ENVISION

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TxDOT road construction to integrate EMS by 2013

TxDOT continues to develop an Environmental Management System (EMS) for road construction projects that must be fully in place statewide by 2013 to fulfill an agreement with the U.S. Environmental Protection Agency (EPA).

TxDOT's EMS will formally integrate environmental compliance into road construction projects from start to finish and this system will be continually evaluated and improved. Steve Simmons, deputy executive director, is the project director for the pilot phase.

A Consent Agreement and Final Order (CAFO) between the EPA and TxDOT became effective on May 24, 2007. The order includes a Supplemental Environmental Project for TxDOT to develop an EMS. The next milestone is a deadline TxDOT faces in June to submit a "Pilot Phase EMS Implementation Plan."

So far TxDOT has submitted two items to the EPA to satisfy the Order. In June 2007, TxDOT told EPA who would be part of the EMS development team and submitted a schedule of milestones to have the EMS fully in place statewide by July 2013, the EPA's deadline. In September, TxDOT also submitted a Gap Analysis, a study that gauged the state of TxDOT's current environmental management practices to identify what EPA requirements for the

(See EMS, Page 12)

In this issue

PAFBE streamlines ESA Section 7 cooperation

By KAREN CLARY
Environmental Affairs Division

An effort by TXDOT, Federal Highway Administration (FHWA) and U.S. Fish and Wildlife Service (USFWS) to streamline Endangered Species Act (ESA) Section 7 interagency cooperation resulted in the creation of a Programmatic Agreement for Biological Evaluations (PAFBE). The PAFBE, signed in 2005, clarified the roles and responsibilities of FHWA, USFWS and TXDOT for ESA Section 7, interagency cooperation and consultation.

The PAFBE makes it easier for TxDOT, FHWA and USFWS staff to work together more effectively and cuts the time needed to perform tasks required by the consultation process. Products of the PAFBE include a draft Biological Assessment (BA) Biological Opinion (BO) template modeled on the Bedell Avenue Bridge replacement in Del Rio; the sharing of a Texas Parks and Wildlife Department (TPWD) Geographical Information Systems (GIS) database that contains records of rare Texas species; and timeline/feedback loop for continuous improvement between TxDOT, FHWA and USFWS.

Such efforts streamline overall ESA review processes between the three agencies, reduce redundancy, create standards for best available scientific technical information in documentation, and appreciably shorten consultation time overall. Future goals include the development of standard biological evaluation formats for use by TxDOT staff, the identification of key biological/ESA information needed for NEPA documents, and an effort to identify, assess, adopt and apply standard best management practices (BMPs) to mitigate adverse impacts on transportation projects.

The staff on the interagency team is working on a single programmatic consultation template that could be used for future consultations. The team made a decision to change the focus of the programmatic from a project-by-project basis to an ecological model based on species distributions. In doing so, the programmatic would apply to a species across its range of distribution rather than across an artificial boundary such as a district or project boundary. In time, this should lead to more comprehensive, fiscally beneficial, cross-district conservation and recovery goals that would meet the stated goals of the ESA, which in a nutshell, is the recovery of species from the threat of extinction.

The draft BA to BO template cut the 135-day process to just 45 days for the Bedell Ave. Bridge pilot project and was also used by the Waco district for its Tank Destroyer Blvd. project, gaining approval in 44 days. The two projects show the possibilities, however, the template is not available for use now. TxDOT and USFWS may pursue an agreement in the future to make regular use of the BA/BO template possible.

Walker leads, shares praise & challenges of Austin District's environmental effort

BLYTHE JEWELL
Environmental Affairs Division

After 21 years with TxDOT, Mike Walker has a lot of stories to tell. But he's more interested in singing the praises of his staff and co-workers, which might explain why they feel the same way about him.

After receiving his degree in Urban and Regional Planning from Southwest Texas State University, Walker joined the department in 1986 as a construction inspector. Three years later he transferred to the Austin District office, where he served as the Assistant Environmental Coordinator until his promotion in 1992 to District Environmental Coordinator.

Walker's Environmental Coordinator responsibilities include obtaining environmental clearance for all construction projects conducted within the district's 11 counties and making sure those projects meet their scheduled letting dates. It's a complex and constantly changing job that requires a lot of collaboration.

"It seems like every couple of months we are faced with new rules and regulations that we need to comply with, and with those new rules and regulations come people's opinions of what they mean," Walker said when asked about the challenges of his job. "It seems we spend more staff time coordinating wording of documents and making revisions than actually preparing the documents themselves."

Working in the Austin District presents its own unique set of challenges, too. According to the Central Texas Regional Mobility Authority, the Austin metropolitan area has the worst traffic congestion of any mid-sized city in the country – and the city can only expect the problem to worsen as population and roadway use increase over the coming years. This places a great deal of pressure on TxDOT to improve and maintain roadways and reduce traffic.

Austin is also an environmentally sensitive area, with approximately 38 listed species of plants and animals that must be addressed on each project. The presence of the Edwards Aquifer can further complicate progress. Austin is one of only two districts in the state required to comply with special rules adopted by the TCEQ to regulate the aquifer, and keeps a geologist on staff to address those particular requirements.

Moreover, the presence of state government offices and the University of Texas in Austin result in a community that is well-informed, educated and involved in projects that affect transportation and/or the environment. Public involvement events for the district are often well-attended and can get heated at times. It can make things interesting. Walker remembers a couple of meetings where police had to step in when drunk attendees became belligerent over the proposed designs.

But challenges like these make Walker's sense of accomplishment all the more satisfying when a project is completed. Walker explains, "It is always an accomplishment when we finally get through the process and a major project that relieves congestion goes to contract. I don't consider this a personal accomplishment, but something we here at the district accomplish together. It takes a lot of teamwork, both with designers and our environmental staff."

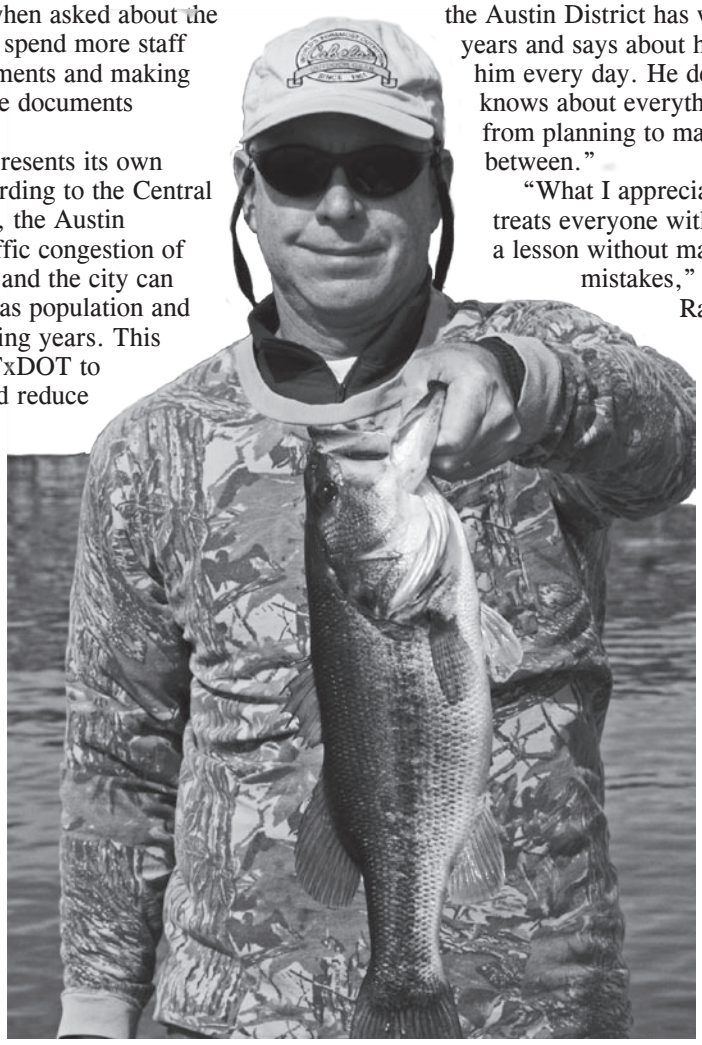
Walker clearly values his staff and co-workers and doesn't pass up an opportunity to express his appreciation for their contributions. When asked about his favorite part of the job, he answered without hesitation, "The people that I work with. I have a great staff of professionals, most of whom have been here for a number of years."

