



## Arroyo Colorado: Enhanced Treatment in Regional Stormwater Detention Facilities

<b>Water Body</b>	Arroyo Colorado Above Tidal (Seg 2202)
<b>Location</b>	McAllen, Hidalgo County
<b>River Basin</b>	Nueces-Rio Grande Coastal (22)
<b>Contractor</b>	Texas A&M University at Kingsville (TAMUK)
<b>Project Period</b>	June 26, 2009 to April 30, 2013
<b>Project Total</b>	\$520,934 (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 implements 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 developed and tested 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 was monitored to determine the effectiveness of its enhancements in controlling pollutant loads as storm water passes through it.

### Current Status

Microscreen filter equipment was installed at the McAuliffe RSDF. The excavated wetlands at the Morris and McAuliffe RSDFs are complete. The Morris wetland has been excavated and wetland plantings added; stop-logs have been installed. The Dog Park rock filter is in place and the outlet riser was modified to improve performance. Pre- and post-implementation water quality data have been submitted and analyzed. The draft final report has been submitted.



### 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>>.

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## 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 installed and gravel placed.
- 05/2011 – Monitoring equipment installation completed at the three RSDFs.
- 06/2011 – Dog Park Riser has lower openings modified.
- 06/2011 – Initiated pre-implementation “baseline” sampling at McAuliffe RDF and Morris RDF.
- 08/2011 – Wetland excavation completed at the Morris RSDF.
- 08/2011 – End of quarter samples.
- 12/2011 – Two sampling events collected
- 01/2012 – Wetland plantings completed at the Morris RSDF
- 04/2012 – The QAPP Annual Update was completed
- 05/2012 – The design for the structure to house the microscreen filter for the McAuliffe RSDF inlet is completed
- 08/2012 – Revised method for calculating pollutant load reductions established;
- 08/2012 – Quarterly monitoring data submission.
- 08/2012 – Structure to house the McAuliffe RSDF microscreen is installed.
- 01/2013 – Quarterly monitoring data submissions.
- 05/2013 – Draft final report submitted