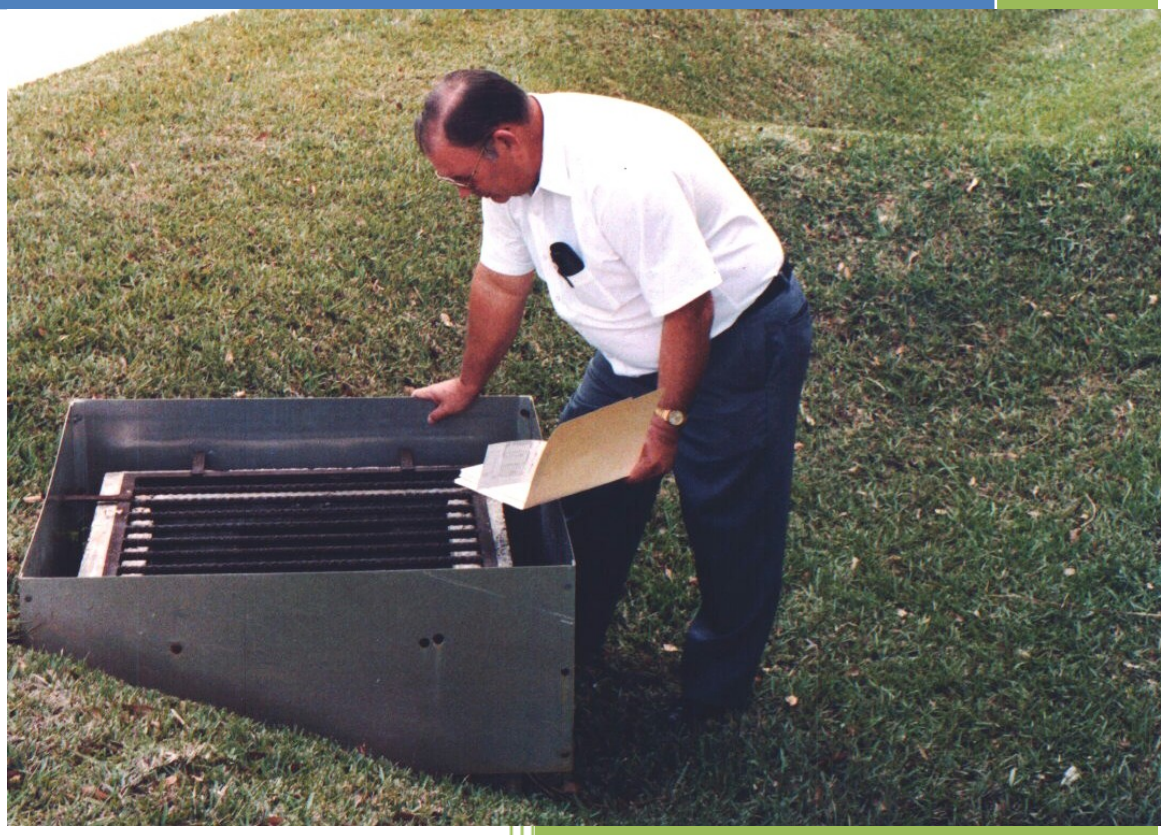
Stormwater Utility Code Pond Compliance



STREETS AND STORMWATER DIVISION
PUBLIC WORKS DEPARTMENT
CITY OF ORLANDO
1030 SOUTH WOODS AVENUE
ORLANDO, FLORIDA 32805
PHONE (407) 246-2370
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www.cityoforlando.net/stormwater

YOUR STORMWATER POND SYSTEM

Did you know your stormwater system is a tool for treating and managing rainfall runoff? Your stormwater system is responsible for controlling flooding as well as treating pollutants that come from roads, parking lots, and yards before it impacts our lakes and rivers. Stormwater is the state's leading source of water pollution today.

Your pond is a stormwater Best Management Practice (BMP) designed to reduce the impacts of pollutants and increased stormwater volume on local streams caused by development. They are an essential part of Orlando's efforts to improve the quality of our streams, rivers, and lakes; however, ponds will fail prematurely if not properly maintained. Once a pond fails, it will no longer perform its intended function and it is often very expensive to replace.

Whether you are an individual property owner, a homeowners' association representative, or a residential/commercial property manager, this manual helps to answer frequently asked questions about ponds and pond maintenance activities. Routine maintenance will prolong the life of your pond, improve its appearance, prevent flooding and property damage, and enhance local streams and lakes.

