



# UTSA® Geological Sciences

And

## Institute of Water Research, Sustainability and Policy (IWRSP)

*Seminar Presentation*

*By*

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*On*

*Friday, March 19, 2021  
4:00 P.M.*

*“Analysis of Low Impact Development using Testbeds: Bioretention and Sand  
Filter Media and Liner Requirements”*

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### **Abstract**

Urban development negatively affects both surface and groundwater quality. The change of natural land cover to impervious surfaces such as roads, parking lots, rooftops and sidewalks decreases water quality by concentrating pollutants, such as sediments, nutrients, bacteria, heavy metals, temperature, among others. Low Impact Development, such as bioretention systems and sand filter basins, are decentralized strategies that control runoff by restoring infiltration and retaining water for longer durations on the site. In this talk, the performance of current stormwater treatment practices are discussed, with emphasis on different types of bioretention and sand filter basin media and liner requirements. Results from column experiments and a real scale LID Test Bed, located at the University of Texas at San Antonio main campus.





Originally from Porto Alegre, Brazil, Marcio earned his bachelor's degree in Civil Engineering from the University of Brasilia and a master's in Water Resources and Environmental Engineering from the Institute of Hydraulics Research at the Federal University of Rio Grande do Sul, Brazil. He then moved to the United States to pursue a Ph.D. in Civil Engineering and Water Resources from Texas A&M University. In January 2013, he joined the Department of Civil and Environmental Engineering at UTSA. His long term goal is to develop and sustain a career as a teacher-scholar focused on methodologies that identify effective water management strategies that enhance the sustainability of the built and natural environments, and transform this knowledge into action by training the next generation of water planners and managers with state-of-the-art knowledge and tools.

