

# ***THIS IS AN EXAMPLE:***

## **Post Construction Long Term Maintenance Plan for**

Project Name: Columbia Site Plan

### **System Description**

The site consists of a series of stormwater conveyances both open channel and piped, detention / retention and water quality ponds.

- 1) There is one stormwater detention pond sized to detain through the 100 year peak event. The orifice is designed to contain the first flush, 1 inch, for 72 hour.
- 2) 150 ft Engineered swales.
- 3) 200 ft of 18 inch pipe and 10 storm inlets.
- 4) StormCeptor Water Quality Unit at north east corner of the lot at out let of detention pond.
- 5) 105 feet of water quality buffer 50 ft wide is next to Rutherford Creek. It will remain undisturbed. No trees will be disturbed in this area except under extenuating circumstances: diseased or dying trees in accordance with applicable city of Columbia regulations. See the City of Columbia Aquatic Buffer Ordinance for further information.

Upon completion of the site construction, 'Record Drawings' in a version not less than AutoCAD 2006 LT (NAD83, NAVD88) of the stormwater controls will be provided to the City of Columbia for verification.

A copy of the **INSPECTION AND MAINTENANCE AGREEMENT OF PRIVATE STORMWATER MANAGEMENT FACILITIES** that has been completed, notarized and recorded in the Land Records of the County of Maury, Tennessee will be kept on site with this document.

### **Maintenance Procedures:**

#### **1) Stormwater Detention Ponds**

- The outlet structure shall be checked regularly for clogging and shall be cleaned and repaired as necessary---monthly after it is first built then a regular sequence should be established or at least quarterly or after a large rain event.
- Check banks and bottom surface of basin for erosion and correct as necessary.
- Check at least quarterly and after each extreme storm event, the facility should be cleaned of accumulated debris. The banks of surface ponds should be checked and areas of erosion repaired. Remove nuisance wetland species and take appropriate measures to control mosquitoes.
- This maintenance typically includes sediment, floatable, and debris removal from inlets, outlets and skimmers
- Pond vegetation needs to be trimmed or harvested as appropriate, grassy areas frequently mowed. Grass should be mowed so that it does not get over 6 inches.
- Remove sediment when accumulation reached 6 inches, or if re-suspension is observed or probable.
- Some sediment may contain contaminants which the Tennessee Department of Environment and Conservation (TDEC) requires special disposal procedure. If there is any uncertainty about what the sediment contains or it is known to contain contaminants, then TDEC should be consulted and their disposal recommendations followed. The TDEC Division of Water Pollution Control should be contacted at (931) 380-3371. Generally, special attention or sampling should be given to sediment accumulated in facilities serving industrial, manufacturing or heavy commercial sites, fueling centers or automotive maintenance areas, large parking areas, or other areas where pollutants (other than clean soil) are suspected to accumulate and be conveyed by storm runoff.
- Some sediment collected may be innocuous (free of pollutants) and can be used as fill material, cover or land spreading. It is important that this material not be placed in any way that will promote or allow re-suspension in storm runoff.

**2) Swale Maintenance:**

- The facility should be checked annually for signs of erosion, vegetation loss, and channelization of the flow.
- The grass should be mowed when it reaches a height of 8 inches (20.3 cm) and no shorter than 3 inches (7.6 cm). Allowing the grass to grow taller may cause it to thin and become less effective. The clippings should be bagged and removed.
- Mow grass covered biofilters regularly to promote growth and pollutant uptake.
- Remove cuttings and dispose of properly (preferably through composting).
- Remove sediment by hand with a flat-bottomed shovel during dry periods.
- Remove only the amount of sediment necessary to restore hydraulic capacity, leaving as much of the vegetation in place as possible. Reseed or plug any damaged turf or vegetation.
- Eventually, sufficient sediment will be trapped that the entire biofilter will need to be removed with sediment and reconstructed to begin a new cycle of stormwater quality control.
- Roto-till or cultivate the surface of the sand/soil bed of dry swales if the swale does not draw down within 48.

**3) 200 ft of 18 inch pipe and 10 storm drains**

- These structures will be inspected and cleaned annually

**4) StormCeptor Water Quality Unit**

- The unit will be maintained per manufactured requirements (Requirements are attached)
- A two year maintenance agreement is attached
- It will be cleaned at least twice annually.