Please note: This manual is not a set of rules and regulations on how to design or build ponds.

HOW DOES YOUR STORMWATER SYSTEM WORK?

The two types of stormwater ponds are retention and detention ponds. Retention ponds are typically dry and are designed to store a specific amount of runoff (usually the amount generated from the first inch of rain). Dry retention ponds are designed to return to a dry state, through percolation and evaporation, in 72 hours. Detention ponds are designed to fill up with runoff and then allow the water to pass through the pond at a slow, controlled rate through an outfall structure to a receiving waterbody. Wet retention and detention ponds should return to the designed levels after normal rain events through evaporation or infiltration. Where space is not available for stormwater ponds, underground exfiltration systems are sometimes used. Exfiltration systems store water in perforated pipes which allow the water to percolate through surrounding soils.

RESPONSIBILITY FOR STORMWATER POND SYSTEM

It is usually the responsibility of the property owner or homeowner association to clean and maintain treatment ponds on the property. Maintenance should include removing nuisance vegetation and excess sediments, repairing eroded areas, collecting any trash or waste, and cleaning inflow/outflow structures to the pond. These elements should all be included in a maintenance plan, which can be referenced frequently, and modified as necessary. The party or parties responsible for stormwater pond management should also keep a set of design/build plans on-site for reference, and compliance inspectors.

LOCAL ORDINANCE

The City of Orlando has enacted codes to ensure your stormwater pond is functioning properly. Chapter 31.05 of the *City of Orlando Stormwater Utility Code* states: "The property owner shall be responsible for stormwater drainage facilities located on private property. The owner shall clean and maintain the facility or channel, as required, to ensure efficient and proper operation of the facility…The [Stormwater] Utility…shall provide for inspection of private facilities to ascertain that the stormwater facilities are functioning as designed and approved."

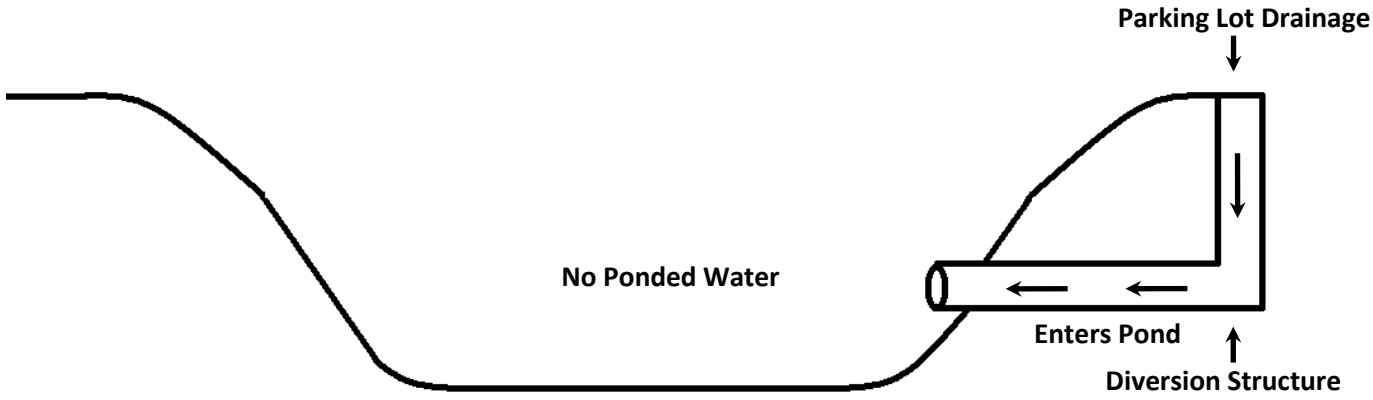
FOR YOUR INFORMATION

The City of Orlando Stormwater Utility actively enforces codes related to stormwater systems and ponds. **Stormwater Utility prefers to work with the property owners proactively to prevent code noncompliance issues, rather than by imposing fines through code enforcement actions.** Please contact the Stormwater Utility at (407) 246-2370, Jonathan Stephens at (407) 246-2101, or Jack Kettner at (407) 246-3509 for questions about this publication, and to verify that your stormwater system is in compliance.

