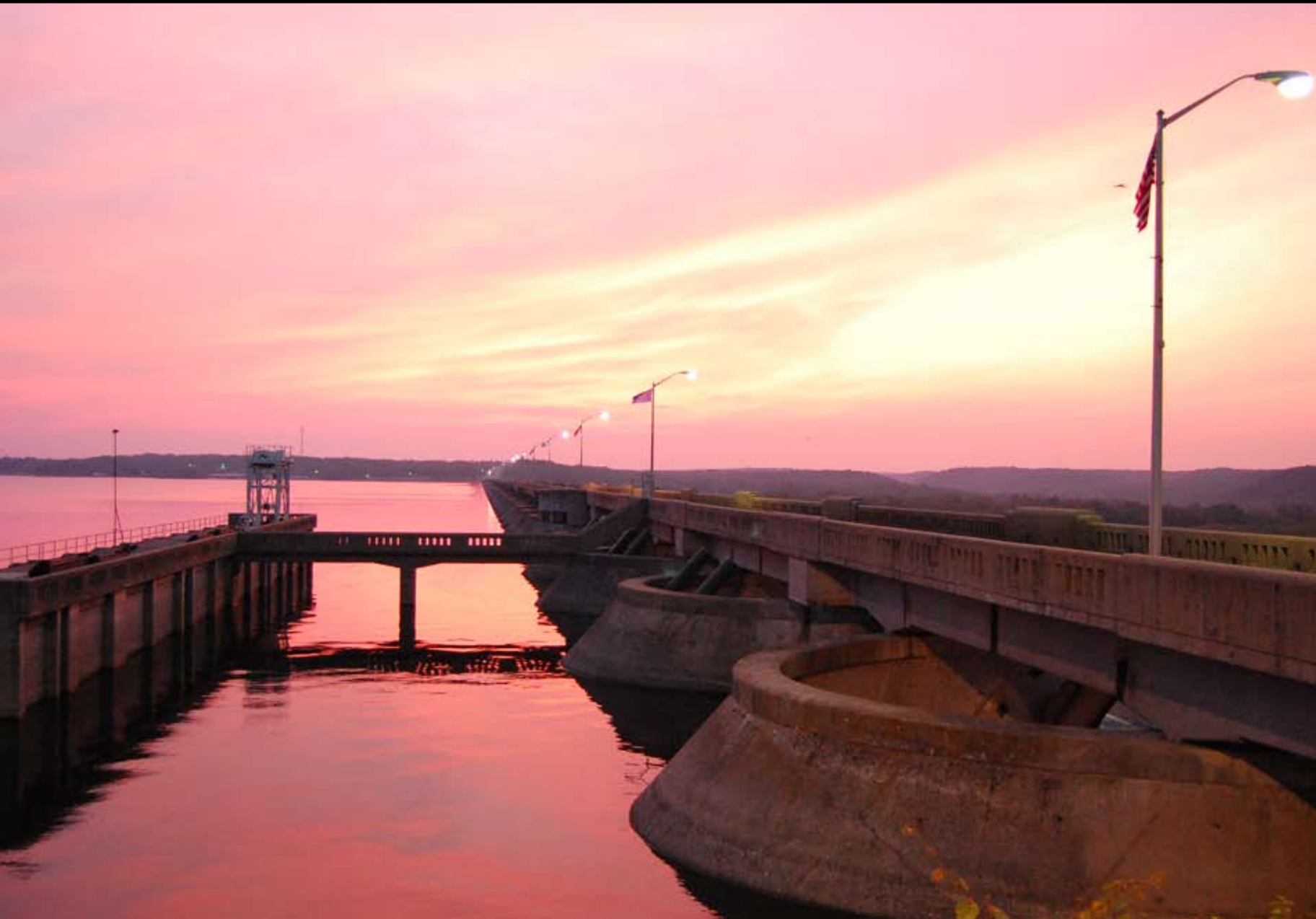


currents

summer 2007

G R A N D R I V E R D A M A U T H O R I T Y



Preserving the waters for generations to come...

GRDA Office of Ecosystems Management

When the Grand River Dam Authority established its Office of Ecosystems Management a little over three years ago, we understood there was much work ahead for this new department. After all, the natural resources of the Grand River encompass some of the most popular recreation destinations in the region.

Combined, GRDA's Grand Lake, Lake Hudson and the W.R. Holway Reservoir account for nearly 70,000 surface acres of Oklahoma water playgrounds. However, managing these waters to benefit lake enthusiasts, ecosystems and wildlife can be a challenging task. Still, the overriding goal of GRDA Ecosystems Management is to rise to this challenge everyday.

After all, everyone was drawn to these waters by something. And whatever that something was, whether it be boating, skiing, fishing or retiring to the lakeshore, it's the job of GRDA Ecosystems Management to make sure it is preserved for generations to come.

So, how are we meeting that challenge? Over the last three years, GRDA Ecosystems Management efforts have included shoreline habitat enhancement and cleanup; the removal of over 150 dilapidated or abandoned docks from the lakes; new water quality monitoring efforts; the establishment of new partnerships with other lake resource agencies and ongoing public education efforts. And that's just a partial list of what we are trying to do to help insure harmony and balance between the ecosystems, economic development and power production capabilities of the Grand River system.

