

Coordinated Watershed Protection in Southeast and South Central Texas

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Update from the Regional Watershed Coordinator

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Hello, and welcome to the July issue of the newsletter. We are wrapping up another couple of busy months of activities across the region.

The TSSWCB Wharton Regional Watershed Coordination Steering Committee (WCSC) met in Columbus on June 7.

Chandra Eggemeyer from the Texas Commission on Environmental Quality (TCEQ) gave a presentation on their Supplemental Environmental Projects

| WCSC Meeting Schedule |
|-----------------------|
| September 6, 2007 |
| December 6, 2007 |
| March 8, 2008 |
| June 6, 2008 |

(SEP) funding. SEPs can be described as environmental enhancement projects that are used to offset fines in enforcement matters. Through an SEP, a respondent in

an enforcement matter can choose to invest penalty dollars in improving the environment, rather than paying into the Texas General Revenue Fund. The purpose of an SEP is to: prevent pollution, reduce the amount of pollutants reaching the environment, contribute to the public

awareness of environmental matters, and enhance the quality of the environment.

The three key criteria for grant approval include; being environmentally beneficial, done as a result of a settlement in an enforcement action, and to go beyond compliance requirements of a violator. Other factors include: state, regional, and community environmental priorities, same media as the violation (air, water, or waste) and be in or near the community in which the violation occurred.



Capping abandoned water wells can be funded through an SEP; TCEQ photo

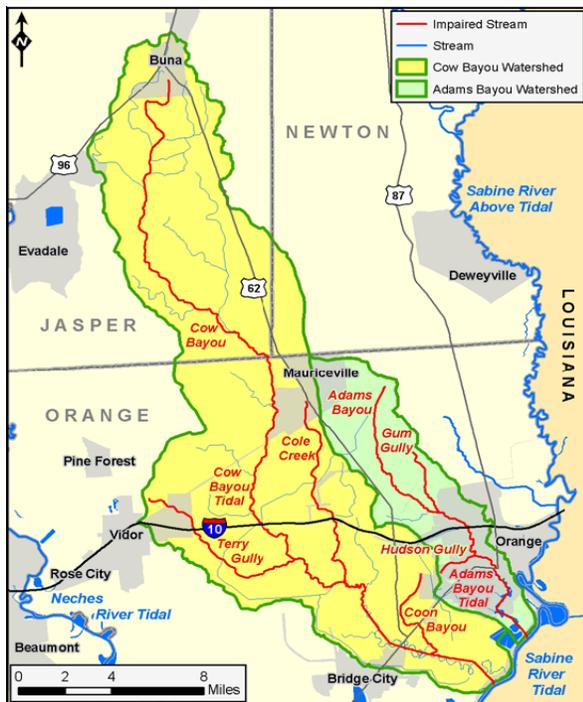
SEPs may not bring the violator into compliance or correct the violation, remediate any environmental harm caused by the respondent, or benefit the respondent financially or economically. Additionally, it cannot be a pre-planned or pre-budgeted project and cannot take

place at the site of the violation. Types of SEPs include: pre-approved, which are existing SEPs that the respondent can choose, or a custom SEP, where the respondent submits their own idea for a project to benefit their local community.

Some SEP ideas include: plugging abandoned water wells, wastewater treatment assistance, abandoned tire cleanups, cleanup of unauthorized trash dumps, Household Hazardous Waste Cleanups, plus many other ideas.

<http://www.tceq.state.tx.us/legal/sep/index.html>

Miles Hall, from the Sabine River Authority provided an overview of the Adams and Cow Bayous TMDLs for bacteria, DO, and pH. A brief history and overview of both watersheds was given. The Cow Bayou watershed is 194 square miles, and begins in Jasper County, and runs through the middle of Orange County to its confluence with the Sabine River.



Map of the watersheds of Adams and Cow Bayous in Orange County; Sabine River Authority

Most of Cow Bayou below IH-10 was channelized in the 1940's to serve the

growing industries in the area. Adams Bayou watershed is 51 square miles, and is contained mostly in Orange County. Both watersheds above IH-10 are dominated by rural areas and below IH-10 by urban areas and permitted wastewater dischargers.