The feelings of appreciation are mutual. Bonnie Lister of the Austin District has worked for Walker for three years and says about him, "I learn so much from him every day. He definitely knows his stuff. He knows about everything from storm water to noise, from planning to maintenance and everything in between."

"What I appreciate most about Mike is he treats everyone with respect and he can teach you a lesson without making you feel bad about your mistakes," she said.

Randy Hopmann, who worked with Walker in the Special Design Section of the Austin District and is now the District Engineer for the Lubbock District, echoed Lister's sentiments. "Mike Walker is one of the best environmental coordinators that I have had the privilege to work with," Hopmann said. "His leadership and professionalism have led the department through some very important environmental changes in best management practices."

"Our designers and construction employees were frustrated by the environmental changes and requirements associated with the Edwards Aquifer Recharge Zone. It was Mike who stepped up and calmed



Mike Walker

(See WALKER, Page 5)

Watts up?: Zero-emission commute that costs only 3.5 cents per mile

H. G. QUINN
Environmental Affairs Division

Got an old clunker dripping oil in the garage?

You could follow TxDOT employee Michael Chamberlain's example and go electric. Self-taught and working alone, with limited spare time, he converted a 1992 Toyota Tercel into an electric car.

"I've always been interested in things like solar and wind power. I remember checking out books from the library in my elementary and middle schools. But it was in college that I really started thinking seriously about a project," Michael said.

In college he built an off-road electric car from scratch using parts bought on the Internet. It had a single seat and a top speed of 25 mph. He applied what he learned from the experience to the Tercel project.

"I had a list of parts that had to be installed and examples of how it worked on other cars but had to figure out how to make it work for my car," he said.

The Tercel's oil-caked combustion engine was replaced with a 12-horsepower electric motor, 13 deep-cycle, 6-volt batteries store power. Stronger rear springs were installed to support the weight of the batteries in the trunk. A machine shop fabricated a flywheel adapter, mounting plate and spacer to join the electric motor to the existing standard transmission. With various other components the total cost of the conversion was $3,500, including the $400 Michael originally paid for the used Tercel – by far, much cheaper than buying a new car.

After a number of successful road tests, Michael started driving his electric car to work in August 2006.

"I drive the electric car to work 3 days per week, at least. Then I usually drive it a couple of times on the weekend," he said.

So far, he has commuted more than 7,640 miles between work and home in Pflugerville.

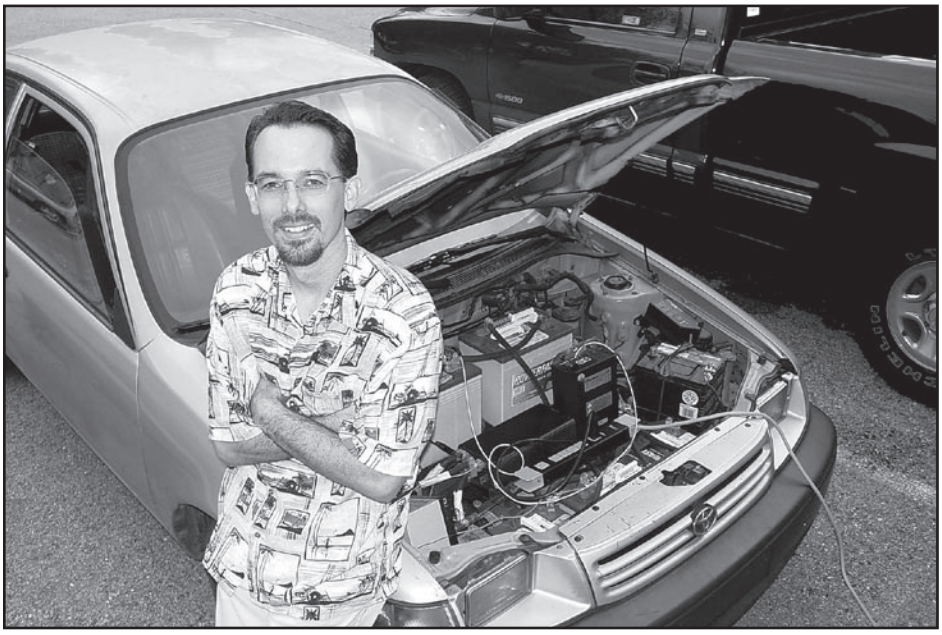


Photo by H.G. Quinn

Michael Chamberlain and his 1992 Toyota Tercel electric conversion car.

"The batteries are usually at 50 percent when I get to work. I charge the car for 8-9 hours, then pick up my wife, drive to Pflugerville, pick up the kids at day care and drive home. It comes out to 48 miles round-trip," Michael said. His other vehicle is a 2002 Toyota RAV4, used for longer trips.

TxDOT installed an outlet and a meter to track energy usage on the Congress Street side of Austin's Riverside Campus, Building 118. Michael reimburses TxDOT at 10 cents per kilowatt hour.

By the middle of November 2007, he had paid only $314 to drive 7,640 miles. His maintenance cost for the last year is a total of $135, which includes $10 for distilled water for the batteries and $125 to have the charger repaired, for a grand total of $439. At $2.75 a gallon it would cost $840 to drive the same distance in a typical, 25-mpg gas vehicle, and that doesn't include maintenance costs such as oil changes.

Concerning vehicle performance Michael said, "The car accelerates like a normal 1992 Tercel." It has a top speed of 65 mph and a 40-mile range on a single charge.

There are many benefits to an electric car. The electric motor has one moving part, which is easy to maintain and troubleshoot. No oil changes are necessary and mobile emissions are zero. "Driving the car 3 days per week lowers my yearly household CO2 emissions by 36 percent, and that includes the extra CO2 emitted from the power plant to charge the car," he said.

There are no special registration or inspection categories for the electric car. It is treated like a standard gas vehicle by the state. Annual safety inspections are only $10 since there is no emission test.

There is little noise pollution. The running engine is very quiet, and when the vehicle is at a standstill the engine stops and the car is completely silent. The batteries are recyclable.

"I believe anyone can create their own electric car from info gathered on the Internet or from books published on the subject. I used both," he said. Following his interest in alternative energy sources, Michael plans to eventually install solar and wind power in his home.

Michael has a BA in Geography from the University of Texas, Austin. He has been with TxDOT more than seven years and participates in the Clean Air Plan. He is currently the Mapping Branch Supervisor in the Data Management Section of the Transportation Planning and Programming Division in Austin, Texas. Email him at chambe12@hotmail.com, for more information about the electric car, and check out his website at www.Portablemaps.com. To find electrical components, he recommends these websites: kta-ev.com and evparts.com

The 1896 Beveridge Bridge near San Saba as restored by the Brownwood District. **Photo by H.G. Quinn/ENV**

Brownwood District uses enhancement funds to restore 1896 cable-stayed suspension bridge

H. G. Quinn
Environmental Affairs Division

An excellent example of a little-known Texas tradition is preserved in San Saba. The Brownwood District used Intermodal Surface Transportation Efficiency Act enhancement funds to bypass and restore an exceptionally rare 1896 cable-stayed suspension bridge. The effort earned an Honorable Mention Environmental Achievement Award (see related story, Page 7).

The Beveridge Bridge is part of a long established Texas tradition of cable-suspension bridges that started with the completion of the iconic Waco Suspension Bridge in 1870 and persisted until 1940. In those 70 years scores of suspension bridges were built in central Texas and along the Rio Grande and Red Rivers, mostly by local companies.

The Beveridge Bridge, named for 1849 pioneer John A. Beveridge, is located less than a mile from the San Saba TxDOT Maintenance Office. Built by the Texan-owned Flinn Moyer Bridge Company of Weatherford, it is one of only two surviving suspension bridges with tubular steel truss towers. It is one of only four surviving bridges of the dozens of suspension bridges built throughout Central and North Texas by William Flinn between 1885 and 1904.

In 1886 the railroad built a terminal 21 miles away in Lomita. Cut off by the San Saba River, local farmers and ranchers were unable to get their products to the expanded markets opened by the railroad. By the mid-1890s San Saba was in an economic crisis. A bridge was urgently needed.