In this *Currents*, you will read more about our recent success with the "Rush For Brush" habitat enhancement program on Grand and Hudson lakes. We are very proud of that project, not only because of the long lasting benefits it will bring to the lakes but mainly because of the cooperation we had from lake area stakeholders. Volunteers, who care very much about these lakes, donated their time and energy to help us complete this project, and we are very appreciative of their efforts.

Going forward, we believe there truly is a "Grand future" ahead for the lakes area. We believe that because of the kind of cooperative spirit lake enthusiasts have shown. We also feel that GRDA Ecosystems Management will continue to meet the challenges to bring a greater focus to our resource management efforts. We've come a long way in three years, but certainly feel our biggest success stories are still ahead.

If you have questions about ecosystems management, visit our link on the GRDA website, www.grda.com; or contact our offices at (918) 256-5545.

Sincerely,



Darrell E. Townsend, Ph.D.
Director of Ecological Operations

Front Cover: Sunrise over Pensacola Dam.
Photo courtesy of GRDA employee Dale Estep.

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An elite time on Grand Lake... For the second straight year, the Bassmaster Elite Series "Sooner Run" Tournament was held on Grand Lake in June, at the North Beach Development, near Grove. Televised nationally by ESPN, the tournament brought together some of the world's top anglers competing during the four-day event to walk away with the \$100,000 top prize. Like last year, the Grand River Dam Authority was very involved in making the tournament a success. GRDA Fisheries Coordinator Brent Davis (pictured at right, speaking with 2006 tourney winner Mike McClellan), along with GRDA Lake Patrol and the GRDA Ecosystems Management Department helped to facilitate the event, which brought much attention, tourism dollars and a lot of activity to the shores of Grand Lake. Always considered a top bass fishing destination, Grand Lake is beginning to draw more attention nationwide, thanks in part to the tournament and all the Grand Lake interests that helped to make it happen once again.



5 Questions:

Dr. Darrell Townsend and the Office of Ecosystems Management

1) The GRDA Office of Ecosystems Management was created in the spring of 2004. What do you think is the department's most significant accomplishment over the last three years?

By placing greater emphasis on conservation and lake management, our Ecosystems Management team has helped improve GRDA's relationship with Federal Energy Regulatory Commission (FERC) and staff, simply by being better stewards of our natural resources.

2) What role do the Shoreline Management Plans (SMPs) currently being developed for Grand and Hudson lakes play in GRDA's future ecosystems management efforts?

These plans will play a critical role in the future development of our lakes. Over the last several years we have been focused on lake management issues, enforcing our old rules and imposing some new ones. Throughout that time we have experienced what I like to call "growing pains" where we impose new rules and a short time later modify those rules based on experience and stakeholder feedback. These "growing pains" have subsequently left the public somewhat confused as to what our rules will and will not allow on a variety of issues; from the permitting of boat docks to shoreline cleanup and burning of debris. Finalizing the SMP will put an end to the confusion surrounding our policies and procedures and will provide a guidance document for all future development and shoreline management.

3) If there was one key message about the GRDA Ecosystems Management that you would like to give to the readers, what would it be?

When we ask for volunteers to help with special projects, we receive a great turnout from the public as well as GRDA employees alike. Our department deals with the public on a daily basis and we enjoy the opportunity to work side by side with these volunteers on projects like Rush For Brush.

4) How is your department organized? What responsibilities does it have?

Darrell E. Townsend II, Ph.D, Director of Ecosystems Management - Jacklyn Jaggars, Administrative Coordinator - Kenny Baker, Director of Law Enforcement - Charlie Floyd, Compliance Officer - Brent Davis, Fishery Coordinator / Tournament Director - Sam Ziara, Fisheries and Wildlife Biologist.

The GRDA Office of Ecosystems Management works with everything from A to Z: Aquatic planting to zebra mussel education and control. The broad list of responsibilities includes improving fish and wildlife habitat; Rush For Brush; Tournament Education on Angling Mortality (TEAM program); fish mortality studies; recreational impact studies; water quality monitoring and on and on.

Protecting the ecosystems of the natural resources under our control while working with other resource agencies and lake area stakeholders is all part of the plan.

5) Looking ahead, where would you like this department to be in three more years?

Our department would like to continue making a difference in environmental and conservation issues throughout Northeast Oklahoma.

Providing cover for small fish...

First annual “Rush for Brush” a big success

The Grand River Dam Authority is calling its first annual “Rush For Brush” artificial habitat enhancement project a great success.

The event, held earlier this summer, was actually a series of cooperative workshops between GRDA and lake area volunteers. Working together, they built a total of 815 artificial “spider block” habitats for deployment in Grand and Hudson lakes.

“We would like to thank all those who participated,” said GRDA Fisheries Coordinator Brent Davis. “We had great help and really appreciate everyone who participated.”

Davis said GRDA actually had more volunteer help than was expected. However, now that the stage has been set “we would like to have even more next year,” he said.