**5) Streamside Water quality Buffer:**

- 105 feet of streamside water quality buffer, 50 ft wide on both sides of Rutherford Creek, will remain undisturbed. No vegetation will be disturbed in this area except under extenuating circumstances: diseased or dying trees in accordance with applicable city of Columbia regulations. See the City of Columbia Aquatic Buffer Ordinance for further information. Streamside water quality buffer will be set aside in conservation easement and recorded in the Maury County Register of Deeds office.

**6) Typical Maintenance Activities for Bioretention Areas (Source: EPA, 1999)**

**Activity Schedule**

<input type="checkbox"/> Pruning and weeding to maintain appearance. <input type="checkbox"/> Mulch replacement when erosion is evident. <input type="checkbox"/> Remove trash and debris.	As needed
<input type="checkbox"/> Inspect inflow points for clogging (off-line systems). Remove any sediment. <input type="checkbox"/> Inspect filter strip/grass channel for erosion or gullyng. Re-seed or sod as necessary. <input type="checkbox"/> Trees and shrubs should be inspected to evaluate their health and remove any dead or severely diseased vegetation.	Semi-annually
<input type="checkbox"/> The planting soils should be tested for pH to establish acidic levels. If the pH is below 5.2, limestone should be applied. If the pH is above 7.0 to 8.0, then iron sulfate plus sulfur can be added to reduce the pH.	Annually
<input type="checkbox"/> Replace mulch over the entire area. <input type="checkbox"/> Replace pea gravel diaphragm if warranted.	2 to 3 years

### Additional Maintenance Considerations and Requirements

The surface of the ponding area may become clogged with fine sediment over time. A Core aeration maintenance agreement may be required and executed as a condition of plan approval.

### 7) Typical Maintenance Activities for Infiltration Trenches

Activity	Schedule
<ul style="list-style-type: none"><li>• Ensure that contributing area, facility, and inlets are clear of debris.</li><li>• Ensure that the contributing area is stabilized.</li><li>• Remove sediment and oil/grease from pretreatment devices, as well as overflow structures.</li><li>• Grass filter strips should be mowed as necessary. Remove grass clippings.</li></ul>	Monthly
<ul style="list-style-type: none"><li>• Check observation wells following 3 days of dry weather. Failure to percolate within this time period indicates clogging.</li><li>• Inspect pretreatment devices and diversion structures for sediment build-up and structural damage.</li><li>• Remove trees that start to grow in the vicinity of the trench.</li></ul>	Semi-annual Inspection
<ul style="list-style-type: none"><li>• Replace pea gravel/topsoil and top surface filter fabric (when clogged).</li></ul>	As needed
<ul style="list-style-type: none"><li>• Perform total rehabilitation of the trench to maintain design storage capacity.</li><li>• Excavate trench walls to expose clean soil.</li></ul>	Upon Failure

*Example of a*  
**Stormwater Management Inspection/Maintenance Form**  
*To be kept on site*

PROJECT NAME: Columbia Site Plan  
 PROJECT LOCATION: 707 North Main Street  
 OWNER/LEGAL ENTITY: Jim Fuller  
 TELEPHONE: (931) 560-1530  
 E-MAIL: jfuller@columbiatn.com



DATE	ITEM INSPECTED	INSPECTOR (Please Print)	OBSERVATION & REMARKS
08/04/2008	Storm Sewer System	Chuck Hughes	No Sediment Accumulation
08/04/2008	Catch Basin Sumps	Chuck Hughes	No Sediment Accumulation
08/04/2008	Swales	Chuck Hughes	Grass was healthy and an acceptable height. No sediment has accumulated No debris or erosion was present
08/04/2008	Outflow Control Structures	Chuck Hughes	No Sediment accumulated at structure Debris was removed from V-Notched Weir No erosion was evident
08/04/2008	Infiltration Basin	Chuck Hughes	No erosion or sediment Accumulation Debris was removed
08/04/2008	Storm Detention Area	Chuck Hughes	There is no erosion sediment accumulation Grass is browning and shall be watered weekly
08/04/2008	Street Cleaning	Chuck Hughes	Streets have no sediment accumulation
08/04/2008	Catch Basin Inlet Casting	Chuck Hughes	Debris was removed
02/04/2009	Street Cleaning	Chuck Hughes	Streets have no sediment accumulation
08/04/2009	Storm Sewer System	Sid Bream	Sediment was removed
08/04/2009	Catch Basin Sumps	Sid Bream	Sediment was removed
08/04/2009	Outflow Control Structures	Sid Bream	Sediment was removed
08/04/2009	Infiltration Basin	Sid Bream	Sediment was removed