

A QUARTERLY NEWSLETTER FOR THE LOWER COLORADO RIVER BASIN: WORKING TOGETHER TO SOLVE COMMON PROBLEMS

TOPOGRAPHIC MAPPING FOR THE COLORADO RIVER BASIN

LCRA, the Texas Natural Resource Information Service (TNRIS), and the Texas Colorado River Floodplain Coalition (TCRFC) are cooperating to collect topographic data for areas of the Colorado River basin. This topographic information is being collected for building hydraulic models for use in studies and forecast models along the Colorado River from:

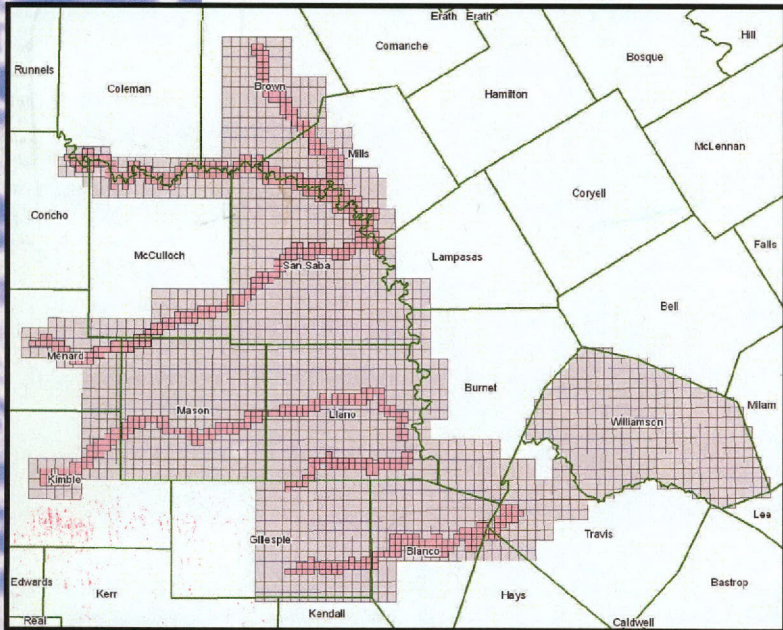
- OH Ivie to the Colorado River near San Saba gage
- Llano, San Saba, and Pedernales rivers

- Sandy Creek, a tributary to Lake LBJ
- Pecan Bayou

Forecast and study models already have been completed for the Colorado River near San Saba gage to the Gulf of Mexico (483 miles).

This topographic data is being collected by using Light Detection and Ranging or LIDAR. For every \$3 LCRA funded, TNRIS matched it with \$1. In addition, the TCRFC recently expanded its mapping program in order to leverage local dollars against TCRFC funds to develop LiDAR data for areas outside of the Colorado River watershed. The figure at left shows two resolutions of data: 0.7 meter for the area of the hydraulic models of the waterways being studied (shown in pink in the figure) and 1.4 meter data for the area (shown in gray). Some of the counties, such as Mason, Llano and San Saba, will have topographic data for the whole county. Other counties such as Brown, Mills, Menard, Gillespie, Blanco, Lampasas, Hays, and Burnet will have some portion of the county mapped. Currently the topographic data is being checked to ensure it meets the specifications that reflect the terrain as accurately as possible. The data will be available to the public via the TNRIS Web site at <http://www.tnris.state.tx.us/>. A date has not been set for the release of this data but when the data is available, an announcement will be made.

Map: Phase One of LiDAR data collection



Legislation will affect Colorado River basin

In May, U.S. and state lawmakers passed two significant pieces of legislation that will affect floodplain management in the Texas Colorado River basin.

U.S. Congress passed the Water Resources Development Act of 2007 (WRDA), which provides for the conservation and development of water and related resources and authorizes the Secretary of the Army to construct improvements to waterways and waterfronts. Texas lawmakers approved legislation to transfer responsibility for the state coordination of the National Flood Insurance Program (NFIP) from the Texas Commission on Environmental Quality (TCEQ) to the Texas Water Development Board (TWDB) and to provide for the administration and funding of the program.

