Operation & Maintenance of Stormwater Management Facilities

CITY OF TALLAHASSEE
GROWTH MANAGEMENT

Operation & Maintenance Plan

The Operation and Maintenance Plan outlines the specific operating procedures including routine maintenance consisting of mowing, cleaning of any structures or components of the conveyance system in which the runoff is carried and/or treated, and all other activities required to ensure that the facility performs as it was designed. It also includes estimates for the annual maintenance and any long-term maintenance that may be required, such as the replacement of a sand filter.

Responsibility

Although the Growth Management Department will assist in every way possible to determine the cause(s) of a stormwater management system deficiency, it remains the responsibility of the owner, and owner's designated agent, to inspect and maintain the facility and to immediately undertake any corrective measures necessary to ensure the facility continues to function properly. Constant attention to, and maintenance of, these facilities reduces the number of deficiencies determined by City inspectors.

Renewals & Fees

The Operating Permit is valid for three years from the date of its issuance, or subsequent renewal, and fees allow for the annual inspection of the facility by the Growth Management Department. Growth Management will notify the property owner, or designated agent of record, several months in advance of the renewal deadline. Changes in ownership, or designated agent, should be reported to Growth Management as soon as possible to ensure timely notification of an impending renewal.

Annual Inspections

Facility inspections are performed, at least once annually, by the Growth Management Department. If deficiencies in maintenance or function are noted, the department will inform you in writing, of the required maintenance to restore proper function.

Overgrowth in the Facility

Vegetation within the facility must be kept at a height no greater than six (6) inches. The predominance of woody-stemmed weeds, such as Common Reed (*phragmites australis*), serves only to kill the grass and ground cover, increasing the risk of erosion within the facility. All clippings from shrubbery, trees, and cut grass must be removed to prevent the development of algae within the facility.

Overgrowth of the Sand Filter

The filters must be kept clear of weeds at all times. Weeds must be pulled **by hand** to ensure the root masses are also removed and re-growth is prevented. Roots of weeds can damage the filter system and contribute to the filter not functioning. Clean-outs, or standpipes are connected to the filter pipe underneath the sand and gravel to aide in cleaning the filter pipe of sediments and any blockages that may occur. These pipes need to be water tight at their connection point and have caps that allow inspectors to open them to verify flow and proper function.

Cattails in More Than 20% of the Facility

If more than 20% of the bottom surface of the facility is covered by cattails, they must be removed. Cattails can be beneficial by absorbing solutes that cannot be taken back into the ground or filtered, however the root systems can prevent water from being absorbed back into the ground and/or the filter system. Future re-growth must be controlled by the application of approved herbicides until cattails no longer grow in abundance.

Invasive Species

Several species of vegetation that are considered invasive noxious plants grow in this region. Some of these invasive plants can alter native plant communities by displacing the native species. The invasive plants can quickly spread and create problems in stormwater facilities, such as blockages of filter systems and pipes. Some common invasive species found in facilities include:

- *Water-hyacinth*
- *Bamboo*
- *Kudzu*
- *Chinese Tallow Trees (aka "popcorn trees)*
- *Mimosa Trees*

A full listing of invasive species can be found at the Florida Exotic Pest Plant Council website www.fleppc.org/list/list.htm

Are Aquatic Herbicides Safe to Use?

In their concentrated form, all herbicides should be handled with great care. However, once diluted according to label instructions for application into an aquatic environment, the U.S. Environmental Protection Agency, the Florida Department of Agriculture and Consumer Services and the Florida Department of Environmental Protection consider herbicides labeled for aquatic use safe. Aquatic herbicides meet the most stringent safety standards under federal and state regulations; and, these herbicides permitted for use in water, are not restricted-use herbicides, which means they are far less toxic than herbicides used in most agricultural operations or even those pesticides used in homes.(1) For a list of herbicides, please refer to the link below:

www.plants.ifas.ufl.edu/guide/sup7herb.html#agherbtab
Plant Management in Florida Waters - A collaboration of the Center for Aquatic and Invasive Plants, University of Florida.

Flumes, Inlets, and other Conveyances

Drainage for the ponds can be seen in different forms:

Concrete flumes or **swales** directing flow into the pond, with and without blocks (dissipater blocks) to slow the runoff before reaching the pond bottom. These blocks can become full of sediment and vegetative clippings or debris and should be inspected regularly to make sure they do not become obstructed. Concrete flumes and swales can have undermining, or washing away of sediment from the underside of the conveyance, occur. This can result in cracking or breaking of the conveyance and ultimately result in blockages. The property owner or facility operator should inspect all conveyances regularly to make sure there is no undermining or breakage.

Grassed swales can be found directing storm water around buildings and towards the pond. Inlets are found in parking areas, depressed green spaces, and curbs, and are usually underground conveyances directing the runoff into the pond.

