sought proposals for the design-dredge of John Redmond Reservoir. The Scope of Work for this project will provide a plan with a proposed

process, schedule and estimated costs for completing engineering, acquisition of permits, construction of disposal facilities, mobilization and demobilization, dredging and land reclamation. The KWO reviewed the proposals submitted and has selected Great Lakes Dredge & Dock LLC as the successful bid team. Negotiations and award of a contract are underway.

The KWO continues to work aggressively to complete the package required to request authorization to modify a Corps' project (33 USC 408) and to complete the associate environmental documentation (Programmatic Environmental Impact Statement), as required by the National Environmental Policy Act.

The Corps has partnered with the KWO to provide technical oversight and input to ensure the successful completion of the John Redmond Dredging Initiative. The completed Section 408 package is expected to be submitted during spring 2014. Dredging activities are expected to commence during summer 2014.

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 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 have been provided through an 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, which also included construction of a Least Tern island with rock protection that was accomplished in conjunction with the dredging activities. Design of river structures was accomplished for Pools 2, 7, and 5. Stone structures were constructed in Arkansas to improve self-scour of the river, and design of upland dredge disposal sites was also completed in Oklahoma. Mitigation activities, including aquatic and terrestrial surveys, were performed in both Oklahoma and Arkansas. A five-year project plan has been developed that includes an integrated project breakdown of activities and associated costs that has been vetted through the navigation stakeholders.

This project has not been in the budget since FY05, and all 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-percent federal and 25-percent 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, as well as 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 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, we completed production of Watershed Planning Regional Reports/Basin Technical Appendices; identification of potential measures for use in future formulation of hot spot and infrastructure needs alternative solutions; developed a wastewater infrastructure Capital Needs Assessment and Provider Planning Guide; and prepared/submitted final draft reports.

In 2012, we are developing a series of potential alternatives for addressing specific future gaps; making revisions to final draft reports; and will complete model documentation and training for the Oklahoma Gap Tool, Reservoir Yield Model, and Climate Demand Model. The OCWP update was submitted to the Governor and state legislature in February of 2012.

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 its objectives. The model(s) and model documentation were submitted for agency technical review and were approved.

The final Revised Feasibility Report was completed and approved in March 2013. In order to improve the function of natural lake process, the recommended plan for restoration to Lake Eucha and Spavinaw Lake would be as follows: 1) operational

changes would be made for releases from Eucha dam; 2) layer aeration devices would be installed at Lake Eucha; 3) boulders or other roughness features would be placed in Spavinaw Creek upstream of Spavinaw Lake; 4) a flow routing curtain would be installed up lake of the Spavinaw dam spillway; 5) and layer aeration devices would be installed in Spavinaw Lake, as generally described in the report.

The final report recommends that these improvements be made using the Continuing Authorities Program (WRDA 1996, Section 206). The total construction cost is presently estimated at \$5.2 million. The Federal share of the total project cost is presently estimated at \$3.4 million, and the non-Federal sponsor's share of the project cost is estimated to be \$1.8 million. The exact amount of non-Federal contributions under current cost sharing policy shall be determined prior to project implementation.

Tribal Support Program

10 USC 3036(d)(2)

Continuing

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

In FY13, Tulsa's Tribal Support Team assisted with the completion of several projects in Miami, OK. A Social Service Center, Wellness Center, Independent Elder Duplexes, and Convenience Store are a few of the projects.

This presence of this team has grown in Southwest Oklahoma in FY13 as well. The largest project on that side of the state was a Head Start Facility for the Cheyenne and Arapaho Tribes. Other projects include travel plazas, housing rehabilitations and a community center.

Oklahoma Tribes have also found an inter-



Quapaw Fire and Emergency Medical Services

est in our planning expertise. In FY14, Tulsa District will complete four water resource studies. One is a costshared master planning effort with the Fort Sill Apache Tribe. The Choctaw and Chickasaw Nation will cost share a study on wastewater re-use which is highlighted in another section of this publication. Both of these studies used the Planning Assistance Authority. The other studies the District will complete are a review of the preliminary and partial Section 408 Application from the Cherokee Nation. This document assesses impacts of structures constructed adjacent to Corps dams. This is for WD Mayo Lock and Dam Hydropower Project. The Tonkawa Tribe is fully funding a study to look at the impacts of climate on the vulnerability of two watersheds within their traditional jurisdiction.