In 2003 a Stakeholder Advisory Group and a Technical Advisory Group were formed to help develop 17 TMDLs on Adams and Cow Bayous and their tributaries. Through the TMDL study, it was determined that for some waterbodies in the Adams Bayou watershed, as much as a 60% load reduction in cBOD and NH₃N is needed to meet the standard for DO, and as much as an 83% reduction is needed to meet the bacteria standard. For some waterbodies in the Cow Bayou watershed, as much as a 69% reduction in cBOD and NH₃N is required to meet the DO standard, and as much as an 83% reduction is needed to meet the bacteria standard.



Cow Bayou near Orangefield, notice how the bayou has been channelized; Sabine River Authority photo

The major pollution sources identified in both waterbodies included: failing septic, pastureland, permitted dischargers (BOD only), and urban NPS. Work on an Implementation Plan with major stakeholder involvement has begun, with components such as regional wastewater treatment and public education and awareness. This TMDL has been adopted by TCEQ.

<http://www.tceq.state.tx.us/implementation/water/tmdl/37-orangecounty.html>

Also at the June 7 meeting, the criteria that were used to select Plum Creek as a pilot watershed for WPP development in the TSSWCB Wharton regional service area were reviewed. The review included the parameters updated with more current information, and comments that were received. The next WCSC meeting will be Thursday, September 6, 2007 at 10:00 a.m. in Columbus.

The Galveston Bay Council held their quarterly meeting in Houston on July 25. A presentation was given on the Clean Texas Marinas Program. In 2000, Texas Sea Grant, TCEQ, and GBEP used grant money from NOAA and the GLO to reduce pollution from boats in marinas. Since 2000, 61 marinas were certified as Clean Marinas, and 41 have pledged to be Clean Marinas statewide. The other presentation was on the East Bay Restoration Project where Galveston Bay Foundation is working to restore shoreline and adjacent marsh along the Anahuac National Wildlife Refuge shoreline. During the roundtable discussion, updates on legislative action that could potentially affect the Galveston Bay Watershed were reported by the members. <http://www.gbep.state.tx.us/>

On July 26, the Lavaca-Navidad River Authority Clean Rivers Program held their annual steering committee meeting in Edna. An overview of the Clean Rivers Program was given, and the Basin Summary Report for LNRA was highlighted.

The major water quality issues for the basin are nutrient enrichment concerns due to ammonia and total phosphorous in Lake Texana and its tributaries. An update on the UAA for DO in the Upper Lavaca River was given, and it was noted flow dependent factors such as no flow and large pools in the summer months were contributing to the problem. As a result, a standards revision for the upper 29 miles of the Lavaca River will be recommended.



Rocky Creek in Lavaca County south of Hallettsville; LNRA photo

A second presentation was on Fish and Oyster Health in Lavaca Bay. This presentation focused on oyster harvest and elements of water quality, such as bacteria and red tide that can affect the harvest of oysters. <http://www.lnra.org/>

For more information on the WCSC, including meeting summaries and presentations, and past issues of this newsletter please visit:

www.tsswcb.state.tx.us/cwp

Gray Water Alternative for Sub-irrigating Landscape Plants

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When the weather turns dry, Texans may start thinking about the best ways to avoid high water bills and still maintain their landscaping.

Gray water may be one option, said Dr. Bruce Lesikar, Texas Cooperative Extension agricultural engineer.

Gray water is the water that has passed through showers, sinks, bathtubs or washing machines, Lesikar said. It makes up about half of the water used in the home and normally passes into on-site wastewater treatment systems or city sewer systems.

"The typical resident will have about 30 gallons per person per day," he said.

"Gray water is a source (of water) that's already paid for, and you can use it in your landscape," he added.

It is different from black water that comes from the toilet or kitchen sink. Black water has the potential to have many solids and therefore cannot be used on landscapes without treatment, he said. Gray water is not without risk, though.

"It does come into contact with the human body so there is a risk for having organic matter as well as pathogens," Lesikar said. "So it needs to be used safely and wisely."

Gray water may contain high concentrations of sodium and phosphorus from soaps, detergents and cleaning products. If not leached out, these can build up, harming soil health, he said.

State regulations affect how gray water systems may be installed and used, Lesikar said. A typical gray water system consists of a diversion valve to direct gray water to the reuse system, a tank to separate solids, an effluent screen to trap solids before they leave the tank, an overflow pipe with two black water valves going to the onsite wastewater treatment system or municipal sewer, and a distribution system delivering gray water to the plants. The pipe for distributing the water must be purple to designate that it is reclaimed wastewater.