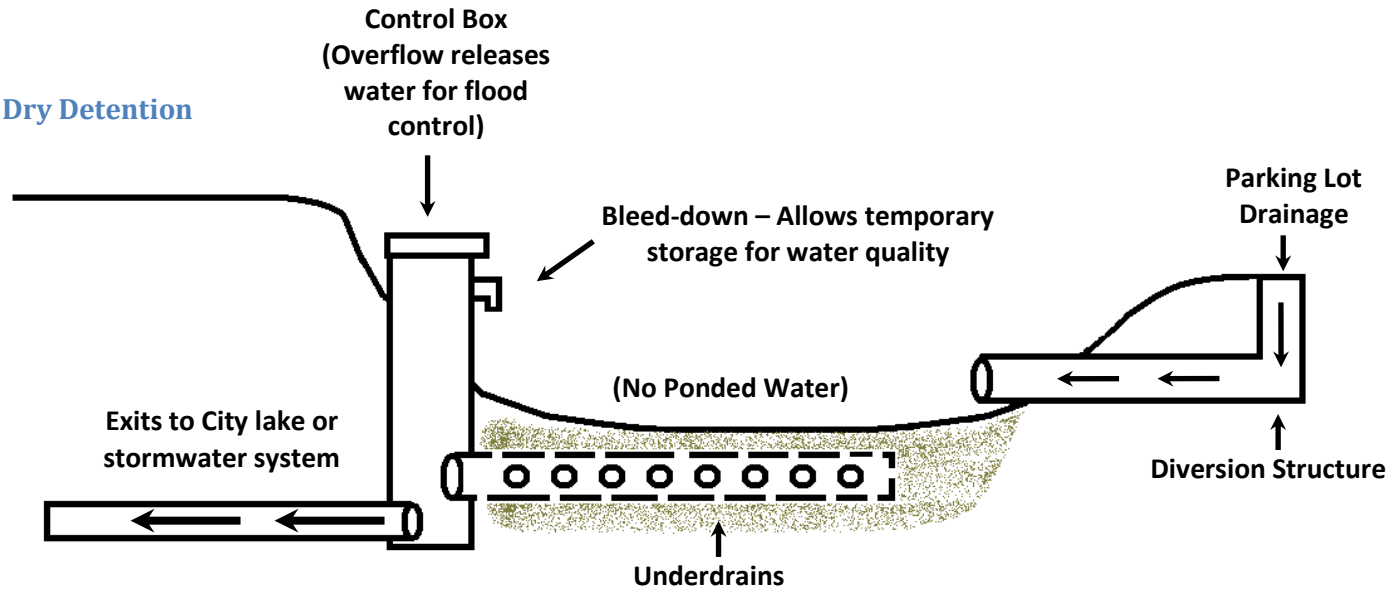
EXAMPLES OF TYPICAL STORMWATER SYSTEMS

DRY PONDS

Dry Retention



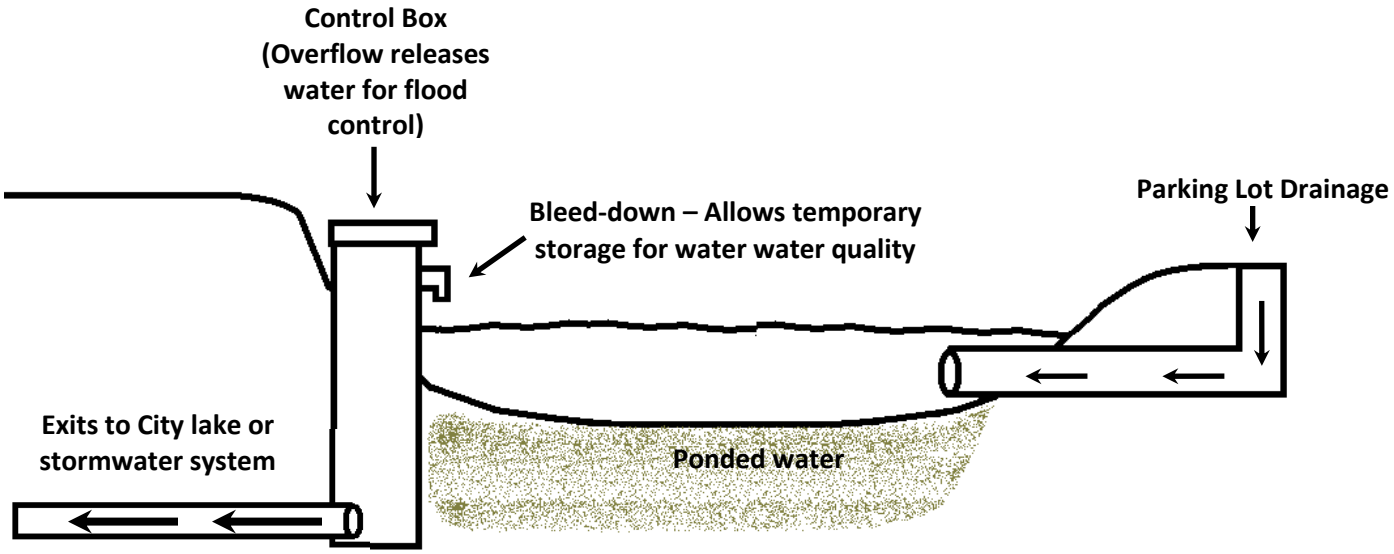
Dry Detention



EXAMPLES OF TYPICAL STORMWATER SYSTEMS