A suspension bridge was a practical choice in its time. It consisted of pieces of moderate length and weight that were easily transported by pack mules and, using fewer components, was considerably cheaper to build than a truss bridge. Once at the final location, the modular bridge was relatively easy and quick to assemble, which reduced the cost of labor.

Besides its inherent scarcity, the Beveridge Bridge is a prime example of the first modern road building boom in the state. In 1884 and 1887 the State Legislature enacted measures empowering counties to issue bonds for road and bridge construction. On Feb. 14, 1896, San Saba County approved bonds for the bridge. Built on his donated land, John Beveridge was appointed to supervise construction. Opened later the same year, the bridge provided a vital link between San Saba and the rest of the world.

Closed in 2004, the decrepit bridge was fully renovated after it was bypassed by a new concrete bridge. The decaying anchorages, cables and wooden decking were replaced. The original stringers and towers were refurbished. Finally, the bridge was painted its original black and a paved parking lot and approaches were added. The area around the bridge was landscaped with native plants.

The bridge is now used only by pedestrians. Passing under the historic Wedding Oak (see sidebar, Page 6), locals travel to the bridge to fish and it is a destination for tourists traveling the Colorado River Trail. There are plans to add picnic tables in the near future to provide a restful oasis from the road.

Locals still tie knot at 400-year-old oak

A legendary Indian site, the Wedding Oak sheltered many weddings in the late 19th and early 20th centuries. Three occurred in one day on Dec. 24, 1911.

"People are still getting married there every once in awhile. My grandparents, Bill Sutton and Margaret Gaffe, were married there," said Eddy Jones of the San Saba Maintenance Office.

A marker was placed under the tree in 1972 designating the 400-year-old live oak as a state historic site.

TxDOT's Clean Air Plan helps reduce air pollution

3,483 employees participate in 2007, up 67%

Sept. 30 marked the end of the third and most sucessful year of TxDOT's Clean Air Plan (CAP).

The CAP began in 2005 as the department's internal effort to encourage employees to take and report clean air measures, such as car pooling or driving a hybrid to work. From the first full year of the CAP in 2005 to 2007, program participation increased 67 percent.

As a result, employees avoided traveling 5 million miles and reduced emissions by more than 32 tons of ozone-forming pollutants in 2007.

An Air Quality Coordinator (AQC) in each district, division, and office plays a vital role by informing employees about the program and encouraging participation. With the help of these AQCs, 3,483 participants completed 219,578 clean lunch activities, 120,533 clean commute activities, and 10,388 vehicle maintenance activities.

Employees were awarded points for reported CAP activities. Time off was awarded by a point system: for two hours of leave, 98-186 points; for four hours, 187-239 points; and for eight hours, 240 points or more.

Top participation has also been recognized. Among districts in non-attainment areas, Beaumont took first place (AQC/Lisa Collins), followed by El Paso (AQC/Jim Dobbins) and Fort Worth (AQC/Mary Hobson). In Early Action Compact areas, Yoakum took first place (AQC/Brian Ellis) followed by Corpus Christi (AQC/Steven Ashley) and Atlanta (AQC/Marcus Sandifer).

Among attainment area districts, Lufkin was first for its participation (AQC/Margie Gandy), followed by Waco (AQC/Ed Kabobel) and Bryan (AQC/Dina Miller).

Among large divisions and offices, Finance (AQC/Judy Castillo) was recognized as the top achiever, followed by the General Services Division (AQC/Brandi Rountree) and then the Technology Services Division (AQC/Barry Six).

The Civil Rights Office (AQC/Julian Vera) took first place among small divisions and offices, followed by Administration (AQC/Maria Finch) and the Audit Office (AQC/Karin Faltynek).

Walker: Enjoys the outdoors

(Continued from Page 2)

fears that we could rise to the challenge to accomplish the job. I am personally grateful to Mike for all that he has done to advance transportation successes for the department, particularly in the Austin area," Hopmann said.

Russel Lenz, who worked with Walker at the Austin District at the beginning of his TxDOT career and is now the District Engineer for Abilene, remembers that Walker "was involved in many high-profile projects and always showed a keen interest in insuring that we 'said what we were going to do, and did what we said.'"

"In my opinion, Mike exemplifies the qualities we should all strive for and as a result he has been a tremendous asset to transportation efforts throughout the Central Texas area," Lenz said.

Robert Stuard, Deputy District Engineer for the Austin District, likes to share a story about Walker taking his son on one of his first hunting trips.

"His son kept talking about shooting the first deer he saw. After repeated statements about 'shooting,' Mike calmly reminded him that it is called 'deer hunting' and not 'deer shooting.' His point being - it is a sport to be taken seriously and judiciously while, at the same time, still having some fun. One of life's little lessons handed down from father to son. I see a lot of that attitude in Mike's handling of our district's environmental program: Be serious when you need to be but never forget to have a little fun."

Walker and his wife Bonnie have been married for 21 years and have two children. Son Dylan, 17, is a junior at Round Rock High School and daughter Mallory, 14, attends 8th grade at Chisolm Trail Middle School.

Besides work and family, Walker enjoys outdoors activities like hunting and fishing, and he's recently embarked upon a new hobby – outdoor photography. Some of his wildlife photos have even been featured on the local evening news. He also enjoys long runs in the country to unwind and relaxing weekends on his back patio, barbecuing and bird watching.

Wichita Falls takes the gold in 2007 Environmental Achievement Awards

Sugar Land Regional Airport and Aviation Division earn Runner-up

H.G. Quinn
Environmental Affairs Division

The 2007 Environmental Achievement Awards were presented at the annual TxDOT District Engineer/Division Director/Office Director meeting Oct. 15, 2007, in College Station. Demonstrating ground-breaking creativity, the Wichita Falls District's "Native Prairie Restoration Project" was the clear winner.

When the pioneers first arrived in the nineteenth century they found an ocean of grass stretching from Texas into Canada. Native prairies are now some of the most endangered lands in the nation. In the last 100-plus years, most of the local mid-grass prairie has disappeared from North Texas, plowed under for agricultural and urban uses. Only one-half percent of the area is allotted for preservation.

In 2004 brothers Leslie and Charles Finnell donated 25 acres to Midwestern State University in Wichita Falls, with the understanding that it be used for an environmentally sensitive purpose. Since native grasslands are a conservation priority in Texas, the University, TxDOT and the Texas Parks and Wildlife Department signed a Memorandum of Agreement to restore the overgrazed mesquite shrub land to native prairie, turning the acreage into a land bank for compensatory mitigation.

Texas Parks and Wildlife developed a restoration plan. TxDOT funded the restoration in exchange for mitigation credit for impacts from future transportation projects. District maintenance workers cleared the mesquites, prepared the soil for seeding of native species and now supervise the site to control invasive species.

The university uses the site as an outdoor classroom for its Biology and Environmental Science Programs and monitors its transformation to a native prairie. Management of the site will pass from TxDOT to the university once the prairie is fully established.

Compensatory mitigation efforts are often difficult for TxDOT since transportation corridors are not suitable for prairie mitigation due to maintenance priorities such as mowing and road repairs. The district showed far-sighted planning in establishing a mitigation bank before it was needed.

Wichita Falls District photo

Wichita Falls' First Place Native Prairie Restoration.

Aviation Division photo

The Sugar Land Airport earned a Runner-Up award.

2007 Runner-up — the Aviation Division for the "Phase I Sugar Land Regional Airport Development."

The Sugar Land Regional Airport is one of the busier airports in the greater Houston metropolitan area. It plays a central role in emergencies. It was used extensively during the 2005 Hurricane Rita evacuation and it provided quick access for relief agencies dispatched to the area during the post-storm recovery.

Hangar space for larger aircraft and increased taxiway area, with required aircraft sight-lines, was needed. Unfortunately, aircraft access to the newly-purchased adjacent land required crossing two Oyster Creek oxbow lakes.

The first design for the new taxiways encroached on eight acres of wetlands. With the environment in mind, the project was redesigned.

The final design used special tree

(See BROWNWOOD, Page 7)

Brownwood: Bridge project honored

(Continued from Page 6)

removal techniques and placed the taxiway bridges on pilings instead of landfill. As a result, the project disturbed only 2.84 acres.

The easy choice would have been to simply write a check for mitigation bank credits. However, the city of Sugar Land, supported by the Aviation Division, decided to take a proactive stance and create a new wetland.

