

General Description

A manufactured wetland is similar to public domain stormwater wetlands. In a manufactured wetland, gravel substrate and subsurface flow of the stormwater through the root systems force the vegetation to remove nutrients and dissolved pollutants from the stormwater.

Only one company currently manufactures a pre-engineered wetland: It consists of a standard module, about 9.5 feet in diameter and 4 feet in height. The module is constructed of recycled polyethylene. The number of units is varied to meet the design volume of the site.

Inspection/Maintenance Considerations

To maximize wetland removal of pollutants, the vegetation must be harvested frequently. Harvesting is particularly important with respect to the removal of phosphorus and metals, less so nitrogen. Harvesting should occur by mid-summer before the plants begin to transfer phosphorus from the aboveground foliage to subsurface roots, or begin to lose metals that desorb during plant die off. While not stated by the manufacturer, it is also desirable that every few years the entire plant mass including roots be harvested. This is because the belowground biomass constitutes a significant reservoir (possibly half) of the nutrients and metals that are removed from the stormwater by plants (Minton, 2002).

If pretreatment is provided then maintenance consideration must be given to the build up of debris and floatables.

| Inspection Activities | Suggested Frequency |
|---|---------------------|
| <ul style="list-style-type: none"> Inspect during the dry season to determine if irrigation of plants is necessary. | As needed |
| <ul style="list-style-type: none"> Inspect to verify that invasive species of wetland plants is not occurring. | Annual |
| Maintenance Activities | Suggested Frequency |
| <ul style="list-style-type: none"> Clean the center well. | As needed |
| <ul style="list-style-type: none"> Remove vegetation near end of each growth season to capture the nutrients and pollutants removed by the wetland vegetation. | Annual |

Maintenance Concerns, Objectives, and Goals

- Vegetation/Landscape Maintenance
- Endangered Species Habitat Creation
- Pollutant Removal Efficiency
- Clogging of the Outlet
- Invasive/exotic Plant Species
- Vector Control

Targeted Constituents

- ✓ Sediment
- ✓ Nutrients
- ✓ Trash
- ✓ Metals
- ✓ Bacteria
- ✓ Oil and Grease
- ✓ Organics
- ✓ Oxygen Demanding

Removal Effectiveness

See New Development and Redevelopment BMP Handbook-Section 5.