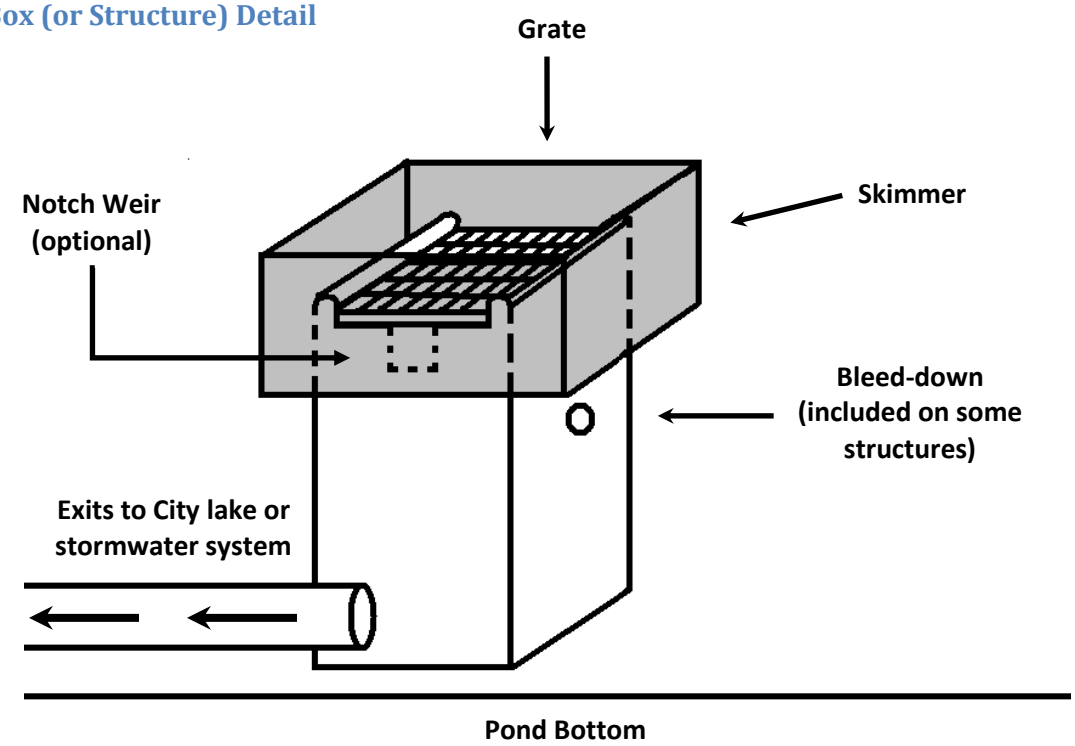
WET POND

Wet Detention



POND STRUCTURE

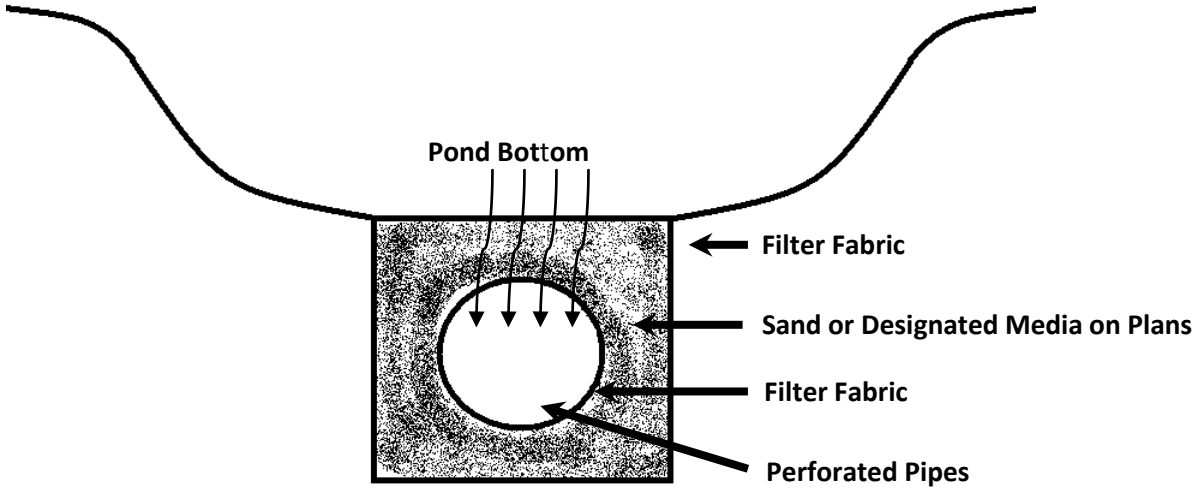
Control Box (or Structure) Detail



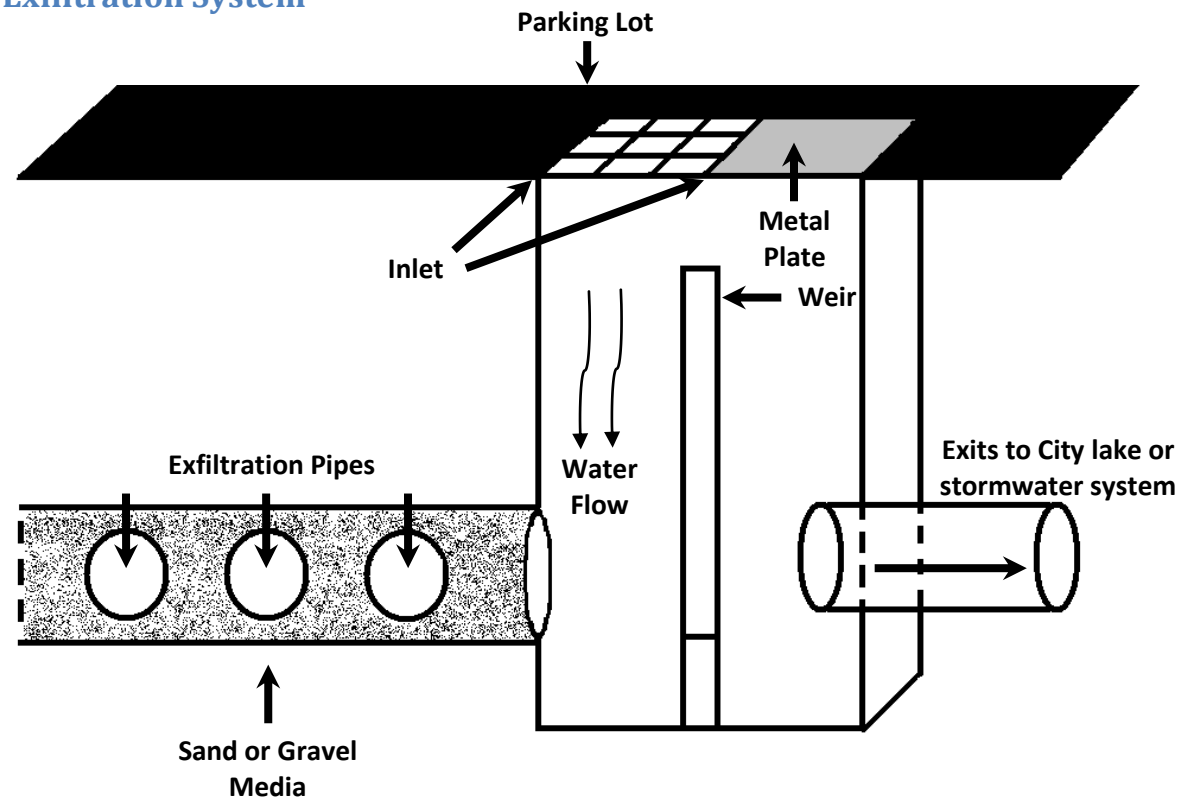
EXAMPLES OF TYPICAL STORMWATER SYSTEMS

ADDITIONAL TREATMENT

Underdrain



Exfiltration System



MAINTENANCE TASKS: PROPERTY MANAGEMENT

1. **Develop Maintenance Plan** according to the type of stormwater system on-site.

