



Improving Water Quality in the Arroyo Colorado

A Watershed Plan for Dissolved Oxygen

Water Quality in the Arroyo Colorado

The state of Texas requires that water quality in the Arroyo Colorado be suitable for swimming, fishing, and a healthy aquatic ecosystem. However, water quality analyses have found that dissolved oxygen levels are sometimes too low downstream of the Port of Harlingen (Segment 2201) to provide optimum conditions for fish and other aquatic life. Oxygen gas, which dissolves in water, is essential for the survival of aquatic life. While the amount of dissolved oxygen in water fluctuates naturally, various human activities can cause unusually or chronically low dissolved oxygen levels which may harm fish and other aquatic organisms.

In response to this impairment, the TCEQ's Total Maximum Daily Load (TMDL) program is facilitating local efforts to develop a watershed protection plan (WPP) to improve conditions in the Arroyo Colorado. Working with the TCEQ and other agencies, a local steering committee will devise and implement strategies to increase dissolved oxygen in the arroyo.

Learn more about water quality standards, monitoring, and TMDLs by reading *Clean Water for Texas: Working Together for Water Quality*. For general information about how TMDL projects are structured, read *The TMDL Process in Texas: What You Need to Know*. Both documents are available on the Web at www.tnrcc.state.tx.us/water/quality/tmdl/.

Description of the Arroyo Colorado Watershed

The Arroyo Colorado, an ancient distributary channel of the Rio Grande, extends about 90 miles from Mission, Texas to the Laguna Madre in the Rio Grande Valley. Flow in the Arroyo Colorado is sustained by waste water discharges, agricultural irrigation return flows, urban runoff, and base flows from shallow groundwater. Although an integral part of a major floodway system, water is rarely (only during major flood events), diverted from the Rio Grande into the Arroyo Colorado. The Arroyo is also the major source of fresh water to the lower Laguna Madre, an economically and ecologically important resource to the region.

The Arroyo Colorado watershed (1,823 square kilometers) is a flat coastal plain that slopes gently toward the Gulf of



Mexico. The fertile farmland, long growing season, and access to water for irrigation from the Rio Grande make this region one of the most productive agricultural areas in the U.S. The Laguna Atascosa National Wildlife Refuge and several county and city parks are located within the Arroyo watershed. The mild climate, semi-tropical plants and animals, and many recreational opportunities draw large numbers of people to the Arroyo Colorado watershed. One third of the stream is used for shipping from the Gulf Intracoastal Waterway to the Port of Harlingen.

Public Participation Process

The Arroyo Colorado Watershed Steering Committee advises the TCEQ on this project. The committee has representatives from permitted wastewater dischargers, agriculture groups, universities, citizen groups, and local, state, regional, and federal government agencies.

Project Development

The steering committee, in cooperation with the TCEQ, has established several work groups to address the five major components of the watershed plan: wastewater infrastructure; agricultural issues; habitat restoration; refinement of the TMDL analysis; and public education.

For More Information

For information on upcoming meetings and documents available for review, contact one of the following representatives from the Texas Commission on Environmental Quality (TCEQ) or the Texas State Soil and Water Conservation Board (TSSWCB). Or visit our Web site at www.tnrcc.state.tx.us/water/quality/tmdl/.

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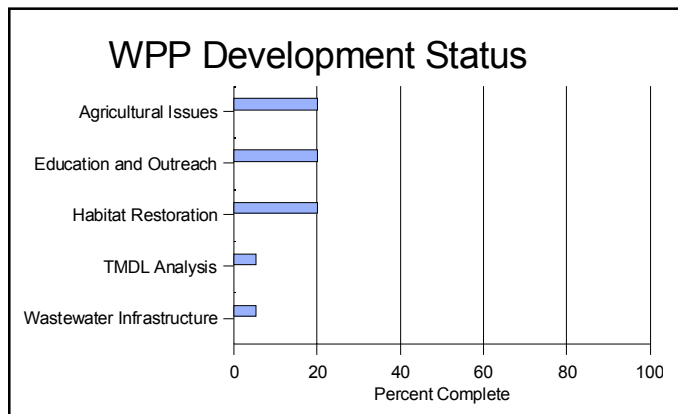
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WPP Development Status

Start: July 2002

Projected End: January 2006



Watershed Protection Plan Highlights

- In June 1998, the Arroyo Colorado TMDL Watershed Steering Committee and Science and Technical Advisory Committee were convened to advise the TCEQ on water quality issues in the Arroyo Colorado.
- Results of a TMDL analysis developed in 2002 indicated that the dissolved oxygen problem in the tidal segment is related as much to the physical setting and geomorphology of the Arroyo Colorado as it is to the loading of nutrients and oxygen-demanding substances (BOD) from the non-tidal segment.
- A project to develop a watershed protection plan was initiated in July 2002 to address dissolved oxygen and bacteria impairments in the Arroyo. The Watershed Steering Committee established five work groups to address key elements of the plan.
- In a related effort, Phase 2 of the TMDL project will refine the draft TMDL that was developed in 2002.
- In May 2004, the TCEQ established contracts with Texas A&M's Sea Grant program and the Texas Parks and Wildlife Department to provide an independent watershed coordinator and a habitat restoration specialist to assist in the development of the WPP.