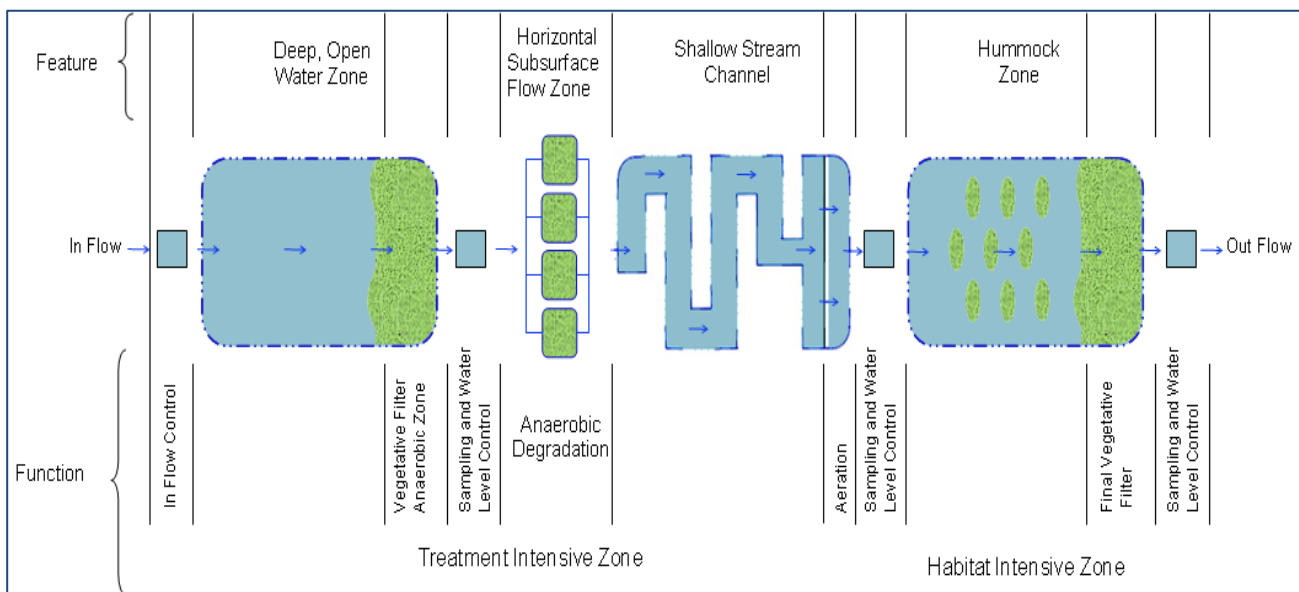


Brazos Research Wetland

An Innovative Constructed Wetland Design for Attenuating Endocrine Disrupting Compounds in Reclaimed Wastewater

Research Objectives & Approach

- ❖ A 7-acre wetland is being constructed in Waco, Texas to study and evaluate how endocrine disrupting compounds can be reduced or removed from treated wastewater effluent.
- ❖ The design of the wetland is new and innovative, incorporating a unique combination of surface and subsurface treatment zones, as well as passive aeration units including cascades and turbulent stream channels.
- ❖ Designs, engineering, and monitoring plans were prepared and reviewed by an expert, multi-disciplinary team of Federal, state, local, academic, and private entities.
- ❖ Construction will begin in January 2015, and initial findings are expected in 2018 after a three-year monitoring period.
- ❖ The total project cost is \$2.5 million and is being cost-shared through various cash and in-kind contributions from project partners.



Schematic illustration of features and functions of the Brazos River Demonstration Wetland in Waco, TX.



Need and Opportunity

- ❖ Water reuse projects provide communities with a new source of clean water while promoting water and energy efficiency and environmental stewardship.
- ❖ The reuse of reclaimed wastewater through "planned" indirect potable reuse projects that utilize environmental buffers is becoming more common throughout the U.S.
- ❖ Organic contaminants are often present in municipal wastewater treatment plant effluent that is discharged to surface water bodies that might be recycled for drinking water purposes as part of an indirect reuse project.
- ❖ Public concern often exists over whether these contaminants, termed endocrine disrupting compounds (EDCs), may adversely affect ecosystems and human health.
- ❖ Texas' Water Reuse Research Agenda, along with the National Research Council, ranked understanding the role of contaminant attenuation in environmental buffers as a high research priority for advancing indirect potable reuse projects.
- ❖ EDCs are difficult to remove from effluent without expensive and complex treatment methods, but environmental buffers such as constructed wetlands appear to be a promising option and offer a variety of economic, environmental, and social benefits over traditional or advanced engineered systems.

Economic, Environmental, and Social Benefits

- Optimized wetland design and specifications
- Increased use of wetlands as an environmental buffer for reuse projects
- Changes in water policy and supply portfolios
- Cost-effective water supply reliability and drought resilience
- Education and outreach programs for inner city youth and others
- Economic growth and environmental sustainability
- Enhanced environmental workforce and stewardship

Local Contact Information

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