Although there was mitigation land close to the airport, the district decided to mitigate within the same watershed 20 miles downstream at the Brazos Bend State Park.

Through a well-coordinated effort by the Aviation Division, the Texas Parks and Wildlife Department, the city of Sugar Land, the U.S. Army Corps of Engineers and the consulting firm of KSA Engineering, the highly detailed permitting process was accomplished in record time.

The project protects general aviation, accommodates a vital airport expansion and created over 18 acres of new wetlands.

2007 Honorable Mention — the Corpus Christi District for the "State Highway 35 Bridge Replacement Projects at Salt Creek and Cavasso Creek."

State Highway 35 is the major coastal road between Houston and Corpus Christi, frequently traveled by more than 10,000 vehicles per day. Replacing and widening the dilapidated, 1931 timber and concrete bridges at Salt Creek and Cavasso Creek was crucial.

The bridges cross a tidal salt marsh next to the Aransas National Wildlife Refuge, which is the winter home for the endangered Whooping Crane, and a sanctuary for numerous other bird and aquatic species. The district worked closely with several federal and state agencies to avoid any negative impact to the fragile ecosystem.

An interlocking matting system was used under heavy construction equipment to minimize destructive compression of the wetland soil. During Whooping Crane nesting season, no concrete pilings were driven so the birds would not be disturbed. At the end of each workday the contractor lowered tall construction equipment to avoid injury to flying birds.

At Salt Creek, one half-acre of scrub thicket was cleared to expand the marsh. The site elevation was lowered to develop wetland hydrology and connected to Salt Creek by a small channel excavated two feet below the usual water level. Marsh soil, containing native plant seed, was removed from Cavasso Creek and immediately placed in the area to mitigate the land taken for the bridge expansion. The district will monitor the site for two years to ensure full revegetation.

2007 Honorable Mention — the Brownwood District for the "Beveridge Suspension Bridge Rehabilitation."

The Brownwood District used enhancement funds to bypass and restore an exceptional bridge (See related story and photo, Page 4).

Named for 1849 pioneer John Beveridge, the bridge was built by the Texan-owned Flinn Moyer Bridge Company of Weatherford. Using his own inventive designs, William Flinn had great success building dozens of suspension bridges throughout Central and North Texas between 1885 and 1904. There are only four left, including the Beveridge Bridge.

The bridge was bypassed by a modern concrete bridge and then renovated. The bridge is now used only by pedestrians. It is one of the historic highlights for tourists traveling the Colorado River Trail and serves as a pleasant rest stop for weary drivers.

The annual Environmental Achievement Award recognizes the best projects and processes that go beyond basic policy to protect and enhance the environment while meeting the state's transportation needs. The Environmental Affairs Division presents the award to districts or divisions whose efforts produce excellent results.

The 2008 call for entries is in January. The deadline is May 9, 2008. Read about the past winners in back issues of the ENVision newsletter online at: http://crossroads/org/env/General/news_ENVision.htm

An Honorable Mention went to the Brownwood District's Beveridge Bridge Restoration and also to the Corpus Christi District's SH 35 Bridge replacement (above).

Corpus Christi District photo

Pharr District builds wildlife crossings on SH 48 project to aid ocelot survival

By RUBEN RUIZ
Pharr District

With increasing urbanization in South Texas, TxDOT's Pharr District needed to find a balance between maintaining adequate roadways and protecting some of the most endangered and threatened species in the United States.

Among those species listed, the ocelot (Leopardus pardalis) stands out for its beauty, elusiveness and limited population. The ocelot was once abundant throughout its range, which before the 1950s extended from Texas to South America.

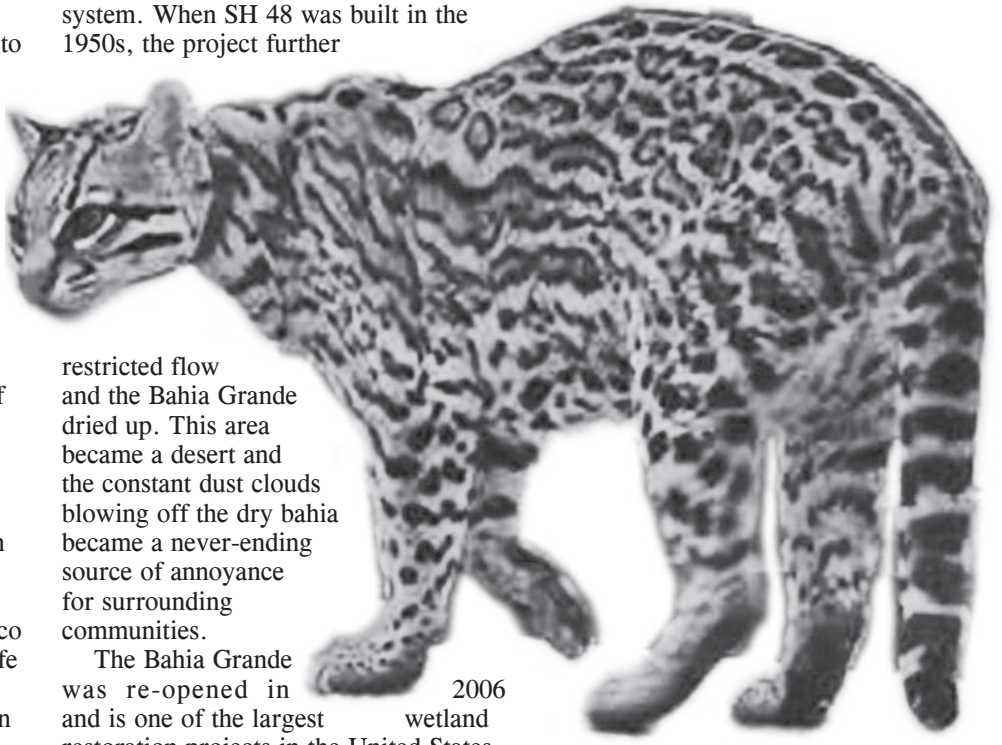
Today, the ocelot is endangered throughout its range, and Texas is home to the last known ocelot population in North America. Ocelots by thousands have fallen victim to the fur and pet trades, game hunting, and habitat loss due to deforestation and development. As ocelot habitats shrink, the cats become disconnected from each other and can no longer easily find mates. Because of this, populations continue to dwindle and become in-bred, which may well lead to extinction of the species in the near future. Today there are less than 150 ocelots known to be living in south Texas.

The U.S. Fish and Wildlife Service (USFWS) and its counterparts in Mexico have long contemplated creating wildlife "corridors" with international routes. Such corridors could allow a more even dispersal of the species to maintain genetic variability and help the ocelots find mates.

In the Rio Grande Valley, many of the natural corridors located along creeks and streams once used by ocelots have been destroyed by development and no longer function as travel corridors.

The reconstruction and widening of State Highway 48 (SH48) between Brownsville and Port Isabel offered TxDOT a real opportunity to help save the ocelot. This pioneering project included a combination of measures to alleviate the potential stresses on the ocelot population from the project. TxDOT expects that the lessons learned from the SH48 project will be applied to upcoming projects throughout the district.

The first goal of the SH 48 project was to reconnect the waters of Bahia Grande and the Brownsville Ship Channel where SH 48 crosses the Bahia Grande. These waters had been separated by construction of the Brownsville Ship Channel in the 1930's. Few accommodations to maintain flow to Bahia Grande were made and eventually the once-biologically rich Bahia Grande became isolated from the bay estuarine system. When SH 48 was built in the 1950s, the project further restricted flow and the Bahia Grande dried up. This area became a desert and the constant dust clouds blowing off the dry bahia became a never-ending source of annoyance for surrounding communities.



The Bahia Grande was re-opened in 2006 and is one of the largest wetland restoration projects in the United States.

New roadway projects requiring full reconstruction are now considered candidates for creating wildlife travel corridors which incorporate pipe or box culverts, accompanied by diversionary fencing. For projects that require concrete traffic barriers for safety, the barriers may be modified to incorporate openings permitting wildlife to continue crossing the roadway surface.

For example, Pharr District modified its plans to use concrete traffic barriers (CTB) on SH 48 in areas where ocelots are known to travel. Each 30-foot CTB placed on the roadway within a vegetated area now includes two 1-foot-by-5-foot openings at its base to permit wildlife to cross the roads.