GRDA supplied the materials and helped area anglers build the structures at four workshops held in May and June. Fishermen joined Team Eco on Lake Hudson at Snowdale, Lake Hudson Inn, and on Grand Lake at Martin’s Landing and the Spillways.

“We taught the fishermen how to make the structures so they can now make them on their own. I think it’s good that they understand the importance of the habitats,” said Davis.



A total of 815 “spider block” habitats like these (above) were built during GRDA Office of Ecosystem Management’s four “Rush For Brush” events held on Grand and Hudson lakes.



The artificial habitats provide ideal cover for smaller fish to grow and enhance the fishery. They do not have to be replaced according to Davis and the fish will use it year round if it’s put in deep enough water.

“We plan on making this an annual event,” said Davis. “Look for upcoming advertisements and watch our website, www.grda.com.”

Left: A group of volunteers helps GRDA Ecosystems Management build artificial fish habitats for Grand Lake at Martin’s Landing.

Next page: GRDA Coal-Fired Complex near Chouteau, Oklahoma.

An aggressive timetable, ahead of federal mandates ...

GRDA to install new monitoring equipment

Continuing its reputation as an Oklahoma leader in environmental compliance efforts, the Grand River Dam Authority took another step forward in that position earlier this month. At its August 1 meeting, the GRDA Board of Directors approved an \$800,000 project to install continuous mercury emissions monitoring equipment at the GRDA Coal-Fired Complex. The Authority also expects to have that equipment installed and certified by July 2008, well ahead of the Environmental Protection Agency (EPA) mandate of December 31, 2008.

“It is an aggressive time table, but the sooner we have this equipment in place, the sooner we begin gathering this important information,” said GRDA Chief Executive Officer Kevin Easley. “I really want to commend the GRDA Board for taking this important step.”

Both units at the GRDA Coal-Fired Complex already utilize state-of-the-art continuous emissions monitoring systems (CEMs); those were first installed in the early 1990s. However, this new equipment will focus on mercury emissions; something the EPA has put a high priority on in recent years. The EPA issued the Clean Air Mercury Rule in March 2005 with a goal of permanently capping and reducing mercury emissions. Collecting data is an important first step.

“When it’s installed, this equipment will do what our other CEMs have been doing for many years now,” said GRDA Assistant General Manager of Thermal Generation Charles Barney, “and that is provide us with real-time data about emissions from our facility.”

GRDA’s current CEMs system already provides data round-the-clock to the EPA said Barney “and when the new mercury system is in place it will simply mean that more data from our facility is available to the agency.”

The GRDA Coal-Fired Complex was constructed in the early 1980s. Unit 1 (GRDA 1) began commercial operations in 1982; Unit 2 (GRDA 2) followed in 1985. GRDA 2 it is equipped with the only flue gas desulfurization unit (Scrubber) in Oklahoma, making it the state’s cleanest coal-burning unit.

“GRDA has been a leader in environmental rule compliance and in protecting the environment throughout its history,” said Easley. “We fully expect to maintain that reputation in the years to come.”

Three years ago, the GRDA Board established an environmental fund for projects like this one. Because of that, said Easley, the work will be completed without any rate increases to GRDA electricity customers.



Claremore seeing growth, planning for more

Claremore, county seat of Rogers County and a Grand River Dam Authority wholesale electricity customer, is a community that is rooted in the past and growing, at an accelerated pace, toward the future.

Consistently ranked in the top 10 fastest growing areas, Rogers County is now the fastest growing county in the state.

“We have been in the top 10 cities for a long time,” said Dell Davis, CEO/President of Claremore’s Chamber of Commerce. “Over the last six or seven years we have been the fastest growing county. It’s great for Claremore and it’s good for the entire county.”

Located on historic Route 66, the Claremore township predates America’s Main Street by over 100 years. Osage Indians first settled on a 25-acre mound along the Verdigris River in 1802 and established a fur trading post. The mound became known as Clermont, french for

“clear mountain”. Fifteen years later the Cherokee Indians were given the land through a series of treaties. In the 1870’s the original town site was moved twice, the second time, its present location, to reach an extension of the Frisco railroad.

The post office, in business 33 years before statehood, was established in 1874. It was through a clerical error that the name was listed as Claremore, the misspelling was never corrected.

By 1893, Claremore was already showing signs of developing into a bustling community with a healthy business climate. The original trading post evolved into a promising business district that included 14 different businesses. The pro-business climate that was cultivated in the very beginning, along the fertile banks of the Verdigris River, is still nurtured in Claremore today.



“Our mission is to drive the economy. We actively promote and support the growth of Claremore regionally and nationally,” said Mike Strotheide, CEO of Claremore Industrial and Economic Development Authority (CIEDA). “We develop and support growth, we plan for growth. We are building on what we have and looking to the future. We have to plan for growth for the next 10 years. We try and diversify the companies which is good for the economy.”

CIEDA was formed in 1948, a spin-off of the Chamber of Commerce, its mission is “to carry out economic activities, community development and to bring jobs and prosperity to the Claremore area by marketing nationally and regionally to attract new businesses.” CIEDA owns and operates a fully developed 125-acre business park for companies seeking new locations, as well as operating, managing and overseeing the activities at the Claremore Regional Airport. The airport’s runway was recently extended to 5,200 feet.