A gray water system must be used to avoid ponding or build-up of water on the ground surface, he said. Ponding may cause nutrients and salts to build up in one place in the yard, or it may attract nuisances like insects. Plus, if pets play or roll in wet areas, they could bring wastewater back into the house.

"Because there is the potential risk in ponded water, pets may be exposed to pathogens," he said.

Typically, gray water systems that are whole-house systems are completed at the time the house are built.

"If you are planning on a gray water system, you have to start by planning early," he said. "Houses that are on blocks or above the ground do have the ability to be re-plumbed to separate gray water for use. For houses that are on slabs, it is more difficult to separate the sources once the house is built."

If washing machines or other sources are on exterior walls, however, homeowners can plumb through the wall and access that water, he said. However, the gray-water tank must be able to overflow through two black water valves to the on-site wastewater treatment system or municipal sewer to be in compliance with state regulations.

Gray water systems may be used on all soil types. However, sites with heavy clays will not easily accept water and will tend to be wet during winter months, Lesikar said. In that case, have a diversion valve at the beginning of the system. This allows the gray water to be diverted to either onsite wastewater treatment systems or city sewers if needed or if conducting maintenance on the system.

Like almost everything else, gray water systems do need routine maintenance, and the solids will have to be removed from the tank periodically, he said. Wear gloves when working on systems to protect against pathogens, Lesikar cautioned. The diversion valve, though not required by state regulations, will allow water to be diverted into black water systems and reduce exposure to pathogens.

Tanks and rigid purple pipe may be purchased at plumbing supply stores, he said. However, flexible pipe may have to be painted purple, he said.

Update from the Upper San Antonio River Watershed Protection Plan

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Since the acceptance of the Upper San Antonio River Watershed Protection Plan (WPP) by the TCEQ in January 2007, the City of San Antonio and the San Antonio Water System (SAWS) has moved forward to implement Best Management Practices (BMPs) identified in the WPP to reduce bacterial concentrations in the River.

One of the sources of bacteria identified in the WPP, a bat colony under the Houston Street Bridge over the River in the downtown area, was addressed in March. The City waited till the bats were gone and sealed the bridge. Since that time the bat guano and associated smell has disappeared from the area.



Houston Street Bridge Where Bat Colony Was Identified; SARA photo

The City has selected a consultant to design and build the ultraviolet (UV) disinfection system, another BMP identified in the WPP, to address the bacterial loading coming from the San Antonio Zoo. This system, when online, is expected to dramatically reduce the bacterial concentration in the River from the zoo through the downtown area.



Example of Low Pressure Ultraviolet Disinfection Facility; SARA photo

Another BMP was addressed in January when the City drained the River Loop portion of the River. Numerous pipes and drains that may discharge to the Loop were inspected using remote cameras and several pipes were sealed.



San Antonio River Downtown – Drained; SARA photo

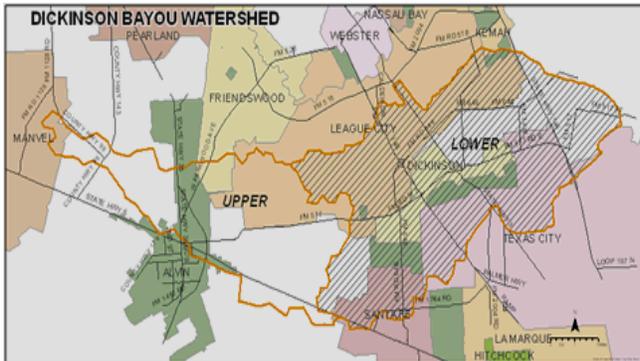
SAWS has completed the construction of a sewer main in a low income area near the San Antonio River where 117 homes were found to be on private septic systems of various types. SAWS is currently in the process of making connections to these homes through a grant program.

http://www.sara-tx.org/site/water_quality/water_qual_mon/Projects_and_Studies.html#Anchor-WATERSHE-48985

The Dickinson Bayou Watershed Partnership: A New Beginning, an Old Problem

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Dickinson Bayou is on State's 303(d) List of Impaired Waters low dissolved oxygen and high bacteria levels.



Dickinson Bayou Watershed; Texas Sea Grant

To address these concerns, a partnership was formed between various government agencies to conduct an analysis to determine why the bayou did not support its aquatic life and contact recreation uses.