In addition, Pharr District also constructed a wildlife crossing bridge in the most vegetated area on the SH 48 project. Diversionary fencing made of chain link fence extending from the bridge in both directions along the right of way directs wildlife to the crossing to prevent road kills. Areas leading to the crossing will be re-vegetated to provide protective cover for the traveling animals.

Future plans to alleviate the ocelots' plight include partnering with USFWS to develop a district-wide program to protect potential and critical ocelot habitat areas. This would be done by adjusting roadway construction to maintain existing wildlife corridors which already connect suitable habitat areas.

Several TxDOT projects already incorporate these practices, while several other projects are candidates for such applications. Through these efforts, TxDOT is learning how to aid the continual survival of endangered and threatened species by maintaining connections between habitat areas, benefiting the ocelot and many other species.

Bahía Grande restoration nets EPA award

Pharr District part of effort to reclaim most wetlands acreage in U.S. history

By H.G. Quinn
Environmental Affairs Division

One of the largest habitat restoration projects in U.S. history has reflooded thousands of acres of coastal estuary in South Texas that had been dry for seven decades, earning an award from the Environmental Protection Agency (EPA) for the effort.

The EPA's Gulf of Mexico Program in November awarded a coalition of 79 partners associated with the Bahía Grande (Grand Bay) Restoration Project in Brownsville a 2nd Place 2007 Gulf Guardian Award in the Partnership category. TxDOT's Pharr District participated in the project to restore the estuary that was cut off from the waters of the Gulf of Mexico in the 1930s.

In 1936, the flourishing mangrove-lined coastal estuary of Bahía Grande was closed to the gulf by the banks of a newly dredged ship channel to Brownsville. Stretching from the gulf 17 miles inland to Brownsville, the ship channel was enlarged several times throughout the 20th century to form the only deepwater port on the Mexican/U.S. border. Built later, SH 48, paralleling the channel further sealed off Bahía Grande.

In the semiarid climate, the thriving nursery for shrimp, crabs, redfish and spotted sea trout evaporated into a 6,900-acre barren dustbowl. Frequent winds plagued nearby communities with towering clouds of salt-laden dust; clogging machinery and corroding building exteriors, creating hazardous road conditions, killing native vegetation and bringing severe asthma to generations of children and elderly residents. Occasional public outcries to re-flood the Bahía Grande began only a few years after Brownsville celebrated the opening of its deepwater port.

In 1983, tired of perceived bureaucratic dithering, Carl "Joe" Gayman, then a local shrimper, and crane company owner Walter Plitt dug a 10-foot wide canal from the ship channel under an existing SH 48 bridge to the arid seabed. In two weeks Bahía Grande filled with seawater for the first time in more than four decades.

Originally supportive of the rogue 1983 flooding, local landowners changed their minds when they realized that their mineral rights would revert to the state if the lagoon was declared navigable. Threats of legal action closed the channel, quickly returning the area to a lifeless wasteland.

National Oceanic and Atmospheric Admistration Photos

Bahia Grande before re-flooding (top) and after (bottom).

A rewriting of state laws governing mineral rights in the early 1990s cleared the way for change.

A groundswell of outspoken public concern led to formation of a partnership of federal, state, local, national, civil, private and nonprofit organizations, families and businesses dedicated to restoring Bahía Grande.

In 1999 the U.S. Fish and Wildlife Service, the Nature Conservancy and The Conservation Fund purchased the Bahia Grande and surrounding land. Then painstaking archeological surveys were conducted, exhaustive environmental studies completed and numerous permits obtained, fulfilling legal requirements to re-establish the lagoon.

The opening of the preliminary pilot channel connecting the arid basin of Bahía Grande to the Brownsville Ship Channel was held on July 16, 2005, to celebrate the beginning of the largest single wetland restoration project in the nation. The new channel was named after Carl "Joe" Gayman, Commissioner of the Brownsville Navigation District since 1988, for his decades-long efforts to restore the estuary.

In June 2007, officials announced the completion of two new interior channels connecting Bahía Grande to the Laguna Larga and the Little Laguna Madre, linking the three tidewater estuaries that dominate the Bahía Grande.

TxDOT's Pharr District lengthened the original SH 48 bridge by 40 feet and widened the pilot channel in the right of way to 100 feet. In the near future the Port of Brownsville Navigation Authority will widen the section of channel connecting to the ship channel to assure an essential healthy water exchange between the wetlands and the gulf.

The flooded basins are a living laboratory to dozens of scientists. Hydrologists, ecologists, sedimentologists and zoologists are all over the Bahía Grande complex taking water and soil, plant and fish samples.

Aquatic ecologist Hudson DeYoe, a professor at the University of Texas-Pan American in Edinburg told "Texas Parks & Wildlife" magazine,"This type of a project you get only once in a lifetime. You're starting from dry dirt and watching it blossom back to what we hope will be a fully functioning ecosystem. It could transform that area if it really gets on the right track."

Meanwhile, at a University of Texas-Brownsville greenhouse and in another greenhouse at Bahía Grande, students and volunteers tend thousands of black mangroves, gulf cord grass, sea ox-eye daisy and other native plants that will be used to help stabilize the shoreline and seabed

"What we're doing is propagating the native plants that we want to grow and we're going to put them out there to jump-start the native plant process," Elizabeth Heise, a professor from the University of Texas-Brownsville who helps supervise the greenhouses, told "Texas Parks & Wildlife" magazine. "We don't want the non-natives to take over."

The entire 34-square-mile Bahía Grande complex has been incorporated into the 71,000 Laguna Atascosa Wildlife Refuge and is protected as public land under federal regulations.

Roma 'A place we all wish to visit'

Architects win award for restoration funded as enhancement project

By MARIO SANCHEZ
Environmental Affairs Division

On the Rio Grande, midway between Laredo and Brownsville, Roma is the stellar setting for an award winning civic design by Kell Muñoz Architects of San Antonio and reconized by a 2007 Design Award from the Texas Society of Achitects.

Perhaps in no other community of the border is a regional sense of identity and history better evidenced than in Roma. Settled in the Spanish Colonial era, and founded in 1848 as a trading center, Roma was the result of a series of fortunate circumstances: the siting of a magnificent plaza overlooking the sandstone bluffs of the Rio Grande, the flourishing of a river steamboat trade, and the arrival of the talented German master mason Heinrich "Enrique" Portscheller. These contributed to make a picturesque town – a "hamlet on the Rhine," as described in 1853 – with a colorful heritage still vividly portrayed through an exceptional collection of structures which in their design, materials and construction techniques reflect the cultural continuity of the Texas/Mexico borderlands.

The intrinsic spatial and architectural qualities of this community heritage are recognized in the Roma Visitors Center and Plaza Project completed by Kell Muñoz Architects, with funding by the City of Roma and the Statewide Transportation Enhancement Program of the Texas Department of Transportation. Building on earlier efforts to stabilize some of the more outstanding structures in the Roma National Historic Landmark District as part of a phased master plan, Kell Muñoz, with project architect Steven Tillotson, A.I.A. at the helm, designed what is the second and, probably, pivotal segment of that long term endeavor. Encompassing the rehabilitation of the upper portion of the plaza and the first publicly accessible building dedicated to heritage interpretation, this second phase gives credence and continuity to that earlier effort, originally conceived by the Dallas-based Meadows Foundation in a bold, now legendary public/private partnership initiative to transform Roma into a heritage tourism experience.

Beginning with the plaza, Kell Muñoz set to recapture a culturally hybrid space originally laid out as a broad, two-block-long avenue in an 1848 U.S. plat, but transformed into a Hispanic plaza with the introduction of Our Lady of Refuge Church at one end, and the construction of walled commercial establishments around its perimeter. Historically unpaved and open to views of the Rio Grande, the plaza was insensitively severed, subdivided and landscaped in 1976 to commemorate the U.S. Bicentennial. Presenting Tillotson with what was perhaps the greatest challenge of the project, the recovery of the plaza made him "juggle multiple visions," from which emerged, in his words, "a unified solution to serve different contemporary uses that also maintains a historically compatible interpretation of the space."