“The reason for the split with the Chamber in 1948 was the need to focus on more individual manufacturing. As an authority, you have the ability to develop bonds and work independently and focus on economic development,” explained Strotheide.

Claremore city leaders, CIEDA and the Chamber of Commerce have combined their efforts and partnered together to progressively plan and promote Claremore. Sharing the mutual goal of securing the future of their community, they work together strengthening the infrastructure that will support the growth.

“We are preparing,” said Matt Mueller, assistant city manager. “The growth is not in the community alone, but in the county. The infrastructure is a huge priority, to be able to serve our residents with quality. Our overall mission is for our customer.”

The exciting synergy is producing tremendous results for the entire population; currently around 17,000. In the first nine months of 2005, 698 building permits were issued, totaling \$67,000,000 in construction.

“If it’s planned, it’s a good thing and there is a lot of planning going on,” said Davis. “Claremore is easy to promote. We are right off the main highways; it’s a good geographic location. I think what attracts people is that we are still a small home town with amenities. People still know their neighbors here.”

Left: Downtown Claremore is being remodeled, revitalized and rediscovered.

Right: A substation next to the Claremore Public Works Building. Claremore has been a long time public power customer of GRDA’s.

Having roots that run deep has helped Claremore support and stabilize the growth the community has experienced but rarely does growth come without some accompanying growing pains. The effective planning by city leaders has minimized the pains associated with the stretching of the city’s limits.

“The growth has affected us. It is no longer an option to look forward to the future,” said Tim Miller, director of utilities. “We are working more than ever on future planning for the long range, for the next 20 years.”

The constant, steady growth Claremore has experienced has not gone unnoticed by those considering relocating home or business. According to CIEDA, over 1,000 new jobs have been created in Claremore since 2003. Over 600 of those jobs came from companies choosing to locate in Claremore.

“We actively market and respond, we work with the State of Oklahoma with prospects as well as working with other organizations to generate leads. We end up looking at three areas: new industry, helping existing businesses expand and supporting entrepreneurs,” said Strotheide. “We offer low operating costs, comparatively and a skilled workforce. There seems to be a lot more interest in the last couple of years from outside of the state. We have the best of both worlds.”

Businesses and families alike find the quiet rhythm of the community comforting and appealing. In a place where education is a priority, Claremore students consistently score above state and national averages on standardized tests. Claremore stays well below the national



average for all violent crime. In 2004, Claremore Police department earned “accreditation” status by the Oklahoma Association of Chief’s of Police. The fire department, originally operating with a horse drawn pumper, is now staffed by trained professionals possessing one of the best response times in Eastern Oklahoma.

“The quality of life is excellent. People like the wide open spaces, we have lots of land,” said Davis. “We have outstanding schools, recreation, tourism and churches. You can be at the lake in one hour or less and the cost of living is low.”

GRDA also shares a role in enhancing the climate of the community. Claremore, as a public power community, has the ability to offer potential customers - commercial or residential - low cost, affordable power.

Although availability of labor would be the most important issue a manufacturer would consider before building or relocating, the cost of utilities definitely come close in the level of importance.

“It’s got to be a part of the climate, without availability of power you are just not going to have it,” said Strotheide. “It’s the ability to be a little more flexible with electric rates. It’s a lower cost compared to other areas. In this phase the manufacturer is looking at a good source of power, it’s very important. GRDA is a good partner.”

Calling the community of Claremore “an important part of the GRDA public power team,” GRDA Chief Executive Officer Kevin Easley and key members of the GRDA met with Claremore city officials and assisted them with securing a reliability bond in the fall of 2004.

“Claremore has been an important wholesale electric customer of GRDA for a long time and we just want to work with them to make sure the electric distribution system is the very best it can be,” said Easley.

The approved \$6,000,000 reliability bond allowed the city to improve on line clearance, distribution system mapping, and fuse coordination/load balancing. As a result, the reliability went from 99.6 percent to 99.985 percent.

“We won a reliability award from the Municipal Electric Systems of Oklahoma (MESO) last year. We have a plan in place for continued growth with the service area. We are ready, but we want to grow right, to put out lines strategically so we have no line loss,” said Miller.

“The best thing I heard Kevin Easley say was, ‘We are a partner, what is good for you is good for us’ and vice versa. We embrace that partnership. GRDA aggressively plans for the future and when they are helping themselves, they are helping us stay a viable community for future growth.”

Currently the city is conducting a system study. This study will provide a data layer of the service area.

“The need to improve the system is what prompted the study. It is significantly important and an investment to meet the needs. It will be the driver behind the maintenance program. It includes pole inventory, such as the status and condition of each. It’s bringing everything up to today’s standards,” said Mueller. “Our relationship with GRDA is good. We feel we have the ability to work together to provide the best power for the residents.”

The benefits of being a public power community are broad and have a positive impact on each segment of the community.

“Being a public power community is extremely important, it has helped bring in a lot of business...”

