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## Stormwater Operation and Maintenance Plan

### STORMWATER WETLAND

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Regular inspection and maintenance are necessary to preserve long-term functionality of Stormwater Control Measures “SCMs” per the original design intent. This Plan outlines the Town of Chapel Hill requirements for regular inspection and maintenance of Stormwater Wetland SCMs. The Owner as defined in the Agreement shall keep a copy of this Stormwater Operations and Maintenance Plan, the SCM Inspection and Maintenance Log, and a copy of the approved As-Built Plans in a known set location and made available to the Town of Chapel Hill upon request.

Annual inspections shall be performed by a qualified licensed Professional Engineer or Landscape Architect. Routine maintenance and inspection shall be performed by a qualified professional with NCSU Stormwater Inspection and Maintenance Certification or similar certification.

The qualified professional shall maintain a **SCM Inspection and Maintenance Log** and make available to the Town of Chapel Hill upon request. All inspections shall be recorded in the log according to the frequency in the Inspection and Maintenance Table (Table 1 below) and within 24 hours after storm events that exceed 1.0 inch of rainfall. Any deficit SCM elements noted during inspection shall be recorded in the log and immediately corrected, repaired, or replaced. All routine and corrective/emergency maintenance activities shall be recorded in the log. The log template can be found at the Town of Chapel Hill Stormwater Control Measures [website](#).

An **Annual Inspection and Maintenance Report** shall be submitted to the Town of Chapel Hill Stormwater Department. The report shall detail the status of the SCM and maintenance performed as outlined in the [SCM Inspection Report Guidelines](#). A copy of the annual report shall be submitted to the Town of Chapel Hill Stormwater Management Division beginning one year after issuance of the Certificate of Occupancy.

#### **REQUIRED INSPECTION AND MAINTENANCE TASKS FOR STORMWATER WETLAND**

*Important: Please note that this inspection checklist is not an exhaustive list of maintenance tasks for any particular SCM. It is the responsibility of the professional inspecting the facility to perform comprehensive maintenance for the SCM to be operational.*

**Table 1: Inspection and Maintenance Provisions for Stormwater Wetland**

FREQUENCY OF INSPECTIONS	MAINTENANCE ACTIVITIES
Upon completion of construction	<ul style="list-style-type: none"> <li>• Watering is needed twice a week until the plants become established (commonly 6-8 weeks), and then as needed during first growing season (April-October), depending on rainfall.</li> <li>• Remove and replace dead plants.</li> <li>• Remove any tree stakes or wires six months after planting.</li> </ul>
Once a quarter	<ul style="list-style-type: none"> <li>• Mow grass surface areas to a height of approximately six to eight inches. Note, a 10-foot unmowed vegetated buffer around wetland perimeter may be established to filter pollutants from adjacent properties and prevent erosion.</li> <li>• Check inlet, collection system and outlet device for clogging. Remove accumulated grit, leaves, debris and any other obstructions and dispose off-site.</li> <li>• Remove trash accumulating around perimeter of wetland, at the outflow structure, or floating in the pools.</li> <li>• Inspect for ponding and bare or eroding areas and make adjustments as necessary.</li> </ul>
Twice during the growing season	<ul style="list-style-type: none"> <li>• Pull out weeds, dead, diseased, or invasives plants preferably by hand.</li> <li>• Conduct an inspection of mosquito activity and treat as necessary.</li> </ul>
Annually	<ul style="list-style-type: none"> <li>• Have the embankment inspected by a dam safety expert.</li> <li>• Prune trees and shrubs to best professional practice. Thin vegetation so that sunlight can penetrate the bioretention surface.</li> </ul>
Once every 2-3 years	<ul style="list-style-type: none"> <li>• Reinforce planting in select areas of the wetland that fail to fill in or survive. An extensive wetland wide replanting is required if 50% minimum coverage is not achieved in the planted wetland zones after the second growing season.</li> <li>• Remove woody species on or near embankment area and maintenance access. A dam safety specialist should be consulted to remove any trees.</li> </ul>
As needed (Typical Problems)	<p><b>Vegetation</b></p> <ul style="list-style-type: none"> <li>• If algal growth covers over 50% of the deep pool and shallow water areas, consult a professional to remove and control the algal growth.</li> <li>• If cattails, phragmites, or other invasive plants exceed 50% of the wetland area, remove invasives by physical removal or wiping them with an aquatic herbicide. Consult the Town of Chapel Hill before any aquatic herbicide is used. Site specific approval is required. Extended periods of dewatering may be a possible treatment approach for reducing invasives.</li> <li>• If the stormwater wetland suffers from dead or diseased plants or overgrown with invasive species, evaluate the source of the problem: soils, hydrology, species, and/or type of disease to determine the cause of the plant failure.               <ul style="list-style-type: none"> <li>○ Remediate the problem by selecting new species and/or implementing an eradication plan for invasives.</li> <li>○ Ensure appropriate plant maintenance is occurring.</li> </ul> </li> </ul>

- A one-time fertilizer application to establish ground cover is permissible if a soil test indicates it is necessary. No portion of the dry detention system shall be fertilized after the initial fertilization that is required to establish the vegetation.
- Remediate bare soils or erosive gullies.
  - In perimeter areas, regrade the soil to remove the gully, plant a ground cover and water until it is established. If soil test shows that the pH has dropped, dolomitic lime shall be applied as recommended.
  - Within the pretreatment area, provide erosion control devices such as reinforced turf matting or riprap to avoid future problems with erosion.

**Structural Integrity**

- Replace or repair any cracked, separated or damaged inlet pipes, overflow structure, outfalls, impoundment walls or other structural elements.
- If dam embankment or emergency spillway needs maintenance, consult with a professional.

**Functionality**

- If sediment has accumulated up in the forebay, shallow land areas, or deep pool reducing their depth to 75% of the original design depth, remove the sediment and dispose of it in a location where it will not cause impacts to the SCM or a stream. Search for the source of the sediment in the drainage area and remedy the problem if possible.
- If dredging is required and the site has clay soils, agricultural lime should be spread over the entire water surface immediately following completion of dredging operations to facilitate the settling of excess clay particles.
- If the shallow land remains flooded more than 5 days after a storm event, inspect the outlet device for obstructions and unclog immediately.
- If evidence of a muskrat or beaver activity is observed, contact a professional to remove muskrat or beaver.

For additional information or if damage has occurred at the outlet which effects the receiving water, contact the Town at Chapel Hill Stormwater Management at 919-969-7246 (RAIN).