After removing numerous obstructions and non-historic materials, the plaza was regraded to provide adequate drainage and an accessible slope through a complex interplay of grades remembered by Tillotson, a 25-year practitioner, as "perhaps the most difficult grading problem I've ever encountered." Vehicular traffic was reintroduced to the upper plaza by means of a one-way circular loop with diagonal parking along the center of the space, sheltered by curbed islands at each end. The diagonal motif was reinforced by mesquite wheel stops and the scoring of the concrete surface, which is topped with a rock salt finish to recall the texture and color of the caliche that originally covered the plaza. Serving a dual function, the diagonal patterning cleverly provides a template for organizing community events, including farmers' market, concerts and religious processions, thereby reintegrating the space into the life of the city.

Restricting parked vehicles to the center of the plaza enabled Kell Muñoz to garner added space along the sides for pedestrian traffic and landscaping. Wide concrete sidewalks with irregularly scored curbs to recall the traditional sandstone curbing in the region denote pedestrian space. Within the sidewalks, large beds incorporate plantings, including native Montezuma cypress trees, a new, yet welcomed contemporary feature introduced in front of the walled courtyard portions of the plaza. Restored banquetas, or historic buff-brick sidewalks, align the base of the buildings to complete the surface composition of

(See ROMA, Page 11)

Photos by Chris Cooper

Roma: Historic feel recaptured

(Continued from Page 10)

the plaza. At designated junctures, the elevated banquetas and the new, lower level sidewalks meet for ADA compliance.

Striking, yet muted in its response, the refurbished plaza represents, in the words of juror Brigette Shim, a set of "… very thoughtful urban interventions…that make you appreciate the buildings precisely because of their relationship to a more refined urban context." The openness and simplicity of the design also restores Our Lady of Refuge to its rightful place as the focal point of the plaza, while allowing for uninterrupted vistas of Northern Mexico across the Rio Grande, evoking a shared heritage that socially, culturally, and economically does not recognize walled boundaries.

At the southeast corner of the plaza, a residential/commercial complex is part of the continuous architectural fabric that tightly defines urban space in this border city in a manner reminiscent of Mexico. Built in the late 19th century for the family of José Camilo Sáenz Salinas, a part of the intricate web of familial ties dating to the founding of Roma, the one-story, flat-roofed, one-room deep, L-shaped complex is composed of a dwelling and store enclosing a rear courtyard typical of the region. Rehabilitated as a branch of the World Birding Center, the "Roma Bluffs" facility is one of nine such branches throughout the Lower Rio Grande Valley managed by the U.S. Fish and Wildlife Service.

The residential portion of the complex bears the imprint of Portscheller, with its brick cornice, raised pilasters, architraves and entablature, while the corner store is utilitarian in appearance. Exterior brick in the entire complex was repointed with lime mortar and protected with a lime-based paint. In the residence, the varied composition of the elevation is highlighted with a historically accurate dual paint scheme, as the store, in turn, is wrapped with a continuous porch documented in historic photographs. More challenging to refurbish were the three-layer-thick brick roofs encased behind the corniced parapets, which were finished with a traditional lime wash.

The same minimalist design approach applied to the exterior – the "sense of knowing when to stop," according to Tillotson – also worked for the interior rehabilitation of the structures. Environmental systems were introduced respectful of interior volumes, plastered walls, and the hefty, hand-hewn cypress wood beams. Hand-stenciled, polychromed decorative patterns, an unexpected find concealed in portions of the store's plastered interior walls, posed a restoration and financial challenge during construction. The selected solution stabilized, cleaned and incorporated the decorative remnants within the newly plastered walls. Interpretive exhibits were designed to stand away from the perimeter walls, allowing for minimal disruption to the continuity of the decorative surfaces. At the rear of the property, the courtyard was paved with the traditional buff-color brick, and landscaped with indigenous plants to attract birds and butterflies. In the courtyard next door, to the rear of a mid-19th century gabled sandstone cottage, also rehabilitated as part of the birding complex, an amphitheater and demonstration garden were introduced for interpretive events.

Providing a much-needed point of contact for visitors, the World Birding Center finally opens to the public one of the numerous historic family compounds in the city, validating "the cultural patterns and practices…of the community that resides here," juror Walter Hood wrote. Interpretively, the center also diversifies the tourism experience in Roma, linking it to a greater, regional ecotourism endeavor that attracted 6,000 visitors in the first four months of 2007. More important, as an ensemble, the plaza and visitors center project generates a sense of accomplishment and much-deserved interest around the rescue of the richly-layered heritage of a singular city in our borderlands. "An extraordinary thing to be greatly admired," as crisply noted by juror Peter Bohlin, the Kell Muñoz winning design transforms Roma – historically, architecturally, environmentally – into "a place we all wish to visit."

FHWA's 'Exemplary Ecosystem Initiative' recognizes TxDOT's wetland banks effort

In May 2007, the FHWA presented the Exemplary Ecosystem Initiative to TxDOT for the Wetland Mitigation Banks Program.

The award states "In recognition of outstanding commitment to environmental stewardship for purchasing, restoring, enhancing, preserving, and managing more than 9,000 acres of wetland bottomland. These communities of elm, bald cypress, tupelo, and cottonwood that provide food and shelter for migratory birds and other wildlife are one of the most endangered ecosystems in the nation."

The Wetland Mitigation Banks Program started in 1992 with the purchase of the 2,243-acre Anderson Tract in Smith County. Since then, the program has added the 3,343-acre Blue Elbow Swamp in Orange County near the Sabine River, and the 3,552-acre Coastal Bottomlands, which stretches along the Brazoria River.

Using the Wetland Mitigation Banks credits is frequently more cost effective than on-site, piece-meal mitigation and it is better for the environment. Since each bank is an unbroken area, the native wildlife and plant species remain healthier than species which are isolated in smaller, disconnected on-site wetlands.

The three banks have an anticipated 20-year credit life in which to meet the needs of transportation projects within the banks' geographic service area (Northeast Texas, Beaumont, and the Houston metropolitan area). To date, more than 90 transportation projects have used bank credits.

LSI praised for SH 130 environmental effort, EMS use

Working closely with the Turnpike Construction Office of TxDOT's Austin District, Lone Star Infrastructure (LSI), achieved the state's highest level for environmental performance. In May, the Texas Commission on Environmental Quality (TCEQ) recognized LSI and four other organizations for participating in CLEAN TEXAS, its voluntary environmental leadership program.

"The State of Texas is proud of the commitment these companies have made to investing in environmental leadership," said TCEQ Chairman Kathleen Hartnett White. "To gain Platinum and Gold membership in the CLEAN TEXAS program, these companies voluntarily look for ways to do business that minimize the impact to our diverse natural resources."

To construct 50 miles of new road for State Highway 130 (SH 130), LSI needed more than 1 million tons of construction material. LSI negotiated to recycle asphalt runways from retired Mueller Airport in Austin, reducing the need for quarried material by more than 250,000 tons.

In cooperation with Bat Conservation International, LSI installed eight bat lodges in four locations, holding up to 5,000 bats each, potential habitat for 40,000 bats. In addition, LSI partnered with Popham Elementary School on its Blackland Prairie Restoration Project to relocate mature shade trees from the right of way to the school.

CLEAN TEXAS provides a platform to promote and recognize enhanced environmental performance throughout Texas. Organizations join CLEAN TEXAS for a three-year period at one of four membership levels - Bronze, Silver, Gold, and the highest level, Platinum. To reach the Gold or Platinum level requires use of a performance-based Environmental Management System (EMS) and also environmental performance that goes beyond compliance with environmental laws. Gold and Platinum members are eligible for expedited permitting, improved compliance history score, and assistance with innovative projects. Collectively, these incentives help to reduce paperwork, increase efficiency, and allow members to focus on environmental improvement.

EMS: Pilot phase expected in 2009

(Continued from Page 1)

EMS are now missing.

The analysis was conducted in the three pilot districts – Dallas, Yoakum and Waco – and four divisions – ENV, Design, Maintenance and Construction. The development team is also comprised of staff from these three districts and four divisions. Construction contractors were also surveyed as part of the study.

The CAFO requires that the Pilot Phase EMS Implementation Plan must be submitted for review and approval by June 2008. That submittal will describe in detail how the new EMS will be integrated into road construction operations, and continuously evaluated and improved.

Also, the plan will include a schedule for pilot phase implementation and how three Storm Water Objective Projects – one in each of the three pilot districts – will be included as part of the pilot EMS. These projects will have special specifications and provisions that detail the EPA requirements for managing storm water during construction. The EMS likely will result in new or modified specifications and training to improve environmental compliance.

