

PRIMARY USE: Pollutant removal from surface flow.

ADDITIONAL USES: Habitat enhancement.

CONSTRUCTED WETLAND

What is it? Constructed wetlands are designed to remove contaminants from stormwater and wastewater. As with other natural biological treatment technologies, wetland treatment systems are capable of providing additional benefits. This practice applies where runoff is contaminated by oils, pesticides, nutrients, fertilizers, or animal wastes to levels unacceptable for downstream receiving waters. The reuse, or reclamation, of wastewater using constructed wetland technology also provides an opportunity to create or restore valuable wetland habitat for wildlife and environmental enhancement.

Purpose

Constructed wetlands have successfully provided water treatment functions at lower cost than conventional wastewater treatment options.



**Constructed Wetland
Perspective View**

Limitations

Space limitations. Zoning ordinances may prevent wastewater treatment. Must be careful to avoid overloading. Wetland subsoil should be relatively impermeable, otherwise a lining may be needed. Not particularly good for phosphorus removal. Must have a safe disposal area for vegetation that has been removed. Maintenance is required.

Materials

Wetland plants, or native vegetation and soils.

Installation

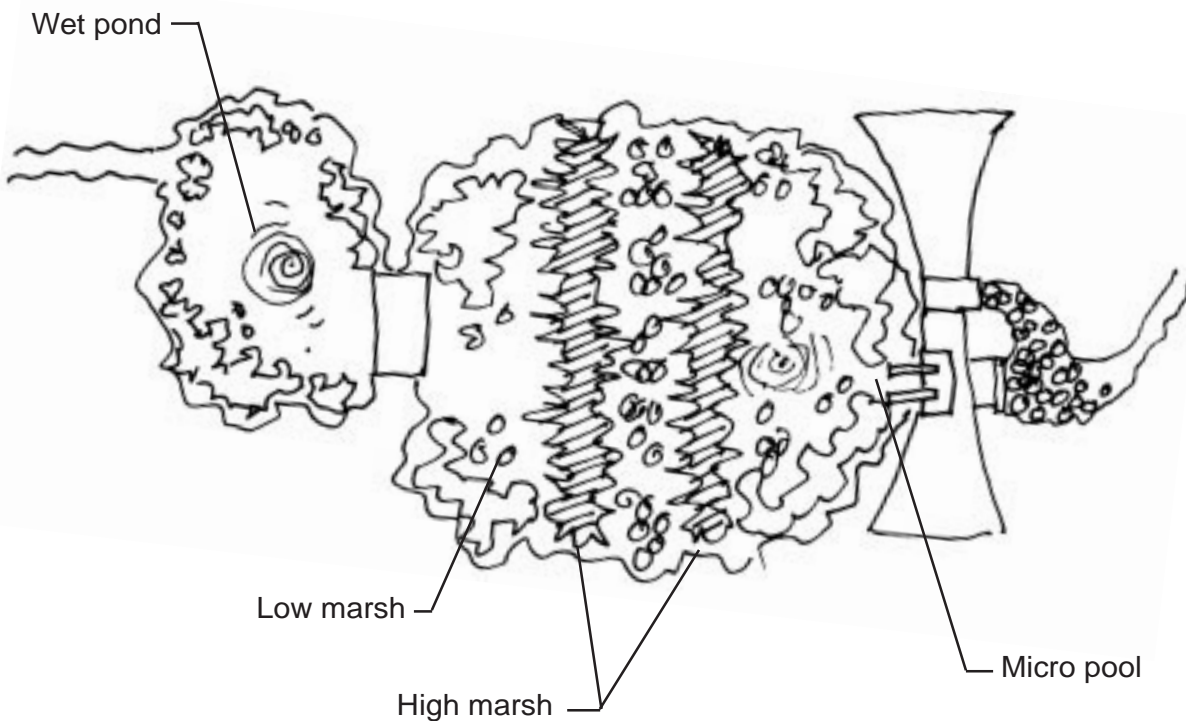
Assume minimum 5 day retention time required for biological treatment. Wetland plants planted on 2-3 ft (0.6-0.9 m) centers. Maximum depth approximately 1 ft (0.3 m) for emergent plants. Aspect (length/width) ratio should be at least 4:1.

Source: Center for Sustainable Design, Landscape Architecture/Biological Engineering Departments; Mississippi State University.

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Additional Considerations and Drawings:

Pretreatment for flows with high solid/sediment content is advisable. Use of high and low marsh areas can make flow more uniform, but increase expense and complexity of construction. Deeper areas in the wetland (e.g., marsh-pond-marsh) help to promote nitrogen removal.



**Constructed Wetland
Plan View**