“Being a public utility is a boost for the city,” said Davis. “I can call GRDA; it’s a personal relationship. They are involved in many of our community projects. Recently GRDA partnered with our visitor bureau on a study with the city of Claremore research report, a study of the potential of meeting, lodging, and restaurant sectors.”

The outcome of such a study will be felt and seen in the upcoming years as Claremore positions itself for continued growth.

“Being a public power community is extremely important; it has helped bring in a lot of new business because we are local. We can get there faster, our reliability comes into play. We can be on site fast and fix the problem immediately. Instead of them waiting on us, we are waiting on them. They know we can get things done,” said Miller.

Mueller appreciates the value of being a public power community, “the funding allows us to provide services to the citizens, it benefits the entire community.”

Tracing its roots to 1802...

City of Claremore rich in history

Claremore, county seat of Rogers County traces its roots back to 1802 along the banks of the Verdigris River. The frontier soon became Indian Territory and eventually Oklahoma.

It wasn't until statehood that Rogers County was created from the Cherokee Nation CooWeeScooWee District. The county was named after Clement V. Rogers, a member of the constitutional convention and father of Will Rogers.

Will, America's favorite son, was born in 1879 at the family's Dog Iron Ranch. A freed slave taught Rogers how to use a rope as a tool to work the cattle on his family's ranch. Rogers honed those skills and was soon entertaining and amazing folks with his dexterity. He left home to take part in a cattle drive and, along the trail of life, found fame as a humorist, actor, entertainer and writer. His common sense and observations brought humor to the lives of those suffering through the Great Depression. The Dog Iron Ranch near Oologah, is open year-round.

Will Rogers had already left the Claremore area when Lynn Riggs was born in 1899. Growing up on a farm near Claremore, Riggs appreciated the land, landscape and people of his hometown. After graduation, Riggs traveled, working in various occupations. It was while in New York City that he saw as many plays possible. He returned to Oklahoma to begin working writing his own plays.

He wrote "Green Grow the Lilacs" in 1931. The play is set outside of Claremore in Indian Territory in 1906. Although the play was successfully produced, it would soon go on to delight a much greater audience and even a state. "Green Grow the Lilacs" was the inspiration for Rogers and Hammerstein's "Oklahoma!" After reading Riggs' description for a stage direction, Hammerstein decided he couldn't squander the beautiful words on just the few who would read them, he penned the song "O, What a Beautiful Mornin'" Hammerstein recognized the debt he owed Riggs in a reply letter to the drama editor, "...Mr. Riggs' play is the wellspring of almost all that is good in "Oklahoma!"

The dusty trails that once crossed this part of Indian Territory would soon become part of a highway system that would connect America. Route 66 was commissioned in 1926. Thousands were soon traveling the Mother Road. As Will Rogers said, "I think the time will come when everybody will be made to stop off at Claremore on their way to any place they may be going."

Improved travel made the trip that Clara Ann Fowler, a.k.a. Patti Page, took a bit smoother. She began singing on a radio station in Tulsa, the show was sponsored by Page milk. She went on to become the best selling female singer of the 1950's. She became the first to overdub harmony vocals on her own lead on her first hit, "Confess." Her first number one hit, "All My Love" came out in 1950 and was followed by the biggest hit of her career, "The Tennessee Waltz." The Patti Page show debuted in 1955. Throughout her legendary career, Page has collected 111 hits, 15 gold records and four gold albums. She continues to perform today and is featured among 43 other Oklahoma artists on the "Oklahoma Rising" CD that is being released by the Oklahoma Centennial Commission to commemorate the 100th anniversary of statehood.

Parks, recreation areas and amenities like this gazebo (near downtown) are popular destinations for Claremore residents and visitors year-round.



A look into Information Technology (IT)

In the fall of 2004, GRDA consolidated all of its information technology functions under one umbrella: the new Information Technology (IT) Department. That meant bringing together several existing GRDA functions -- supervisory control and data acquisition (SCADA), metering, communications, data processing, technical services --- under one new umbrella. For the department's "customers" -- GRDA employees that rely on these functions daily -- the consolidation has allowed for "one-stop" service; no matter what the information technology need. Streamlining the departments also helped to eliminate overlapping functions, and gained tremendous efficiencies, as well as added security and more timely implementations.

The term "IT" encompasses all forms of technology used to create, store, exchange and use in various forms. The Information Technology Association of America defines IT as "the study, design, development, implementation, support or management of computer based information systems..."

The GRDA IT Department is actually comprised of six different departments, each with an individual purpose, but working interdependently; pursuing a common vision to be able to meet future needs.

The function of the IT department is similar to the function of the human brain and nervous system. The brain is the control center for the body. There is communication constantly taking place throughout the body. The nervous system is continually sending information along

neural pathways; the sensory nerves send messages to the brain. The brain processes the incoming data and coordinates the necessary action which is communicated back to the body by the motor nerves.

Mike Coile, Jim Fraley (center) and Bill Millsap supervise progress of the new communication building at the Big Cabin repeater.



In much the same way, the divisions within the GRDA IT Department each collect information, and send it to on to Communications.