Profiled water quality data was collected in the field while water samples were collected at sonde depths. After laboratory analysis was completed, sonde, field and laboratory data was compiled into meaningful graphs and tables which were interpreted to form generalized conclusions about Dickinson Bayou. Major findings of the study confirmed that Dickinson Bayou's low dissolved oxygen levels are influenced by salinity, ambient temperature, and rainfall as well as algal blooms and organic loading.

As a result of this study and other independent investigations, concern was on the rise with government agencies, municipalities, and local citizens. The TCEQ, the Galveston Bay Estuary Program, and other entities were already

involved and interested in finding ways to bring the bayou to a healthier state.

The Texas Coastal Watershed Program was an obvious choice to help facilitate this process as it is a non-regulatory entity and a part of Texas Cooperative Extension and Texas Sea Grant. The Texas Coastal Watershed Program had the necessary experience and had already been in the watershed, wetland, and water quality business for some time.

It was soon thereafter that the Texas Coastal Watershed Program applied for several grants to help facilitate the Dickinson Bayou Watershed Partnership. The first step was to hire a Dickinson Bayou Watershed Coordinator to take the lead in this process.



Stormwater runoff into Gum Bayou, a tributary of Dickinson Bayou; photo by Texas Sea Grant

This Partnership started in 2005 and immediately grew upward to one-hundred interested stakeholders. Meetings were held and committees were formed. After months and months of many hours of meetings, a Dickinson Bayou Watershed Partnership was solidly formed with a committed group of people representing government, education, industry, business, citizens and other local stakeholders.

Today, the Dickinson Bayou Watershed Partnership is coordinated by Watershed Coordinator, Bud Solmonsson. They have six committees/workgroups: water

quality, land use, flood and stormwater, habitat, recreation, and education and outreach.

The Workgroups meet on a monthly basis and the Partnership meets on a bi-annual basis. The Partnership expects to have a final draft of the Dickinson Bayou Watershed Protection Plan by summer of 2008. For further information on the Dickinson Bayou Watershed Partnership please call (281) 218-6340.

<http://www.dickinsonbayou.org/>

Partnership Grants Available for Projects in Houston/Galveston Area

The TCEQ requests proposals and applications for projects to implement on-the-ground water quality improvement projects in the Houston/Galveston area under a federal/state partnership grant. Applicants should propose projects that have a high probability of achieving quantifiable improvements in water quality conditions.

The due date for applications is October 23, 2007. The TCEQ will hold a public workshop for applicants at the Houston-Galveston Area Council offices on September 6, 2007, from 10:00 a.m. to 1:00 p.m.

The TCEQ expects to award a total of \$4 to \$5 million for two to ten grant contracts that will be funded in federal fiscal years 2008 and 2009. To be eligible, projects must be implemented in one or more of the following counties: Harris, Galveston, Chambers, Brazoria, Liberty, Fort Bend, and Montgomery. Proposed projects should address impairments to water quality due to nonpoint source pollution; however, in very limited cases, point source pollution controls may be eligible for funding.

Go to <http://esbd.tbpc.state.tx.us> for more details and to download and application package. Search the

bid/procurement opportunities by agency name (TCEQ) and/or Requisition Number 582-7-80172. The title of the request is The Houston/Galveston Area Water Quality Improvement Partnership Grant.

Upcoming Water Quality Meetings

August 20, 2007

Texas Watershed Coordinator Roundtable, 10am-3pm, Temple

August 21, 2007

Dickinson Bayou Watershed Committee Meeting, 11am-1pm, Dickinson

Buffalo Bayou TMDL meeting, 4p-7p, Houston

Atascosa River TMDL for Bacteria Meeting, 7-8:30pm, Pleasanton

August 23, 2007

San Antonio River Authority Clean River Program Meeting, 1-4pm, San Antonio

Elm and Sandies Creeks TMDL for Bacteria and DO, 7-8:30pm, Cuero

August 27-30

15th National EPA Nonpoint Source Monitoring Conference, Austin

August 28, 2007

Plum Creek Watershed Tour for the 15th National EPA Nonpoint Source Monitoring Conference

September 6, 2007

TSSWCB Wharton Regional Office Watershed Coordination Steering Committee Meeting, 10am-12pm, Columbus

TCEQ Surface Water Quality Advisory Work Group meeting, 9am-4pm, Austin

September 13, 2007

Plum Creek WPP Steering Committee meeting, 6p-9p, Lockhart

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