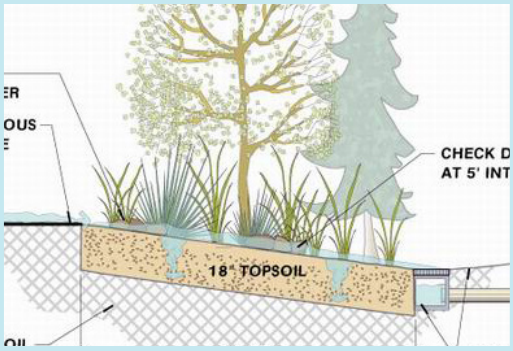
Making a Retention Pond an Asset

Making a retention pond a visual and hydrologic asset is a type of Low Impact Development (LID) stormwater management Best Management Practice (BMP)

BMPs can be utilized in residential and commercial settings to reduce the need for stormwater transportation and treatment, reduce flooding and improve water quality!

Retention ponds capture stormwater, holding it long enough for pollutants to percolate to the bottom, reducing nonpoint source pollution, and then releases cleaner runoff to local streams, wetlands, and lakes at a much slower rate than the initial rainfall runoff

A residential stormwater retention pond
(www.planningwithpower.org)



A cross-section of a filter strip
(www.land2plan.com/stormwater)

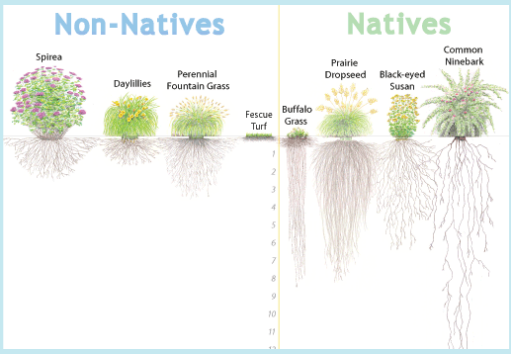
Inspecting a vegetated retention pond
(www.dep.state.fl.us)

Creating a retention pond that mimics a natural pond's structure and vegetation (a buffer of native plants instead of rip rap), vastly improves this feature's stormwater management capabilities

Why native plants? Because they have deep root systems, helping stormwater to get into the ground (deep-rooted trees may even be used), slowing the flow, and helping to filter out/remove pollutants

Utilizing these ideas creates a cleaner, more beautiful pond - an asset to any community!

A commercial vegetated retention pond
(www.architectmagazine.com)



The importance of native plants
(Mid-America Regional Council)

A vegetated retention pond
(www.solarbee.com/stormwater)

How to Make a Retention Pond an Asset:

Commercial and residential retention ponds can be an eyesore. Their purpose is to store and slowly release stormwater to reduce the damage done by high runoff volumes from developed areas. Unfortunately, traditional methods lead these "ponds" to suffer from erosion, be unsightly and worst of all - present safety hazards. There is also little to no water quality benefits gained through traditional methods.

By changing the thinking of retention ponds **FROM EYESORES TO ASSETS**, these areas can become important BMPs in stormwater management and water quality efforts. This is accomplished through the use of a **BUFFER**, or filter strip of plants and trees around the retention pond (see figure below). This vegetation will not only reduce or eliminate any erosion the pond is suffering, but will also slow the flow of runoff into the pond, absorb some of this runoff and **MANY** of the pollutants (including nutrients and sediment), **AND** help beautify the area - making it an asset to the development and community!

Retention Pond Design **DO's**:

DO plant progressively more aquatic plants the closer you get to the water's edge

DO design the buffer to have a slope of between 2-6%

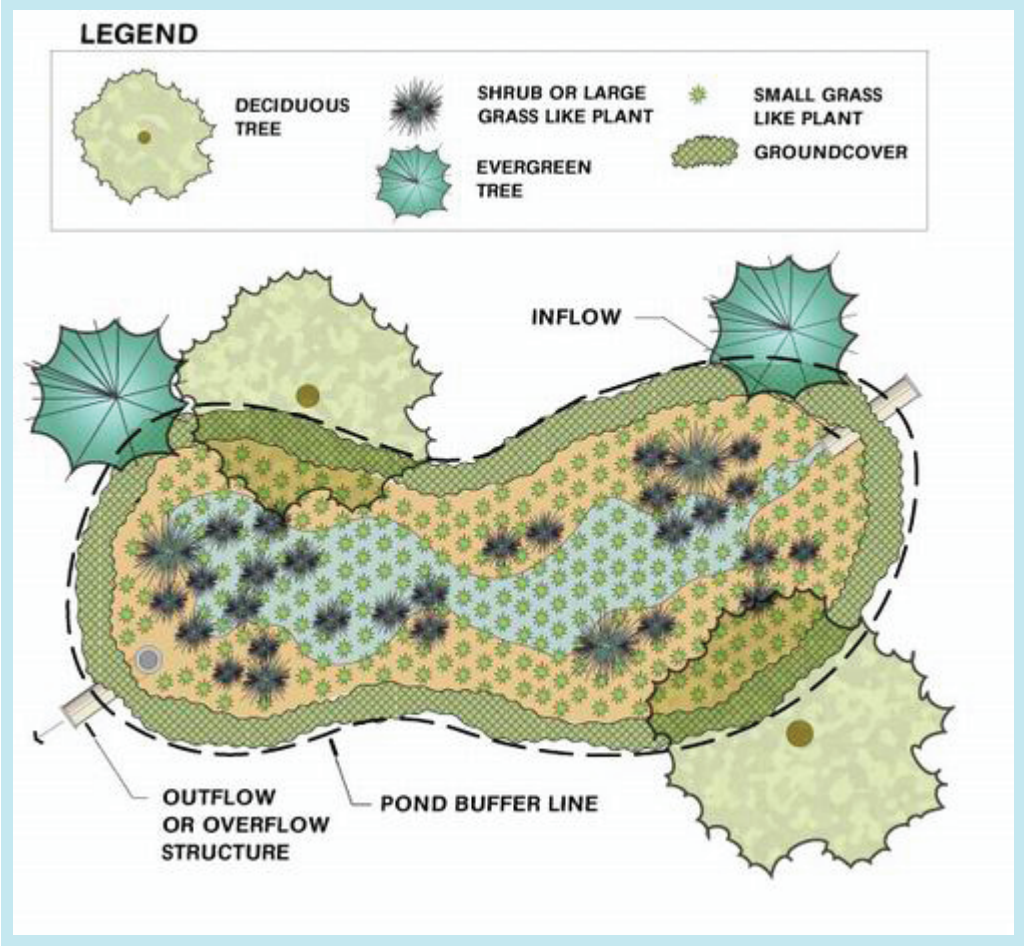
DO make the buffer a minimum of 25 ft, preferably closer to 150 ft from uphill to water's edge

DO aim for runoff speeds of less than 2 feet per second to maximize filtration

Retention Pond Design **DON'T's**:

DON'T underestimate the cost savings of buffers vs. "hard" measures such as rip rap

DON'T place this asset away from view - place it front and center!



Plan view of a vegetated retention pond (www.land2plan.com/stormwater)

Resources & References:

- Massachusetts Low Impact Development Toolkit (www.mapc.org/regional_planning/LID?grass_strip_filters)
- www.fhwa.dot.gov/environment/ultraurb/3fs11
- Center For Neighborhood Technology (www.cnt.org/about)

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