IT's Communications/Technical Services Department is responsible for all the voice and data communications. This includes everything from the phones to the microwave wide area network (WAN).

"This department is critical to the communication between GRDA facilities as well as the communications between systems," said Jim Fraley, Director of Information Technology.

The Technical Services Department is comprised of personnel who maintain all the computer equipment within the Authority. This

"Intelligent application of today's computer capabilities will only make GRDA run more smoothly."

includes servers, desktop computers and laptops. The department also controls access to the systems, file shares and is charged with cyber security.

Homeland Security (HLS) is a recent addition to IT. HLS is responsible for the physical security of GRDA facilities.

"They are currently working on finalizing the design and installation plan for new Access Control and Surveillance systems for all our main locations," said Fraley. "These systems will allow GRDA to monitor and control the flow of employees, visitors and vendors."

It is within the Information Systems (IS) Department that all applications are written, tested and maintained.

“The Information Services group manages business applications and supports the business functions of the agency,” said Phil Clark, Superintendent of Information Systems. “This includes purchasing systems, asset maintenance applications and general HR data processing.”

Recently the primary focus of the IS group has been moving critical GRDA applications off the outdated and unsupported WANG main-frame to modern server platforms.

“This is in line with the future plans for the IS group which are to expand our skills and scope of influence to help meet the application and data processing needs of GRDA,” said Clark. “We will help GRDA make better use of computer resources and the newer technical capabilities available today. Intelligent application of today’s computer capabilities will only make GRDA run more smoothly.”

The Metering Department installs and maintains all of the revenue meters and maintains the systems which interrogate the meters and generate the numbers to be used in billing GRDA customers and monitoring connections with other utilities.

The SCADA Department installs and maintains the devices that control and monitor the flow of power into and out of the GRDA control area.

“SCADA also manages the systems that are used by the Operations Dispatchers to control generation. The system is also used for energy accounting and trading data with interconnected utilities and the Southwest Power Pool,” said Fraley.

GRDA IT is crucial in this information age and will continue to improve communications and in doing so, will even improve the lives of those unaware of the integral part it plays.



Information Services Department: (l to r) Debbie Giles, Charlene Hayes, Sandra Shaffer, Phil Clark and Karen Layman.



The highest levels of communication... GRDA Communications employees Jimmy Wheeler and Kevin Wheeler (no relation) make their way up a GRDA repeater tower site to do maintenance on the tower light. The Wheelers are just two of the many employees within the GRDA IT Department responsible for maintaining the many information delivery systems vital to GRDA’s daily operations.

The boys of summer...

Rights-of-way Department keeping it clear

Despite the recent rain, wind and January's ice storm damage, the Grand River Dam Authority (GRDA) Right-of-Way Crew is ahead of schedule for the year. That is important when you consider this department plays a major role in GRDA's efforts to deliver reliable power at all times. Doing so, means always meeting the standards set forth by the North American Electric Reliability Corporation (NERC) and the Federal Energy Regulatory Commission (FERC).

"We schedule for NERC and FERC and operate on a four year cycle. We work more hours to stay on schedule," explained Bruce Willis, Superintendent of Vegetation Management.

Scheduling 500 miles of line to clear each summer, Willis and his 16-man department have only a small window of opportunity in which to accomplish the work. As soon as the weather permits, they pair off into teams of two-man specialized crews to tackle the service area that covers 24 counties and is divided into four territories.

The crews, who have been certified and licensed by the Department of Agriculture as Pesticide Applicators in the State of Oklahoma, work in concert spraying, trimming, cutting and mowing to keep the lines, substations and microwave sites accessible. They are divided into five two-man spray crews, two side trimmings crews and two that spray and mow the substations and microwave sites.

"We kick off the summer with NERC by mowing the dike," said Willis. "We have 43 lines scheduled for this year and so far we have taken care of six that were not on the schedule, but completed them since we were in the area."

The work being carried out by this GRDA crew is critical to achieving GRDA's mission, which is in part to provide low-cost, reliable electric power and related services to their customers. By maintaining the rights-of way, ensuring accessibility to lines, substations and microwave sites, GRDA is making every possible effort to reduce the likelihood of preventable outages.

The worst ice storm in recent Northeastern Oklahoma history validated the extra effort: only two trees fell on GRDA lines.

"And those two trees were in the same spot," said Willis. "During storms we don't have tree related outages."

The lack of such problems is a testament to the crew's thoroughness, especially considering the terrain it must cover to execute the job. Barely noticeable gates open to reveal paths through the tall grasses that tractors and sprayers must follow in order to get to the lines and ensure access. The paths wind around, up and down hills and hollows, through brushy undergrowth and fields, mud and dirt roads, and through areas of private property and no roads at all. All together that means about 2,000 miles of lines across the GRDA service area.

Kevin Brown, (Trans) sprays a right-of-way near Owasso. Steady maintenance (spraying, trimming and mowing) keeps the GRDA system running efficiently.



“These guys are good at what they do; they care about doing a good job and being exactly square and their lines being straight,” said Willis, about the members of his department. “They are professionals. I call them the A-Team, it’s a young group with an experienced core, probably one of the best crews we’ve ever had.”