WRDA authorizes funding to construct projects identified in the U.S. Army Corps of Engineers Lower Colorado River Basin Study, which has been ongoing for the past five years. This includes flood protection projects along Onion Creek in Austin and on the Colorado River in Wharton. Congress would still need to approve funding for the projects through additional specific appropriations. *The total costs would include \$110.73 million, federal funds of \$69.64 million and an estimated \$41.09 million in non-federal funding.*

The proposed projects include a levee and drainage system in the City of Wharton and the buyout of approximately 490 structures along Onion Creek within the jurisdiction of Travis County and the City of Austin. About 60 percent of Wharton is located within the 100-year floodplain. The levee

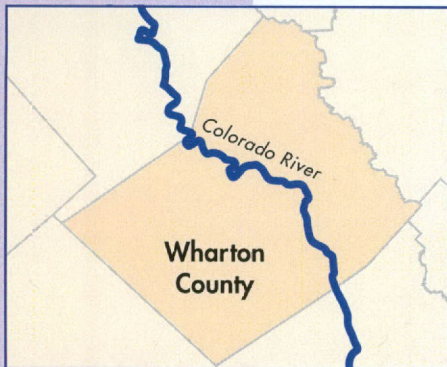
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WHARTON COUNTY FLOOD MITIGATION PLAN

By Monica Martin, CFM, Wharton County Floodplain Manager
and John Ivey, PE, CFM, Halff Associates, Inc.



The planning and H&H study effort has now become a multi-county – multi-agency event that includes participation from:

Austin County (www.austincounty.com)
Brazoria County (www.brazoria-county.com)
Colorado County (www.co.colorado.tx.us)
Fort Bend County (www.co.fort-bend.tx.us)
Wharton County (www.co.wharton.tx.us)
City of East Bernard
City of El Campo (www.ci.el-campo.tx.us)
City of Wharton (www.cityofwharton.com)
LCRA (www.lcra.org)
U.S. Army Corps of Engineers (www.usace.army.mil)
FEMA (www.fema.gov)
TCRFC (www.tcrfc.org)
Texas Department of Transportation
(www.dot.state.tx.us)
National Resources Conservation Service
(www.nrcs.usda.gov)

Wharton County initiated a county-wide Flood Mitigation Plan as the logical next step following the Federal Emergency Management Agency's (FEMA) publication of the Wharton County Flood Insurance Study and Flood Insurance Rate Maps (FIRMs) and FEMA's approval of the Texas Colorado River Floodplain Coalition all-hazards Mitigation Plan that included Wharton County.

In February 2006, Wharton County received a Flood Mitigation Assistance (FMA) planning grant from the Texas Water Development Board (TWDB). The Wharton County Flood Mitigation Plan is a county-wide planning effort involving Wharton County and the cities of East Bernard, El Campo and Wharton. Monica Martin is Wharton County's project manager and Halff Associates was selected to assist in the planning effort.

The Wharton County remapping project was a joint effort by FEMA Region VI and LCRA, a FEMA Cooperative Technical Partner. The mapping product was new county-wide digital FIRMs with the 100- and 500- year floodplain and floodway boundaries with base flood elevations for only 14 streams in Wharton County leaving 67 streams mapped with approximate (Zone A) boundaries.

Wharton County is bisected by the future Interstate 69 also known as U.S. 59 and the NAFTA Expressway. The Houston metroplex expansion is rapidly closing in on Wharton County with adjacent areas in Fort Bend County exceeding 57 percent growth from 1990 to 2000. Wharton County, realizing the immediate need for detailed floodplain information both in Wharton County and the San Bernard River watershed, received a two-part TWDB flood protection planning grant to conduct detailed hydrological and hydraulic studies through-

out Wharton County and the San Bernard River watershed. Five major planning and study efforts are now under way:

- Wharton County Flood Mitigation Plan
- Wharton County Drainage Master Plan
- San Bernard River Watershed Flood Protection Planning Study
- City of El Campo Drainage Master Plan
- City of Wharton application to enter FEMA's Community Rating System (CRS) Program

The Wharton County Flood Mitigation Plan is being prepared using FEMA's CRS Program planning guidelines. The completed plan must be formally adopted by the Wharton County Commissioners Court and the city councils of the cities of East Bernard, El Campo and Wharton and approved by TWDB and FEMA for all participating communities to be eligible to receive future FMA program funding. The plan will include flood mitigation actions to save lives and minimize flood losses from future flood events. One such action is to establish a network of permanent survey benchmarks referenced to North American Vertical Datum of 1988 (NAVD 1988), the National Geodetic Survey (NGS) nationwide vertical reference datum, which is the basis for all FEMA remapping. After reviewing an early draft of the Wharton County Flood Mitigation Plan, LCRA established a Global Position Survey base station in Bay City, which is accessible in Wharton County, and set three new High Accuracy Reference Marks in Wharton County reference to NAVD 1988.

The proposed Wharton County Flood Mitigation Plan includes a summary of the various planning and H&H study efforts referenced above and will serve as a blueprint to improve floodplain management county wide.

