



Inspection & Maintenance Guidelines for Typical Stormwater BMPs (Controls)

Typical Inspection & Maintenance Activities for DETENTION or RETENTION PONDS:

- All inlet and outlet structures shall be checked regularly (at least quarterly or after a large rain event) for clogging and destabilization and shall be cleaned and repaired as necessary. Any destabilization area shall be repaired by using Turf Reinforced Matting (TRMs), rip-rap (with geotextiles), etc.
- Check banks and bottom surface of basin (at least quarterly or after a large rain event) for erosion and correct as necessary. The facility should be free of accumulated debris. Any bank erosion shall be repaired immediately by using erosion blankets, Turf Reinforced Matting (TRMs), rip-rap, etc.
- Remove vegetation overgrowth and remove any nuisance vegetation. 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 or 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 (423) 634.5743. 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 stormwater 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.
- Any removed vegetation shall be disposed of properly and not allowed to be disposed of at the property stormwater areas.
- Check for possible mosquitoes breeding opportunities (blockage, clogging, poor drainage, trash, etc.) and take proper corrective actions.

Typical Inspection & Maintenance Activities for SWALES and BIO-SWALES (containing bio-filter):

- The facility should be checked (at least quarterly or after a large rain event) 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.
- Keep all level spreaders even (level) and free of debris.
- Mow grass covered bio-filters regularly to promote growth and pollutant uptake.
- Remove cuttings and dispose of properly (preferably through composting). Do not dispose of in any stormwater structure.
- 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 bio-filter will need to be removed and reconstructed.
- Roto-till or cultivate the surface of the sand/soil bed of dry swales if the swale does not draw down within 48 hours.

Typical Inspection & Maintenance Activities for PROPRIETARY DEVICES:

- Proprietary devices shall be maintained per manufactured requirements. **MAKE SURE YOU OBTAIN YOUR MANUFACTURED UNIT MAINTENANCE GUIDELINES.** Some manufacturers also provide inspection and maintenance forms that could also be used along with the City of Chattanooga Inspection and Maintenance Form (Form I/M).
- Units should be inspected quarterly and cleaned at least annually.

Typical Inspection & Maintenance Activities for BIO-RETENTION Areas

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 accumulated 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.	Quarterly
<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

Typical Inspection & Maintenance Activities for STREAM BUFFERS:

- No vegetation will be disturbed in buffer area except under extenuating circumstances such as diseased or dying trees.
- To do any 'work' or maintenance activities to a stream buffer zone, an approved Buffer Management Plan should be submitted to the City. This must cover any reduction of width, buffer crossing, clearing and pruning of any vegetation. Clearing of dead limbs from the buffer zone or the creek can be done without notification. Buffer boundaries shall be well defined and visible with signage.
- In general, a minimum width of at least 60 feet on both sides is recommended to provide adequate stream protection.
- The three-zone buffer system, consisting of Filter Strips, Managed Forest, and Unmanaged Natural Area is an effective technique for establishing a buffer. The zones are distinguished by function, width, vegetative target, and allowable uses.

Typical Inspection & Maintenance Activities for CONSTRUCTED WETLANDS:

- Inspect wetlands at least quarterly and after each extreme storm event.
- Remove trash and foreign debris. Remove nuisance vegetation and animals if present.
- Repair or replace areas of erosion or damage.
- Keep pre-treatment devices and inflows free of debris. Remove trash and sediment from grates monthly or after major storms.
- Forebays (pretreatment devices or areas) should be inspected at least quarterly and cleaned when necessary.
- May need to remove excessive growth periodically.
- May need to mow aquatic vegetation during dry periods on occasion.
- Maintain surrounding areas:
 - Keep grass mowed and free of debris.
 - Prevent erosion.
 - Fertilize grass only lightly. Excess fertilizer is a pollutant.
 - Inspect at least quarterly as well as after every major rainfall event.
 - Remove debris that threatens to clog standpipes or emergency spillways

- If a pool of water can be maintained within the wetland, mosquito fish (*Gambusia*) can be introduced to control these and other pests.
- Purple martin houses can be installed near a constructed wetland in attempt to control the mosquitoes.
- Bat houses and purple martin houses will attract bats and purple martins that feed on mosquitoes.
- Biological mosquito larvacides, available from hardware stores or home improvement stores (such as Lowe's or Home Depot) can be used in pretreatment devices or forebays.

Typical Inspection & Maintenance Activities for PERMABLE PAVEMENT:

Activity	Schedule
Do not seal or repave with non-porous materials.	N/A
Ensure that paving area is clean of debris. Ensure that paving dewaterers between storms. Ensure that the area is clean of sediments.	Monthly
Mow upland and adjacent areas, and seed bare areas. Vacuum sweep frequently to keep the surface free of sediment.	As needed (typically three to four times per year).
Inspect the surface for deterioration.	Annual

Typical Inspection & Maintenance Activities for LEVEL SPREADERS:

- Inspect level spreaders at least quarterly and after rainfall events.
- Look for excessive sediment, scouring or undercutting, and for concentrated flows downhill from level spreader. Note any problems and correct promptly.
- Repair or replace level spreader if it is damaged or inadequate to prevent erosion.

Typical Inspection & Maintenance Activities for GREEN ROOFS:

- Immediately after construction, green roofs need to be monitored regularly to ensure the vegetation thrives.
- During the first season, green roofs may need to be watered periodically if there is not sufficient precipitation.
- After the first season, extensive green roofs may only need to be inspected quarterly and lightly fertilized approximately once per year.
- The roofs may need occasional weeding and may require some watering during exceptionally dry periods.
- If leaks should occur in the roof, they are relatively easy to detect and fix. Intensive green roofs need to be maintained as any other landscaped area.

Typical Inspection & Maintenance Activities for FLOATBLE SKIMMERS:

- Floatable skimmers should be inspected at least quarterly.
- Maintenance is very important for the proper function of a floatable skimmer.
- After runoff events that transport large amounts of floating debris and trash, the skimmer can become clogged with a mat of trapped material. Debris must be removed promptly to maintain the capacity of the structure for future storms. A vacuum device could be used to remove floatables and sediments.