Willis should know; after all he’s been maintaining GRDA rights-of-way for 30 years and is the president-elect of the Oklahoma Vegetation Management Association (OVMA). Meanwhile, Jim Buster (GRDA Transmission Maintenance Technician), who has also been maintaining GRDA rights-of-way for over two decades, leads GRDA’s innovative public relations efforts for the department. He is the one who goes ahead of the crews to explain the process to landowners before GRDA moves into the area.

“The landowner can be the hardest part to deal with but not so much now since the ice storm. GRDA went out of the way to help get the power back on for people. It’s been a lot easier,” said Willis.



Due to late spring and early summer rains, vegetation can easily become overgrown. GRDA’s rights-of-way crew combats this by spraying, trimming and mowing. This effort keep the system looking and functioning well all year long.

“...I call them the A-Team, it’s a young group with an experienced core, probably one of the best crews we’ve ever had.”

The PR program has been so successful for GRDA that Willis has been asked to speak to other utilities and the OKVMA group on separate occasions, to outline GRDA’s efforts.

It is all quite a change from the “early years” when clearing the rights-of-way was more labor intensive.

“It was hand clearing and mechanical clearing,” said Willis. “We weren’t able to keep up, but now we’ve turned it around.”

Though the work they do may not always be seen or properly appreciated by many, the pride that they take in it makes the difference in the lights staying on. And that’s appreciated by everyone.

The artistic skills of Dave Carnahan

Dave Carnahan's art does imitate his life. An avid outdoorsman, he finds inspiration in the sights, sounds and beauty of nature and expresses it in paintings, taxidermy, scrimshaw, and wood carvings. As a wildlife artist, he has been capturing the spirit of the animals he loves with pencil since he was ten years old.



"I have always drawn. I have always been able to sit down and draw anything that catches my eye," said the 22-year Grand River Dam Authority veteran.

It is generally wildlife that catches his eye and it is

reflected in his body of work and his way of life. His deep appreciation of nature is as visible in the realistic brushstrokes replicating the feather pattern of the scissortail as it is in the intelligence seen in the eyes of a timber wolf, or in the discernable strength in the talons of a bald eagle perched on a branch. His admiration for the natural world is evident; his wife Jennifer echoes the statement "his life revolves around wildlife." He has passed his love for the outdoors down to his sons David Blake and Chris by taking them hunting and fishing with him since they were two. He used to carry them when they were little, now they are bigger than him and say they would carry him when he is too old to walk in the woods.

As a young boy, Carnahan's artistic skills were encouraged by his parents and honed by practicing drawing deer. His respect for the graceful creature is revealed in the softness of the detail.

"I was all about deer hunting and deer at the time," said Carnahan. He can produce a life-like representation of a deer in 20 minutes.

He continued to perfect his craft throughout his school days and was awarded a commercial art scholarship to Okmulgee Tech. He accompanied a friend who was enrolling in the Heating, Ventilation and Air Conditioning

(HVAC) program, and decided that the future in HVAC presented more opportunity and stability. Although he transferred the scholarship, his pencil was not stilled.

"I never stopped doing my artwork. I try and work on something every day, and have several projects ongoing."

Carnahan began working for GRDA in 1985 and is now the superintendent of the GRDA HVAC Department. Though his occupation may be comprised of nuts and bolts, he still manages to exercise his artistic talents on the job by designing exact duct work.

"When I set up a new unit, the supply and return must be built, so I design the duct work. I draw what I want in 3D," said Carnahan, who includes several different angles. His designs fill a folder at the sheet metal shop. Meanwhile, his designs on pumpkins won him first place for three out of four years in the KTUL Channel 8 pumpkin carving contest. Also, his design for the State of Oklahoma's conservation tag placed third.

He has practiced the art of taxidermy since he was 13. This helped him learn wildlife anatomy and preserve the beauty of the bird or animal. A quick glance is all it takes for him to record something in his memory or on paper to be transferred to canvas at a later time.



Dave Carnahan, a 25-year veteran of GRDA.



"I may see a photograph or even picture in a magazine in the doctor's office, and think I might want to paint that. I will sketch it if there is time, if not, I have a photographic memory. Then I can go back later and decide what to do with it."

Whether the image is executed on paper, on canvas, on wood or on a feather, on leather or even on an antler, it just depends upon both subject and Carnahan.

“Sometimes when I am out hunting, I can walk by and see a limb and see something in it. For instance, one day I saw a limb and thought ‘I can see a cane in there’, so I brought it home, cured it out, carved it and now there’s a cane. I’m always dragging stuff in from the woods.”

He applies the same philosophy to carving realistic ducks. Describing a process of elimination, he explains that you must fit the duck to the wood and then take away everything that’s not a duck.

His treks through the woods and his observational skills provide a continual source of inspiration. A unique rock with a natural hole and groove now anchors a water garden. Walking along, he caught a glimpse of the 300 pound boulder and new it would be perfect for a waterfall.

“It was about two miles from the truck. I had to get my nephew, he put it in a wheelbarrow and I cleared a path for him to get it up to the truck.”