In FY14, Tulsa's Tribal Team will continue to provide much needed technical expertise for construction. We expect to participate in six construction projects.

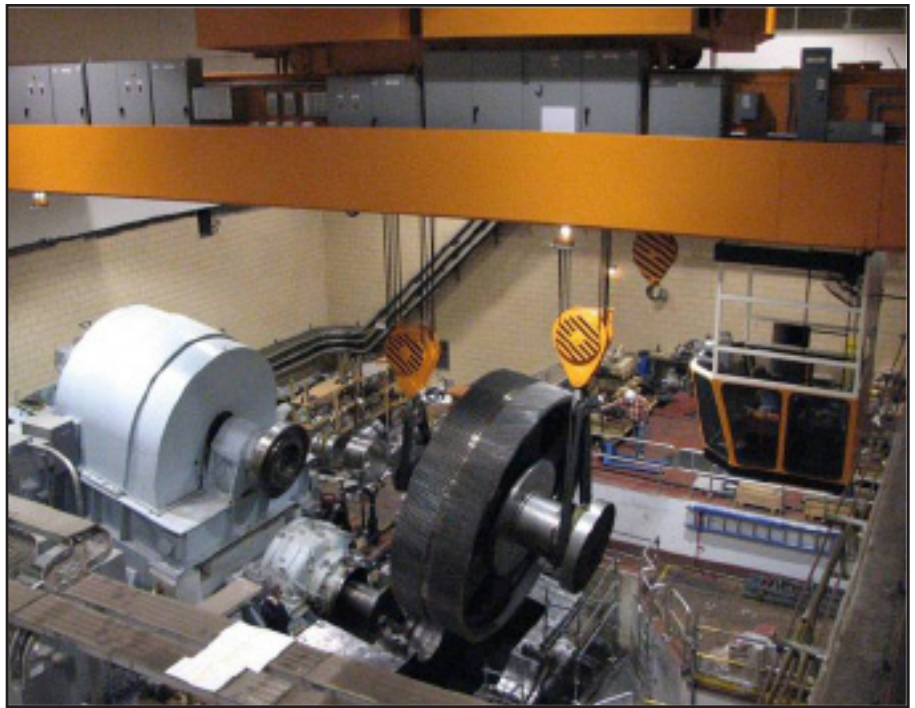
Webbers Falls Powerhouse Major Rehabilitation, Oklahoma

[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 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 percent.

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 more than \$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 January 2016. The project scope includes the turbine rehabilitation, generator rewind, rehabilitation of the intake/tail race gantry cranes, the bridge cranes, 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 ongoing with unit 3 currently producing power and unit 1 being reassembled. Unit 1 is currently scheduled to begin test operation in May 2014. Following the successful operation of unit 1, unit 2 will be taken out of service to begin the disassembly.

In addition to the turbine runners, the

turbine and generator bay bridge crane rehabilitation contract was awarded and completed in 2008 for \$2.3 million, and the intake and tail race gantry crane rehabilitation 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 2013.

In December 2010, a \$4.9 million contract was awarded for the rewinding of all three generators. This project is currently ongoing with the disassembly and rewinding of unit 1 generator. The other two generator rewinds will be sequenced with the continuing rehabilitation work to minimize plant outage time.

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

Red River Basin

Chickasaw/Choctaw Water Resource Study

Section 22 WRDA 1974, as amended

The Choctaw and Chickasaw Nations (Nations) have been reviewing local water and wastewater systems, stream flows and stream water quality throughout the region. Participants have also been meeting with local water and wastewater providers to assess their long-term demands and system needs to achieve future requirements. An initial overview of the information developed so far indicates that evaluating both the water quality benefit of removing treated wastewater from streams and the reduction of potable water demands, particularly peak summer demands, may provide opportunities to provide an overall value that looking at one driver alone would not identify.