The pipes and/or flumes that discharge into the facilities are called **influents** or **influent pipes**. These pipes must stay free from blockages of accumulated sediment buildup at the discharge point or opening into the pond, and free from vegetation growing in front of them. Blockages of these pipes can result in system problems such as back-flow (water flowing back towards the inlets causing the inlets to overflow) and not getting the water to the pond for treatment, whether it is a filter system or a retention pond.

Retention Ponds & Detention Ponds

A **retention pond**, is a Structural Practice best management practice that is used to manage storm-water runoff to prevent flooding and downstream erosion, and improve water quality in an adjacent river, stream, lake or bay.(2) A retention pond treats storm-water runoff through percolation (the absorption of run-off back into the ground); and evaporation. (www.eoearth.org/article/evaportanspiration). Typically a retention pond does not have any control structures, or outfall structures, unless it is to help discharge run-off beyond the required storage volume for which it was designed. A retention pond should recover, or dry-out, within 90 hours after a rain event.

A **detention pond** can be either wet or dry with a filtration system. A filtration system, or sand filter, slowly treats the runoff by "filtering" the water through sand and gravel before reaching a pipe in which it is directed to a structure that then takes the filtered water off site so that it can be reabsorbed into the groundwater. Filtration systems are designed by engineers with a safety factor so that the pond can recover within 36 hours ,but not longer than 72 hours, after a rain event. If the pond has not recovered after 72 hours, there is a clear indication of a problem with the filter system (i.e. a blockage or problems with the sand medium requiring that the system be replaced).

Wet ponds are frequently used for water quality improvement, groundwater recharge, flood protection, aesthetic improvement or any combination of these.(3) For water quality treatment, these ponds are the better, but also the larger, of the two types of ponds. Sometimes they act as a replacement for the natural absorption of a forest or other natural process that was lost when an area was developed. As such, these structures are designed to blend into neighborhoods and are viewed as an amenity.

Confined Space & Underground Vaults

An underground vault is a storage area, enclosed with a "roof" (parking lot, deck, etc), that holds runoff until it is reabsorbed into the ground. According to OSHA, confined spaces include, but are not limited to, underground vaults, tanks, storage bins, manholes, pits, silos, process vessels, and pipelines. Due to the nature and emission of certain gases, such as methane, a vault can present safety issues for those who enter. Because of these safety issues, a Certified Confined Space Inspector is required to conduct the inspections for these types of facilities.

According to the City of Tallahassee Land Development Code, Chapter 5, Section 86(m)(2)(a), the property owner (not the agent) shall agree to and sign the "Underground Stormwater Facility Inspection and Reporting Requirements Acknowledgement Sheet" during the permitting of the facility. The acknowledgement sheet shall be submitted and recorded in the public records as documentation of the inspection and reporting requirements. If the facility was constructed prior to the current Land Development Code and the agreement was not signed, the agreement and its requirements can be found on the City of Tallahassee Growth Management Department website, under Applications & Forms www.talgov.com/growth.

Extension Requests

On any compliance letter sent to a facility owner, or their designated agent or operator, a deadline, or end date, is given to indicate when the work should be finished. Generally, this date tends to be thirty to forty-five days from date of the certified letter;; however, it is understandable that certain limitations can hinder the completion of the maintenance items, whether it is weather, getting bids on the work, or any unforeseen problem. For this reason, an extension request can be sent to the inspector asking for additional time to complete the needed items. Requests for extensions to any deadline will be granted only if;

- the request is received no later than seven days prior to the deadline date;
- the request is made in writing;
- the request provides a list of work completed to date and the reason for delay; and
- the request provides a date for completion of the remainder of the work.

Failure to maintain the stormwater management facility and appurtenant drainage structures is a violation of Section 5-58 (c) of the Land Development Code. If the work is not completed by the prescribed deadline, or by any extension granted thereto, a Notice of Violation will be issued against the property.

Notice of Violations

A Notice of Violation is a written or oral notice issued to the property owner, or facility operator, when the remedial items in a compliance letter have not been satisfied after the inspector has made several attempts, by certified mail, to achieve compliance. The Notice of Violation specifies that the property owner or their agent make immediate actions to bring the ponds into compliance in reference to maintenance issues. A Notice of Violation can also occur when the property owner does not submit the required renewal fee for the Operating Permit after several attempts by certified mail. At this point, the Operating Permit fees are generally doubled.

A deadline is given in the Notice of Violation that states the length of time that the property owner has to complete the required activities of maintenance, or to submit the required fees for the Operating Permit. If all requirements of the Notice of Violation are not met by the specified deadline, the case may be referred to the Environmental Code Enforcement Board for resolution with the recommendation that fines up to **$250.00 per day** be levied against the property for every day, beyond that date, that the facility remain out of compliance.

Sources:

(1) http://plants.ifas.ufl.edu/guide/whymanag.html

(2) & (3) http://en.wikipedia.org/wiki/Retention_basin

435 N. Macomb St
Tallahassee, FL 32301
Phone: 850-891-7100
www.talgov.com