The Pilot EMS is expected to start in Dallas, Waco and Yoakum in January 2009 following EPA approval of the Pilot Phase EMS Implementation Plan. The EMS will become a permanent part of TxDOT operating procedures statewide in steps leading up to full integration by 2013.

Details of the Pilot Phase EMS will be presented at the Construction Conference in February and later at other TxDOT conferences. ENV is working with the Travel Division to develop an EMS Awareness training video. Development of an EMS web site is also planned.

Please contact Monica Scott in ENV if you have questions about the EMS.

Staff report to ENV's deputy director to tackle environmental compliance

Monica Scott, P.G., of the Pollution Prevention and Abatement Branch, and **Dr. Lain Ellis**, long-time ENV archeologist, have been shifted to report directly to Deputy Division Director **Jimmy Tyree** and to work on environmental compliance issues. Scott has assumed primary responsibility to develop an Environmental Management System for the department. Ellis will focus on quality assurance, quality control and continuous improvement for projects, as well as Standards of Submission for documents and a Compliance Action Plan for districts, Regional Mobility Authorities, Comprehensive Development Agreements (CDAs) and local governments.

In other staff changes:

Carrie Costilla joined ENV Dec. 17th as an administrative assistant. She comes to ENV from Texas State University, with 16-plus years of experience in human resources, purchasing, and facilities management. She has also worked at the Texas Building & Procurement Commission in the CMBL/ Bid services and the Design Construction and Planning Department. Her husband, Kenneth Costilla, works for Finance and they have been married for 19 years and have three children.

Kim Hall joined ENV Nov. 1 as a contracts specialist from the Contract Services Section of TxDOT's Office of General Counsel, where she has worked for three-and-a-half years. Kim holds a bachelor's degree from Park University and recently became a Certified Texas Contract Manager. She and husband Glenn have a 10-year old son, TJ, and a daughter, Jordan, who is 17 months old.

Brandy Huston joined ENV in July 2007 as a planning specialist. Brandy holds a bachelor's degree in environmental design from Texas A&M University and expects to complete a masters in urban planning there soon. Brandy was previously the environmental specialist for the Bryan District for seven years. Brandy and husband James have a dog and two cats.

Administrative Assistant **Helen Lewis** left ENV in October 2006 to work for the Traffic Division, after returning to ENV in August 2005.

After seven years as ENV's automation manager, **Lorie Ledesma-Ramirez** left in November for a new job with the Department of Information Resources as a liaison between state agencies and her new agency.

Maya Coleman joined ENV in July 2007 as the GIS coordinator/analyst. Her experience includes working for the Cayman Islands government, the Nature Conservancy in New York, as well as TxDOT's Transportation Planning and Programming Division performing ArcGIS/GPS training, programming, ArcIMS development and testing, migrating ArcInfo coverages into an enterprise geodatabase environment for use in ArcSDE, creating custom maps, and technical support and analysis.

GIS Coordinator **Peggy Isaacs** joined the Information Services Division in April 2007 after a little more than three years with ENV, where she was instrumental in the development of programs related to GIS.

Information Resource Specialist **Philip Garcia** left ENV in May 2007 to join the Vehicle Title and Registration Division.

Blythe Jewell, a contractor in the Communications Branch, left after 2½ years to become the Communications Director for the statewide PTA. Arwen Lietz took over the position in October 2007 to work on the rewrite of ENV's manual and to maintain ENV's web presence. She earned a bachelor of arts degree in English, Magna Cum Laude with Honors, from Wake Forest University, and a master's degree in English from Boston College with a Certificate in Irish Studies. Arwen has experience as a journalist, as a technical writer, and she is co-host of an online TV show about the online game "World of Warcraft."

Air Quality Specialist **Heather Evans** left ENV's Natural Resources Management Section (NRM) in September 2006 to live in Washington State and be a full-time mom. Jackie Ploch, who replaced Heather Evans, was also promoted to be NRM's Air Quality lead worker in November 2007.

Norm King, supervisor of the Ecological Resources Management Section (ERM), was called to active duty for 18 months in the Texas Guard beginning in January.

Stephen Ligon joined NRM as an environmental specialist in February 2007 and was appointed interim ERM supervisor in January to fill in for King. Stephen holds a bachelor's in biology from Southwest Texas State University, with a minor in Chemistry. Prior to joining TxDOT, he worked for Texas Parks and Wildlife for seven years and TCEQ for 15 years. At TCEQ, he worked in the municipal pre-treatment program, the storm water and waste water permitting programs, and most recently, he managed TCEQ's air program. Stephen now assists NRM with air program issues and CDA issues, and will continue to provide assistance where necessary. Stephen and his wife live in Bastrop, where he enjoys fishing, gardening and a motorcycling hobby with their 26-year old daughter.

After five years with NRM, **Theresa Canales** transferred from the Water Resources Management (WRM) Branch to the San Antonio District in May 2007 to be closer to family members.

Environmental Specialist **David Nuckels** also left ENV's WRM branch in November 2007 to work for the San Antonio District.

Mario Mata accepted a position as an environmental specialist with WRM. Mario was previously with the Project Management Section (PM), and before that had worked with water and air quality in NRM.

Environmental Specialist **Karen Clary** was promoted to team lead for the Biological Resources Management (BRM) Branch in October 2006. Before that, she had been a staff biologist for more than eight years.

In January 2007, BRM welcomed Environmental Specialist **Brian Holmes**. Brian received his bachelor's degree in environmental science from Texas A&M University/Corpus Christi, and a master's in aquatic biology from Texas State University in San Marcos. He previously worked as a consultant on issues related to wetlands, habitat assessment and the

(See STAFF, Page 14)

Staff: Team leaders added; new faces join ENV

(Continued from Page 13)

Texas Pollutant Discharge Elimination System program, followed by a four-year stint with TCEQ's Surface Water Quality Monitoring group. Brian and his wife have one daughter, Emily.

Stirling Robertson joined BRM in June 2007 as an environmental specialist. Stirling has bachelor's degree in science and a master's degrees from Texas A&M in wildlife and fisheries sciences. He also holds a Ph.D. in biology from the Florida Institute of Technology. Stirling lived in Florida for the previous 12 years, where he worked as an environmental consultant and later served as the director of environment, health and safety for an aggregate producer/mining company in North Carolina. He's now back in his native Austin with his three kids. In his spare time, he enjoys SCUBA, Formula 1 racing, and car and motorcycle maintenance.

In May 2007, **Erin Foster** left BRM to pursue a career with a consulting firm.

Terry Dempsey and Douglass Mack were named team leads for Pollution Prevention and Abatement (PPA) in October 2006. Terry has been with ENV since 1996 and Mack since 1998. Dempsey and Mack head two field areas that divide TxDOT districts between the two for both project and facility purposes.

Rod Kimbro joined ENV in May 2007 as an environmental specialist with PPA. He has a bachelor's degree in chemistry from the University of Texas at Austin, and has professional certifications in geology (P.G.) and hazardous materials management (CHMM). He was a consultant for 20 years before coming to TxDOT.

PPA welcomed **Orlando Villareal** in May as an environmental specialist. Orlando comes to ENV from the San Angelo District, where he spent the previous six years managing various issues related to hazardous materials. Orlando's previous experience includes a two-year stint with Kleinfelder-TETCO and four years in the U.S. Marine Corps as a Field Radio Operator and Hazardous Materials Specialist. Orlando enjoys bow hunting, snowboarding and home improvement projects; he and his wife Kristy have four children ranging in age from 7 to 13.

Dr. Scott Pletka was promoted from archeologist to manager of the Archeological Studies Branch last March.

Mark Barron joined ENV's Historical Studies Branch in May 2007 as a contract cultural resources specialist. Mark is an employee of HHM, Inc. and is currently pursuing his Ph.D. in American Studies from the University of Maryland. In his spare time, Mark enjoys cooking and hiking.

Alexis Reynolds joined the Historical Studies Branch as a contract historic preservation specialist in October 2006. Alexis works for Mead & Hunt. She holds a bachelor of arts degree in American studies from Skidmore College in Saratoga Springs, NY, and an master's in historic preservation from Eastern Michigan University. Alexis enjoys traveling, hiking, swimming, cooking.

