



Arroyo Colorado: Enhanced Treatment in Regional Stormwater Detention Facilities

Water Body	Arroyo Colorado Above Tidal (Seg 2202)
Location	McAllen, Hidalgo County
River Basin	Nueces-Rio Grande Coastal (22)
Contractor	Texas A&M University at Kingsville (TAMUK)
Project Period	June 26, 2009 to August 31, 2012
Project Total	\$518,780 (Federal 60% and Local Match 40%)

Project Description

The Arroyo Colorado flows through Hidalgo, Cameron, and Willacy Counties in the Lower Rio Grande Valley and eventually empties into the Laguna Madre. The Arroyo Colorado Above Tidal (Segment 2202) is impaired for high bacteria levels and pollutants within fish tissue samples. In response to the water quality impairments, the Arroyo Colorado Watershed Partnership was formed, and a Watershed Protection Plan (WPP) was completed in 2007. The WPP describes the measures proposed for implementation between 2007 and 2015.

For this project, TAMUK will implement a portion of the WPP by improving the performance of Regional Storm Water Detention Facilities (RSDFs) and fostering Low Impact Development (LID) practices. RSDFs are a primary storm water control feature in the area, but they provide minimal control of nutrients and other pollutants in storm water. This project will develop and test several enhancements of existing RSDFs to determine their performance in the Lower Rio Grande Valley's hot and dry climate. These enhancements include rock filters, microscreens, and wetlands adapted and managed to function through intense heat and drought. Each RSDF will be monitored to determine the effectiveness of its enhancements in controlling pollutant loads as storm water passes through it.

Current Status

Microscreen filter equipment has been ordered for the McAuliffe RDF. The designs for the excavated wetlands at the Morris and McAuliffe RDFs are complete. The Morris wetland has been excavated and is awaiting stop-logs and wetland plantings. The Dog Park rock filter is in place and the outlet riser has been modified to improve performance. Pre-implementation water quality data were gathered in June and August, 2011.



For More Information

Results and information from this study will be shared through presentations and site visits in coordination with the Arroyo Colorado Watershed Partnership (<<http://www.arroyocolorado.org>>). Project information will be posted at <<http://www.stormwater.stei.org>>.

TCEQ Project Manager

Bill Carter
512.239.6771; Bill.Carter@tceq.texas.gov

TAMUK Project Manager and Principal Investigator

Dr. Kim Jones
361.593.2187; KJones@tamuk.edu

Project Highlights

- 06/2009 – The contract was initiated.
- 02/2011 – The quality assurance project plan (QAPP) for monitoring the effectiveness of the best management practices (BMP) was completed.
- 03/2010 – Dog Park Riser has rock biofilter excavated and gravel placed.
- 06/2011 – Dog Park Riser lower openings modified.
- 05/2011 – Monitoring equipment installation completed at the three RSDFs.
- 06/2011 – “Baseline” monitoring of water quality began in base flow and storm events prior to BMP installation.
- 06/2011 – Initiated baseline sampling at McAuliffe RDF and Morris RDF
- 08/2011 – Wetland excavation completed at the Morris RSDF.
- 08/2011 – End of quarter samples