2. **Do not place yard waste including leaves, grass clippings, or brush into the stormwater pond(s)**, and prevent all yard waste from entering storm drains located in the streets or parking lots. These materials release excess nutrients as they decompose and will lead to more algae growth in the pond.

3. **Do not dump <u>any</u> materials (i.e., paint, solvents, concrete, oil, gasoline, etc.) in the storm sewer system.** Improperly disposed of materials will pollute the basin. Remember, Only Rain Down the **Drain!**

4. **If you must use fertilizers, only use low-phosphorus, slow-release varieties.** Keep fertilizers on the lawn and not on paved areas. Stormwater contains high nutrient levels, so fertilizer use within dry ponds is not necessary.

5. **Provide educational updates to the property owners or residents.** Discuss your maintenance plan at regular meetings, provide information in newsletters, and host annual clean-up days.

PROPERLY DESIGNED, BUILT, AND MAINTAINED POND

Carefully selected vegetation allows proper function of pond and provides aesthetic quality.

Regular maintenance mowing and trimming of vegetation ensures compliance.

MINIMUM SUGGESTED POND MAINTENANCE

Task	Inspection Frequency	Notes
FOR DRY PONDS:		
Mow and properly remove grass/vegetation	When growth exceeds 6 inches	Prevent establishment of woody stemmed plants (i.e., shrubs and trees)
FOR WET PONDS:		
Inspect for and remove nuisance or undesirable vegetation	Monthly	Prevent establishment of woody stemmed plants (i.e., shrubs and trees)
Inspect for trash or other debris that may be blocking the inlet or outlet pipes or emergency spillway	Monthly and after large rain events	
Inspect side slopes, berms and spillways for erosion	Monthly and after large rain events	Repair slopes and unstable sod immediately following an erosion event
Inspect basin for signs of chemicals (solvents, gas, diesel, paint, oil). Locate source and remove/dispose of properly.	Monthly	
Inspect for and remove excess sediment accumulation in the pond	Every 6 months	
Inspect and clean the storm sewer system and catch basins upstream from the pond, if needed	Every 6 months	Clean when structures or pipes are ¼ full
If applicable, clean out underdrains	Following periods of prolonged wetness in pond	Cleaning and root removal methods will vary with pipe material

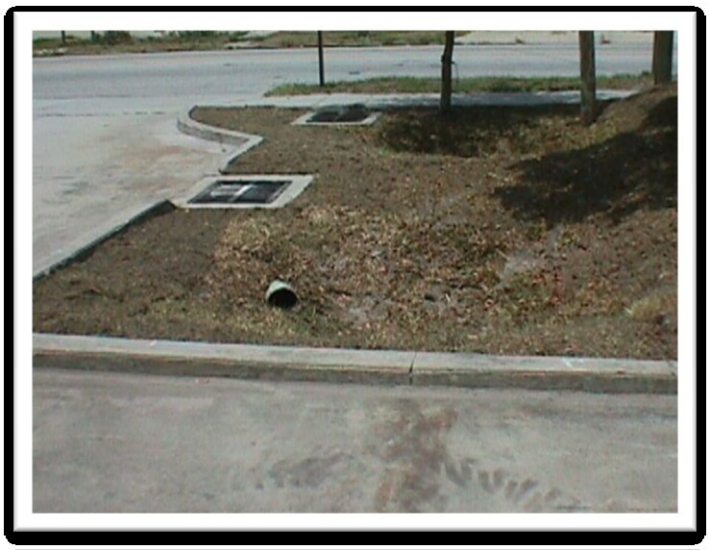
The above tasks are only suggestions.

The City pond inspector will perform a more thorough inspection that includes additional components not listed above.

STORMWATER POND INSPECTION PHOTOGRAPHS

Non-compliance (Before)

Compliance (After)



GLOSSARY/DEFINITION OF TERMS

Bleed down: An orifice that releases water to a storm line or waterbody at a controlled rate. Typically, it is a designed round opening or PVC elbow pipe.

Control box: A structure that controls stormwater flow and elevation when leaving a lake or a detention pond.

