

NORTH AUGUSTA'S BRICK POND PARK

Wetlands for Stormwater Treatment

What is Stormwater Pollution?

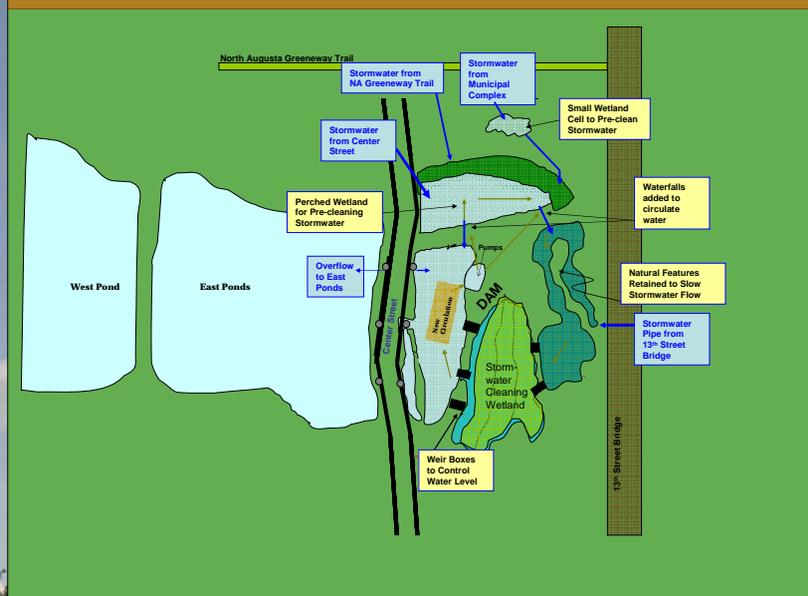
Rainwater is not polluted normally. But when it hits the ground and begins to run across lawns, streets, parking lots, or by leaking trash cans, it carries with it anything it encounters light enough to float away. This includes trash, bacteria, and toxic chemicals like oil, gas, grease, fertilizer, and pesticides. The rainwater is then considered "polluted stormwater". This stormwater flows through pipes, ditches, ponds, and roadways directly into the streams of North Augusta or the Savannah River. Since all North Augusta streams empty into the Savannah River, every bit of the stormwater pollution from our city can travel all the way to the Atlantic Ocean where the river ends. Therefore, it is important to try and remove the pollution before the water enters Savannah River.



Why Restore these Wetlands?

- ❖ **THE EXISTING WETLANDS DID NOT FUNCTION WELL DUE TO EXCESSIVE NUTRIENTS, TRASH, AND DEBRIS.**
The abundance of nutrients, shallow water, and lack of water movement within the wetlands resulted in stagnant conditions for decades. The conditions also created an environment for an overabundance of algae which can remove oxygen from water. Prior to restoration, this wetland environment was dangerous for aquatic life. Only air breathing species could live under those conditions.
- ❖ **IMPROVED CONDITIONS IN THE CONSTRUCTED WETLANDS WILL REMOVE CONTAMINANTS FROM STORMWATER**
Wetland systems are especially efficient at removing contaminants such as biological oxygen demand (BOD), suspended solids, nitrogen, phosphorus, hydrocarbons, and even metals. The addition of water movement to the system with waterfalls, aeration in the east ponds, and increased vegetation, will allow treatment of stormwater pollution. Once the water passes through the treatment system, the cleaner water will provide a sustainable environment for aquatic species.
- ❖ **WETLANDS PROVIDE HABITAT FOR ANIMALS AND PLANTS**
Preserving sensitive environments is critical to wildlife, especially in a growing community. The citizens of North Augusta have made this a priority. As the wetlands mature, grasses and wetland plants will become established, trees will mature, and the system will become fully self-sustaining with the continued help of North Augusta citizens.
- ❖ **WETLANDS CAN BE USED TO STUDY HABITATS**
Using wetlands as stormwater treatment for our community will provide future generations a place to study and learn about wildlife and natural treatment processes. Local schools and universities will conduct studies to learn more about wetland processes. These wetlands will continuously clean stormwater and provide a safe habitat for wildlife and visitors.
- ❖ **WETLANDS ARE A WONDERFUL PLACE TO VISIT AND VIEW WILDLIFE**
Brick Pond Park will provide a safe place for our natural wildlife to thrive and for citizens to visit. The park and its footpaths are connected to the North Augusta Greenway Trail with access points throughout city of North Augusta. Citizens, visitors, and students interested in learning about and viewing a unique environment will enjoy this park for generations.

Brick Pond Parks Stormwater Treatment System



What are Wetlands and How do They Work?

Wetlands are transitional areas between water and land that may be referred to as swamps, marshes, bays or bogs. Different communities of plants, soils and water conditions determine the type of wetland.

Occurring in low lying areas, wetlands receive runoff water and overflow from communities, rivers and streams during rain events. In response to these conditions, various wetland biological mechanisms or processes have evolved over time to clean or "treat" water that enters the wetland. Plants, bacteria, soils and other features within the wetlands trap sediments and can break down a wide range of pollutants into safe elemental compounds.

Water moves slowly through wetlands allowing sediments to settle. The slow flows also act to prolong contact times between water and surfaces within the wetland. The living and non-living materials within a wetland form a complex mass. This mass along with the occurrence of gas and water interchanges, promotes a varied community of microorganisms in order to break down or transform a wide variety of substances.

Dense growths of vascular plants adapted to saturated conditions often thrive in wetlands and contribute to its treatment capacity. The vegetation creates micro-environments and provides the microbial community attachment sites. Plants die back in the fall and accumulate as litter. This creates additional material and exchange sites and provides a source of carbon, nitrogen and phosphorus to fuel microbial processes.

Constructed wetlands are designed to do the same as natural wetlands. Long term studies have shown that man-made constructed wetlands can work as natural wetlands if they are built correctly. Since the **Brick Pond Park** wetlands were functioning poorly as natural wetlands, cleaning and re-constructing them has improved their ability to treat stormwater and sustain wildlife.

Treatment Pond Drained, Cleaned and Reshaped



Wetland Plants Added



Vegetation Planted August 2007



Pond Refilled



Waterfalls Create Flow and Oxygen



The project was funded by the City of North Augusta, The North Augusta Riverfront Development Corporation and through the assistance of a Savannah-Santee-Peetdee Resource Protection Fund grant from the National Fish and Wildlife Foundation.