This is a 12 month effort that will cost \$200,000. It is being cost-shared at 50 percent between the Tulsa District and the two Nations. This study will be completed in September of 2014.

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 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 EIS is complete. A Notice of Availability (NOA) was published in the Federal Register November 4, 2011. The NOA officially started the 45-day public review period. A public workshop was held in Denison, Texas, November 15, 2011. The Public Review period ended December 21, 2011.

The final EIS was filed with the U.S. Environmental Protection Agency July 20, 2012. A Notice of Availability for the final EIS was published in the Federal Register July 27, 2012. The 30-day Public Review Period concluded August 28, 2012. A Record of Decision was issued October 22, 2012.

With regard to related real estate transaction documents, the survey was completed June 11, 2012. The appraisal was completed October 1, 2012.

The City of Denison submitted signed deed and full purchase amount for lands to be conveyed. The finalized deed and associated real estate transaction documents were forwarded to SWD for review and approval March 1, 2013. The conveyance of Lands to the City of Denison took place March 22, 2013. A signing ceremony was held at Lake Texoma to commemorate the transfer of 635 acres of Lake Texoma Shoreline to the City of Denison, Texas. A commemorative document was signed by Congressman Ralph Hall, BG Thomas Kula, The Mayor of Denison, Texas and Schuler Development. The finalized deed and associated real estate transaction documents have been recorded with the City of Denison.

Red River Chloride Control Project Elm Fork (Area VI)

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. Section 3136 of the Water Resources Development Act of 2007 reaffirmed that operation and maintenance responsibilities would be at full federal expense.

Feasibility Study, Inactive

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.

The State of Oklahoma has expressed a renewed interest in the Area VI element of the Red River project, and reevaluation efforts have been completed through the scoping meeting. Area VI is located on the Elm Fork of the North Fork of the Red River in Harmon County, Oklahoma.

Reevaluation efforts at Area VI, Oklahoma, have included significant progress on the feasibility study. The draft document has been completed and includes the following studies without a chloride control in place: municipal and industrial water uses, agricultural uses, recreational analysis, hydrology and hydraulics analysis, and initial array of design alternatives. This document has completed agency technical review and was submitted for Division endorsement prior to Headquarters review when it was subsequently made inac-

tive. Additionally, significant progress had been made on phase 2 of the studies to evaluate the same studies with a solution for chloride control in place.

Area VI reevaluation will require a 50-50 cost share partner under current USACE policy and will have to be re-scoped to fit the new 3x3x3 Planning Paradigm when resumed.

Red River Chloride Control Project (Wichita River Basin)

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.