FLOODPLAIN MAPPING UPDATE

Updated Flood Insurance Rate Maps (FIRM) and Flood Insurance Studies (FIS) are critical tools in the effort to protect lives and property in the lower Colorado River basin. Through the FEMA Map Modernization program, progress continues on remapping projects in this basin.

BROWN COUNTY

Mapping efforts in Brown County began April 30 with a scoping meeting in Brownwood. At this meeting community officials and cooperating technical partners shared with FEMA the local mapping needs and offered resources they have to aid FEMA's map update process.

BURNET COUNTY

Burnet County will receive 9 new map panels in conjunction with the Travis County mapping project in order to keep floodplain information consistent along Lake Travis despite jurisdictional boundaries. The deadline for appeals and protests was September 14, 2006. FEMA issued a Letter of Final Determination on May 16, 2007. Affected communi-

ties will have 6 months to adopt the new maps into their local floodplain regulations.

COLORADO COUNTY

Colorado County was initially scheduled to begin mapping in 2007. This has been rescheduled for 2008.

LLANO COUNTY

Mapping efforts in Llano County began with a scoping meeting on April 27. At this meeting community officials and cooperating technical partners shared with FEMA the local mapping needs and offered resources to aid FEMA's map update process.

MATAGORDA COUNTY

Matagorda County mapping began in 2006, but the effort is delayed waiting for the coastal LIDAR data that was scheduled for release October 2006. Once this data is available, the U.S. Army Corps of Engineers will perform the coastal surge analysis.

TRAVIS COUNTY

FEMA delivered preliminary Digital Flood Insurance Rate Maps (DFIRMs) to Travis County communities in February 2006. The deadline for appeals and protests was Sept. 14, 2006. As soon as FEMA reconciles these, a letter of final determination will be issued and communities will have six months to adopt the new maps into their local floodplain regulations.

WILLIAMSON COUNTY

FEMA delivered preliminary DFIRMs in September 2006. FEMA conducted a community coordination meeting in December 2006 to discuss the appeals and adoption processes for the maps. The deadline for appeals and protests was May 22, 2007. As soon as FEMA reconciles these, a letter of final determination will be issued and communities will have six months to adopt the new maps into their local floodplain regulations.

Legislation affecting Colorado River basin, continued from front page

and drainage system would essentially remove Wharton entirely from the 100-year floodplain, significantly reducing the risks of flood damages as well as reducing insurance and building costs. The Onion Creek project would prevent the recurrence of approximately \$500 million in flood damages to the cities of Austin and Sunset Valley and Travis County by purchasing and relocating two subdivisions of 490 residences. In their place, recreational facilities and ecosystem restoration improvements are planned. Strong support by the Texas Colorado River Floodplain Coalition was key in obtaining congressional funding for the studies and authorization for the projects.

These projects were derived from the Lower Colorado River Flood Damage Evaluation Project (FDEP, <http://fdep.org>) in which the U.S. Army Corps of Engineers evaluated the impact of flood damage along 473 miles of the Colorado River and its tributaries. Flood models from this study also are used in mapping updates for Flood Insur-

ance Rate Maps (FIRMs) in the basin. WRDA also establishes the National Levee Safety Committee to advise in the coordination and implementation of a national levee safety program.

In the Texas Legislature, State Sen. Royce West and Rep. Brandon Creighton introduced Senate Bill 1436 and House Bill 3073 to move the state's NFIP coordinating office from the TCEQ to the TWDB. This move would consolidate the program with other floodplain-related programs, including the Flood Mitigation Assistance program, which disburses federal grant money to local communities for flood mitigation planning and projects. In addition, TWDB's Texas Natural Resources Information System houses digital geographic data for the state and is poised to become a state repository for digital FIRMs. This move would be accompanied by \$6 million in additional funding and six new staff members to support the program, which is funded by state fees collected with flood insurance premiums.

A hot summer, but conditions not as dry as last year

By Bob Rose, LCRA Chief Meteorologist

Most long-time Texans will tell you it doesn't take a meteorologist to forecast Texas summer weather. It's going to be hot and generally dry with occasional summer showers. Some summers work out that way but most contain surprise periods of rain, clouds and sometimes tropical storms out of the Gulf of Mexico. This summer is shaping up to be one of those atypical summers.

Overall, temperatures will be hot, but periods of rain will be more frequent than last year. Plus, there will be a greater than usual chance the weather will be influenced by tropical storms and hurricanes from the Gulf.