Diversion box: A stormwater structure containing a weir wall that is designed to divert water to a specific part of the stormwater system for flood control or pollution treatment.

Detention Pond: A stormwater system that stores stormwater for a limited of time and releases it to another system at a controlled rate.

Drainage area: The natural or constructed water area to or through which stormwater is to flow.

Drop inlet box: Structure in which stormwater overflow drops vertically and is connected to a storm line.

Energy dissipater: Any device used to reduce the energy of flowing water into a stormwater system.

Exfiltration system: An underground stormwater drainage system that allows stormwater to percolate or absorb into the surrounding soils.

Filter fabric: A cloth material designed to filter water before it enters an exfiltration system or underdrain pipe.

Filter media: The specific aggregate or sand materials used in underdrains and exfiltration for filtering particles out of the water.

Flume: A device constructed to convey water down steep banks lined with erosion resistant materials.

Headwall: A wall built around the stormline at the entrance to a pond or lake.

Nuisance vegetation: Any plant growth that might restrict water flow or decrease stormwater capacity if not properly maintained. Common examples include, but are not limited to, Cattails, Primrose Willow, and Water Hyacinths. Plants including Bulrush and Pickerel Weed, although typically considered beneficial, can become a nuisance if unmaintained.

Outfall: The point where drainage discharges from a stormwater pipe, ditch, or other conveyance to a receiving body of water.

Retention Pond: A pond that stores stormwater runoff and allows it to percolate through the ground and evaporate into the air. It does not release the water to another stormwater system.

Riprap: Broken rock of boulders placed in front of a storm line or on the bank of a stormwater system to prevent erosion from occurring.

Skimmer: A structural device used to prevent oil, debris, and floating trash from entering a control box or waterbody. Typically composed of aluminum or fiberglass.

Stormwater: Runoff from a rainstorm or storm event that contains and carries pollutants to a lake or stream.

Swale: A shallow sloped area that directs stormwater to or from a stormwater pond.

Turbid water: Water that is stirred up and contains suspended particles, sediments, and other pollutants.

Underdrain pipe (sock pipe): A perforated pipe surrounded with a filter fabric material.

Weir: A designed wall that allows stormwater to flow over from one section of the stormwater system to the other section at a designed elevation and controlled rate.

NOTES

CONTACTS

Pond Design Plan Retrieval

Prior to contacting an organization for a copy of the plans, be sure to have:

- **Owner Name**
- **Address**
- **Parcel ID**
- **Year Built**

This information can be obtained from tax records or the ***Orange County Property Appraiser's Office***: **(407) 836-5044**, Address: 200 S. Orange Avenue, Suite 1700, Orlando, FL 32801 or visit http://www.ocpafl.org

For a copy of pond plans, please contact:

- ***City of Orlando Streets & Stormwater Division*** **(407) 246-2370**
  Address: 1030 S. Woods Ave., Orlando, FL 32805
- Jonathan Stephens (407) 246-2101, jonathan.stephens@cityoforlando.net
- Jack Kettner (407) 246-3509, jack.kettner@cityoforlando.net

If plans are not available, they may be located at the following locations:

- ***City Records and Archive Management Services*****: (407) 246-2148**
  Address: Orlando City Hall (Second Floor), 400 S. Orange Ave., P.O. Box 4990, Orlando, FL 32802-4990
  or visit http://www.cityoforlando.net/cityclerk/recordsandarchivespage.htm

- ***Orange County Public Works Stormwater Management Division*** (For sites previously located in Orange County jurisdiction): **(407) 836-7990**
  Address: Orange County Public Works Complex (First Floor), 4200 S John Young Pkwy., Orlando, FL 32839
  or visit http://www.orangecountyfl.net/cms/DEPT/pw/stormwater/default.htm

- ***St. Johns River Water Management District*** **(SJRWMD)**: **(386) 329-4500** or **(800) 451-7106**
  Address: Orlando Service Center, 975 Keller Rd., Altamonte Springs, FL 32714
  or visit http://sjr.state.fl.us

- ***South Florida Water Management District*** **(SFWMD)**: **(561) 686-8800** or **(800) 432-2045**
  Address: Orlando Service Center, 7335 Lake Ellenor Dr., Orlando, FL 32809
  or visit http://www.sfwmd.gov

- **Architect** (Contact the Builder or Engineer of Record who designed your site)

CITY OF ORLANDO

For Questions:
(407) 246-2370