Kirk Foster started Dec. 1 as a project manager in Project Management (PM), working with the El Paso, Pharr, and San Angelo districts. Kirk came from the Texas Department of Criminal Justice where he managed clean up of property within the prison farm system. Prior to that, he worked for two consultant firms during the cleanup of Rocky Flats weapons sight in Colorado.

In May 2007, Project Manager **Jasmine Gardner** left ENV to pursue a career with a consulting firm.

Project Manager **Sonya Hernandez** joined ENV's PM in December 2006. In addition to her duties as project manager for the Yoakum District, Sonya works on contract management. Sonya holds a bachelor's degree in studio art and geology from Colorado College and masters in geology from Indiana University. Before joining ENV, Sonya was with the Indiana Department of Environmental Management, regulating environmental corrective action cases related to hazardous materials in soil and groundwater. In her spare time, Sonya enjoys a wide range of pursuits that include baking, hiking, oil painting, charcoal drawing, crafts and print making.

Hettie More left ENV in July 2006 for a position with the Right of Way Division. Hettie was PM's administrative assistant for three years.

Linda Pendergras became PM's administrative assistant in November. Before coming to ENV, she was assigned by a temp agency to the Travel Division for two months. When that assignment ended, she became ENV's receptionist from May to November. In her spare time, she enjoys reading, visiting her children and baby sitting for her youngest grandsons ages 1½ and 2½. She has five children, 12 grandchildren and a great-grandson, age 1,

ENV welcomed Project Manager **Bryan Phillips** in February 2007. Bryan holds a bachelor's degree in zoology and masters in aquatic ecology from Auburn University. Before joining ENV, he worked as a contract biologist and NEPA analyst for the Redstone Arsenal U.S. Army post in northern Alabama. Bryan and his wife, Catherine, have a 3-year-old son named Joshua.

Project Manager **Juan Valera-Lema** joined PM in February 2007. Juan holds a bachelor's degree in agriculture from what is now known as Texas State University and a Ph.D. in natural sciences from Texas A&M University. Before immigrating to the United States in 1974, Juan worked for the Ministry of Agriculture and Forestry in his native Peru. Once in Austin, he began a long career with the city, starting out in its Office of Environmental Resource Management and later transferring to Parks and Recreation. After serving as the manager of the Division of Natural Resources, Juan retired from the city in 2004. Throughout the years, Juan has been very active in volunteer work promoting cultural exchange with Latin America and environmental awareness in Peru. He and his wife Diana have five kids - all of whom still reside in Austin - and he enjoys many interests outside of work, including history, Hispanic and Native American cultures, horses and travel. You can often see him riding to and from work on his bicycle, which is his main form of transportation around the city.

Don't peek before trying puzzle on Page 15!

Answer to Rebus Ruckus on Page 15:
"H+eye ox-Q-pants-C V-lick-ill L+aim"
= High Occupancy Vehicle Lanes.

Asphalt claims title as the most recycled material

H.G. Quinn
Environmental Affairs Division

If you think aluminum cans are the most recycled material in the United States, you're in for a surprise: it's asphalt in terms of both tonnage and percentage.

"Every year, approximately 73 million tons of reclaimed asphalt pavement (RAP) are reused, or nearly twice as much as the combined total of 40 million tons of recycled paper, glass, aluminum and plastics" said Mike Acott, president of the National Asphalt Pavement Association (NAPA).

A report by the FHWA and the United States Environmental Protection Agency confirms that 80 percent of asphalt pavement removed during highway projects is reused. In contrast, the recycling rates are 60 percent for aluminum cans, 56 percent for newsprint, 37 percent for plastic soft drink bottles, 31 percent for glass beverage bottles and 23 percent for magazines.

The asphalt, or bitumen, used nowadays comes from oil refineries; however, asphalt oozes to the surface at various locations around the world, sometimes creating lakes such as the well-known, misnamed La Brea Tar Pit in Los Angeles.

In the oil-rich Middle East, the early Mesopotamian civilization used asphalt from natural seeps for construction of bridges, buildings and roads, as fuel and medicine, as an adhesive for jewelry and a sealant for boats. It is the original super glue. Bricks bonded with asphalt have remained immovable for thousands of years.

Archeology shows that the Mesopotamians used asphalt for more than 2,600 years starting around 3200 BC. The neighboring Egyptians embalmed mummies with asphalt. About 2500 BC the ancient Indus Valley people applied it as a water sealant to the brick walls of a reservoir at Mohenjo-Daro, in present day Pakistan.

Belgian immigrant Edward de Smedt invented asphalt pavement in 1870 at Columbia University in New York City, patented as "sheet asphalt pavement."

By 1872, De Smedt had engineered a modern, "well-graded," maximum-density pavement. The earliest uses of this pavement were in Battery Park and on Fifth Avenue in New York City in 1872 and on Pennsylvania Avenue, Washington D.C., in 1877. Today almost all the roads in developed countries are surfaced with De Smedt's asphalt pavement. Almost two million miles - over 96 percent - of all paved roads and streets in the U.S. alone are surfaced with asphalt.

In FY06 TxDOT, with the largest state highway system, recycled 3.2 million tons of asphalt pavement.

"The full-time staffing of a recycling

(See ASPHALT, Page 16)

Jamandre's Jumbly Word Jambalaya

by Orlando Villa Jamandre Jr.

Unscramble the four jumbled words (one letter to each circle or square) to form four ordinary words and arrange the circled letters to form the puzzle answer.

NELDHA
❍❑❑❑❑❍

DAHZRA
❑❑❍❍❑❑

UTBIRDS
❑❑❑❑❑❑❍

GAEMAN
❑❑❍❑❑❍

Another name for someone who retires from the Pollution Prevention and Abatement Branch…

Print your answers in the circles below.

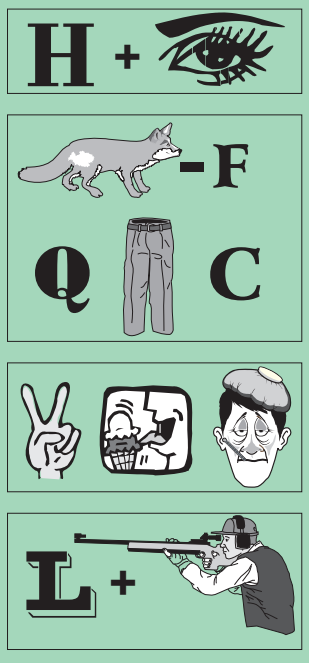
A "❍❍❍–❍❍❍❍"

Answers on back page.

Rebus Ruckus

By H.G. QUINN

Decipher the environmental term!



_____: Used by carpoolers during peak traffic hours.

A "rebus" is a representation of words in the form of pictures or symbols, often presented as a puzzle. Good luck! Answer on bottom of Page 14.

Texas Department of Transportation

Environmental Affairs Division
125 East 11th Street
Austin, Texas 78701-2483

Address correction requested

Jumbly Word Jambalaya Answers

'Another name for someone who retires from the Pollution Prevention and Abatement Branch' … a 'HAZ-BEEN'

HANDLE – HAZARD – DISTURB – MANAGE

The Pollution Prevention and Abatement Branch (PPA) within the Natural Resources Management Section (NRM) provides TxDOT districts and divisions with technical guidance and regulatory support relating to hazardous materials (hazmat) issues along with coordination among state and federal environmental agencies.

Asphalt: Recycling saves money

(Continued from Page 15)

program is unique among state DOTs, particularly staff that identify recycled materials for roadway construction," said Woody Raine, manager of TxDOT's Recycling Program.

The positive economic and environmental benefits of recycling asphalt pavement are summed up by NAPA president Mike Acott.

"The recycling of asphalt pavement is an everyday business practice. Using RAP results in lower costs. We use less virgin material and, by avoiding trips to the landfill, we use less diesel fuel. Considering today's fuel prices, these savings add up considerably for taxpayers on public road projects," Acott said.

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We welcome ideas for stories and standing features. Submit those to the above address, attention Richard Goldsmith, phone 512.416.2743; via GroupWise to "rgoldsmi" within TxDOT; "rgoldsmi@dot.state.tx.us" for e-mail from outside TxDOT.

Does ENVision reach the right person within your organization? Contact us to correct or to suggest additions to the mailing list.

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RECYCLED PAPER
SOY-BASED INK