Weather conditions this summer will be heavily influenced by a moist flow off the Gulf of Mexico. Clouds and showers associated with this flow will produce periods of showers and thunderstorms throughout the summer. Long-range forecast solutions call for near normal rainfall June through August due to periods of rain and storms. Despite the rain, temperatures will be hot, with readings averaging slightly above normal. I do expect we'll see several days with temperatures above 100 degrees.

It's shaping up to be a busy year in the tropical Atlantic, with early forecasts pointing toward a well above normal number of storms. The combination of favorable winds across the tropical Atlantic, unusually warm sea-surface temperatures and a developing La Niña phenomenon in the Pacific will cause the development of numerous storms from the Gulf of Mexico through the Caribbean. The Gulf coast, from Texas to Florida, appears to have a higher than normal chance for storms making landfall. Even a weak tropical depression or tropical storm could produce widespread flooding if it moves inland and tracks across Central Texas.

Yes, this summer will again be hot. But hold on for some surprises.

E-mail him at bob.rose@lcra.org.



Approaching storm in Wharton County

Flash flood deaths on the rise since drought broke

For part of 2005 and all of 2006, most of Texas suffered under extended drought conditions. As a result, records from the National Weather Service show Texas recorded only three flood-related deaths in 2005 and again in 2006. But weather conditions began to change in 2007 and now, for the past

couple of months, much of the state has been in an extremely wet period. So far in 2007 the number of Texans who have drowned in flood waters has risen rapidly. The majority of these victims were driving or riding in vehicles stalled on flooded roads and low-water crossings.

Flood-related Deaths in Texas, 2007 to date*	
Jan. 13	A woman died after her vehicle was swept off a low-water crossing in Milam County.
Jan. 13	A couple died in Austin County when their vehicle was swept away by flood waters.
Jan. 13	A woman died after being swept into flooded Waller Creek in Austin as she walked along the banks.
March 10	A woman drowned after she tried to drive across a flooded road in Comal County.
March 12	A woman drowned in Guadalupe County when her vehicle stalled in rising water at a low-water crossing.
March 12	A man's body was found near his flooded vehicle in Hays County and his death was ruled a drowning.
March 13	A man drowned after driving his vehicle onto a flood bridge in Georgetown.
March 30	A man died in Fort Worth when his truck was swept into flood waters.
March 30	A 2-year-old boy playing with others in a dry creek bed at Fort Hood was swept away by rapidly rising flood waters.
April 1	A female motorist, stranded in a submerged vehicle, lost her life in Van Zandt County.
May 2	A woman was discovered in Bexar County in a submerged vehicle while rescuers were saving six people nearby.
May 2	A man lost his life in Comanche County as his vehicle was swept into flood waters.
May 3	Two people died in flash flood waters in Kendall County.
May 24	A man is missing after trying to cross a flooded low water crossing by driving around a barricade in Gillespie County.
May 24	Two brothers, ages 5 and 6, died when the SUV they were riding in was swept off a flooded road in Killeen.
May 24	A man died in the Killeen area after being swept from his feet by fast moving water while walking along a roadside ditch.
May 24	A man is missing from the Killeen area after the car he was attempting to move was swept away.
May 24	A couple died in Coryell County when their minivan was swept off FM 3064.
May 27	A woman died after trying to cross a bridge in high water in McLennan County.
May 28	A man drowned in Kendall County when he and his son tried to navigate a swollen stream in a canoe.

* current list at time of printing

Calendar of Events

June 25-28

Managing Floodplain Development through the NFIP, FEMA four-day course

Austin, TX – Texas Floodplain Management Association, www.tfma.org, tfma@verizon.net

July 10-12

Basic Emergency Management Workshop – G610

Austin, TX – Governor's Division of Emergency Management, <http://www.txdps.state.tx.us/ftp/dem/training/07training.pdf>

July 10, 12, 18

Texas Colorado River Floodplain Coalition Regional Meetings

www.tcrfc.org or contact Liz Valenzuela at Liz.Valenzuela@lcrf.org

July 24-26

Advanced Mitigation Course – G720

Austin, TX - Governor's Division of Emergency Management, <http://www.txdps.state.tx.us/ftp/dem/training/07training.pdf>

August 28-30

Basic Mitigation Course – G710

Austin, TX - Governor's Division of Emergency Management, <http://www.txdps.state.tx.us/ftp/dem/training/07trainingcal.pdf>

September 17-21

Managing Floodplain Development through the NFIP, FEMA four-day course

Tyler, TX – Texas Floodplain Management Association, www.tfma.org, tfma@verizon.net

September 24-28

Flood Fight Course – G361

San Antonio, Texas Governor's Division of Emergency Management, <http://www.txdps.state.tx.us/ftp/dem/training/07training.pdf>

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