The time spent hunting and scouting in the woods has taught Carnahan quite a bit about the rhythm of nature as well as the sounds, he recognizes and can imitate the calls with his voice or whistle at least 25 different birds and animals. Possessing the ability to imitate the calls of most of Northeastern Oklahoma’s wildlife has brought him into close contact with the animals who answer his calls. It has allowed him to have many close encounters and he won the gobbling state championship title, using his voice, in the 1994 Oklahoma State Turkey calling competition.

“Once when I was in my deer stand, I heard some barred owls, so I imitated them and called back. Soon these two owls flew in and landed on a branch not five feet away from me. It was something, but when they realized it was me there and not another owl they about fell off the branch trying to get away,” laughed Carnahan. “I do have the ability to call wildlife in my mouth. I can identify every bird and animal in Oklahoma and have been able to call or observe most of them at close range during my life.”

Dave has had turkeys, deer and birds come close enough to touch them. He has hunted all over Oklahoma, Texas, Colorado, Wyoming and Kansas, always seeing some new animal. Dave once sat down within a few feet of a large herd of Bighorn Sheep in Wyoming.

“I was able to sit with them by bleating at them when they would get nervous. Once I bleated at them they would calm down and go back to feeding. Another time, I called a quail and he came right up to me, I caught him in my hat,” he said.



His vocal talents have caused his home to become a migratory pit stop for a certain Baltimore oriole and summer tanager. The two stop by every year and follow him around until migration. Both feel a certain amount of ownership of Carnahan and do not like to share him.

“I can whistle for them and they come to me. But they are territorial and will fuss at each other.”

By his own estimation, he has sold or given away hundreds of pictures. Generally people approach him with an idea of something that they want for their own collection or for a gift. He obliges them working from a photograph or creating an original customized piece.

“I do some pet portraits. I really like working on animals instead of portraits of people, still life, or abstract art. I try to capture the beauty that God has surrounded us with. I’ve been given so many gifts in my life; my artistic ability is one that I hope I can devote more time to in the future and on down the road in retirement.”

Carnahan’s admiration for nature is proven (left and opposite page) by his artistic touch.

The other boys of summer...

GRDA HVAC keeps it cool

The recent expansions in the Grand River Dam Authority Communications Department is just one reason why GRDA's Heating, Ventilation and Air Conditioning (HVAC) crew has been busy in '07.

"We've got a lot of different jobs going on right now," said Dave Carnahan, HVAC Superintendent. "There is a lot of expansion with the new microwave communication buildings. We have package units that we are replacing with split system air conditioners."

This summer the HVAC crew will be installing new "split systems" across the service area. They have already put the new units in GRDA locations at Pryor and Alum Bluff and two out of five of the new units are already completed. Substations at Silver City, Hominy and Stillwater are next to be replaced.

"The hardest part...is dealing with the heat."

Carnahan's department services 120 air conditioners and 175 heating units at the 40 sub-stations, 21 microwave sites, and transmission headquarters. He also takes care of ice makers, lights and any electrical problems at GRDA's Transmission and Engineering Headquarters in Pryor.

"We've got to replace the air conditioning units at the Locust Grove microwave site, Cleveland 69 substation and the Sallisaw site," he said.

Preventative maintenance has proven vital to the upkeep of the units. Carnahan estimates some are 25 years old and still perform efficiently.

"We wash the air conditioners every year," he explained. "We wash the condensers, and evaporators. Keeping them clean really makes the difference, if you keep the dirt out of both coils it won't get clogged up, it keeps them working more efficiently. The older units are still running and keeping the equipment cool."

And by the way, Carnahan cautions, "if you wash your unit out at home, be sure and turn the power off first."

Though the summer season is generally more hectic, the crew stays just as busy in the winter.

"We do preventative maintenance in the winter, changing filters and checking the units. The microwave equipment is our main concern; it must be kept at a constant 73 degrees. It is the heart of the system," he said.

Working outdoors, Carnahan is used to the elements and the occasional snake under a condenser or in the cable trays. It's a good thing that he is not afraid of mice or snakes because he has to occasionally remove black snakes from the substations. Snakes can cause outages and heart failure.

The snakes hunt for mice that can find their way into the sites. The mice cause problems with equipment, often chewing through wires and building nests inside the units and electrical panels. Carnahan has dealt with a lot of mice, snakes, and spiders over the years but says the hardest part of his job is dealing with the heat.

"When it is 90 degrees it feels like 100 in the substations, surrounded by steel and gravel. It gives me the incentive to get the cool air flowing again."

Even though Carnahan has met his fair share of surprises, and dealing with the heat is a little harder than it used to be, he loves his job.

"Even though I'm a few years away from being able to retire, I would like to say that GRDA is a great company to work for," he said. "I've been here 25 years and know over 300 employees and over 100 retirees ... I'm proud to be a member of the GRDA family."

Dave Carnahan, HVAC Superintendent helps provide relief from the triple digit temperatures by performing regular maintenance on the air conditioning units throughout the GRDA system. Right: Carnahan checks the units at GRDA's Transmission and Engineering facility in Pryor.



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