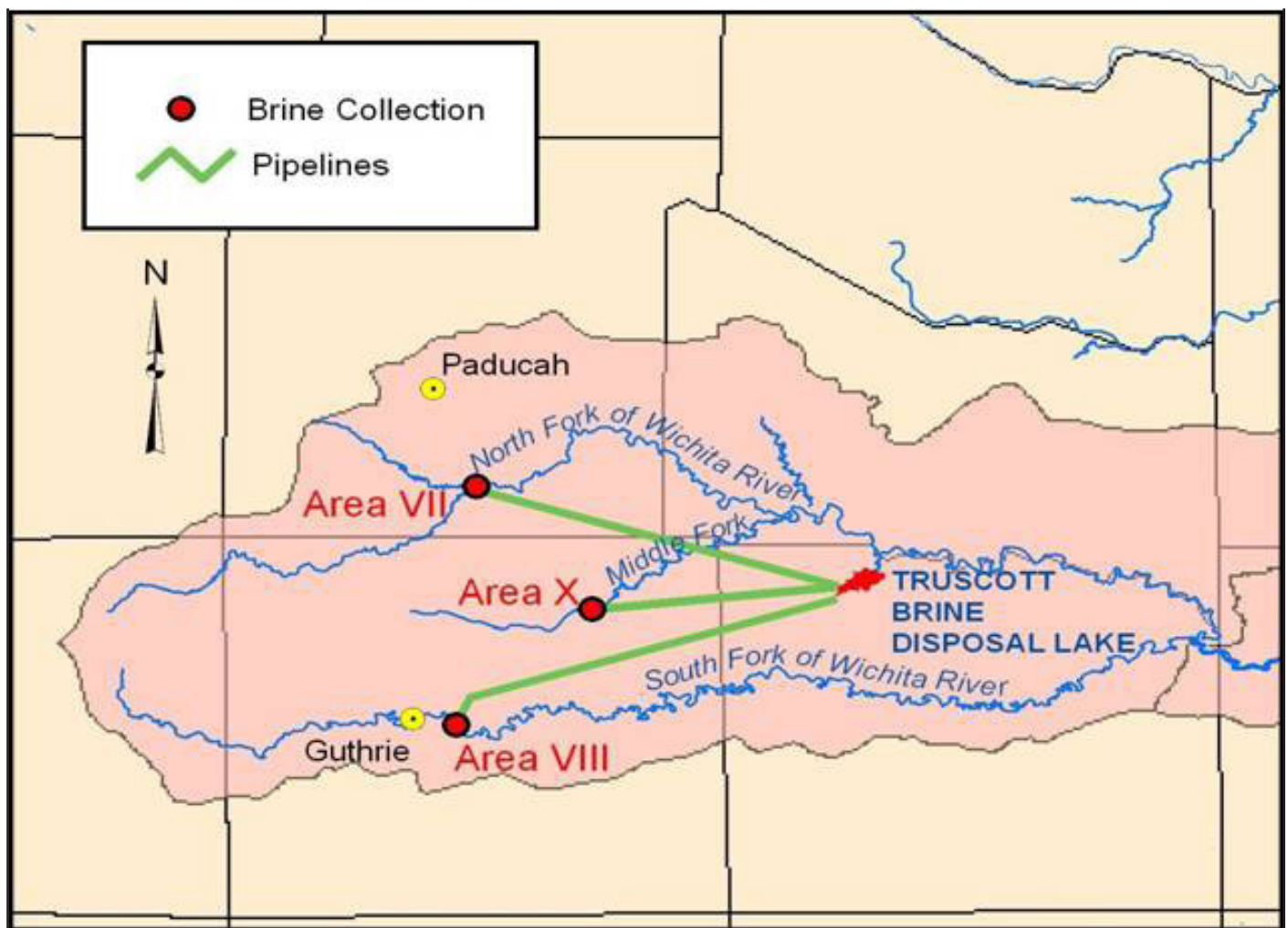
Under Construction

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 reevaluation 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. Due to lack of funding, project construction efforts have been suspended.



Rangers and troopers reward kids for wearing life vests

Tulsa District U.S. Army Corps of Engineers park rangers in Oklahoma and Oklahoma Highway Patrol Marine Patrol troopers handed out tickets to children caught wearing their life jackets this year.

The ticket is a coupon for a free Frosty frozen treat if any child is caught wearing a life vest when they are boating or swimming at an area patrolled by these troopers.

“You Have Been Ticketed for Wearing Your Life Vest” is sponsored by Wendy’s in partnership with Safe Kids to promote water safety to Oklahoma youngsters. State law requires children 12 and under to wear a life vest while on a boat that is underway. It is always best practice for a child to wear a life vest when around water.

Safe Kids partnered with OHP and the Tulsa District Corps of Engineers because of the relationship between the agencies and Safe Kids. “Safe Kids asked OHP troopers and Corps park rangers to hand out these tickets to the children because our rangers and troopers are the ones out making contact with the children and their families,” said Amanda Peters, natural resources specialist, Tulsa District Corps of Engineers.

The ticket is redeemable at any Wendy’s location in Oklahoma. If a child does not own a life vest there are loaner vests available. Safe Kids continues to make loaner life vests available through the Brittany Project at most Corps Lakes and many Oklahoma State Parks offer loaners through the Loaner Board Program.

Wendy’s Corporation, Safe Kids, the Oklahoma Highway Patrol, and the U.S. Army Corps of Engineers want to “treat” kids this summer with a free Wendy’s Frosty. Give your kid a chance to be “ticketed” for wearing a life vest.

