

Storm water management ponds: *Asset or Liability?*

Water quality within the retention pond is key to an aesthetically pleasing pond.

by AMY SNYDER, Ruppert Landscape Company

It's out there probably in the back of your property, where it is out of sight. Storm water management ponds are large basins engineered to retain sediment, water, trash, leaves and other storm runoff.

Although functional, they are generally unattractive and can be costly to maintain due to the need for occasional algae control and dredging or demucking. In the near future, these costs are likely to grow as increased regulations on water quality management and inspections of storm water management ponds continue to rise.

Fairly simple solutions exist for turning this liability into an asset, most of which require minimal planning and budget. Four strategies employed by Ruppert Landscape Company's environmental branch include:

Water quality enhancement

Maintaining the water quality within the retention pond is the key to having an environmentally conscious and aesthetically pleasing pond. Sediment, the particles that settle to the bottom after being washed into the pond, accumulates and decreases water quality. In time, dredging and de-mucking will be necessary to main-



This pond from a project in Tulsa, OK, is larger than the average storm water management pond. Adding vegetation can help to stabilize pond slopes. Community residents now regularly use the area around this pond for jogging, biking and bird watching. During the initial phase of a sediment forebay construction, biologs are installed which will serve as a filtering system for heavy storm run-off.

tain the specified water holding capacity.

Constructing a small basin area, known as a sediment forebay, near the in-flow area will help to reduce the water's velocity during heavy storms. This section is separated from the rest of the pond which allows suspended particles to settle out before reaching the pond, and it can be cleaned at a fraction of the cost.

Erosion control

Combating erosion is another important step in increasing a retention pond's value. When not monitored, erosion can

carve unsightly chunks out of feeder streams and alter the appearance of slopes and pond edges. The reasons for erosion are many, but two factors are large contributors:

Inadequate drainage capacity. Ongoing land development causes an increase in storm water run-off. Feeder streams (and many ponds) do not have the capacity to handle the excessive run-off without eroding themselves, which adds to the problem. Recent advances in bio-engineering techniques, such as biodegradable fiber

blankets and logs, can be employed to strengthen stream banks and maximize their ability to handle drainage without producing further erosion.

Lack of vegetation. Having little or no vegetation in and around stream and pond banks greatly increases erosion. This problem can be remedied by planting stream banks and slopes and seeding lawn areas. Geese, however, can often hamper these efforts by denuding these areas in their quest for food. By designating areas where employees and visitors can feed and enjoy the geese, and setting up deterrent devices to discourage them from nibbling on turf and plants, this situation can be effectively controlled.

Wetland plantings

Installing wetland vegetation and native grass mixes provides three main advantages:

Stabilization. Plant installation effectively stabilizes the slopes and prevents erosion and siltation of the pond. This

Other environmental restoration services offered by this arm of Ruppert Landscape Company include:

- ▶ reforestation
- ▶ wetland mitigation and management
- ▶ lake-edge stabilization
- ▶ stream realignment
- ▶ dune grass planting
- ▶ wildlife control

leads to decreased pond maintenance costs.

Beautification. Emergent aquatics, rushes, sedges and flowering shrubs can greatly enhance the attractiveness of this area. Plants can be installed on the pond floor, on shallow shelves created in the embankment, or on the pond's edge to help create a buffer zone.

Water quality improvement. Many

storm water structures are deluged with oil, chemicals and other pollutants from urban areas. Over time, increased nitrogen levels cause the pond to become choked by unsightly algae growth. Installing emergent plants can fight these imbalances by absorbing excess nitrogen and improving water quality, reducing the need for chemicals to control algae. This environmentally sound solution really treats the underlying problem and not just the symptom.

Wildlife introduction

Introducing wildlife varieties can be useful for the water quality in the pond as well as for the surrounding area. Within the pond, snails, catfish, white suckers and rosie red minnows help by either eating decaying plant material and algae, or feasting on mosquito larvae. By providing vacant houses, bats, blue birds and wood ducks can be enticed to move into the neighborhood in and around the pond. These species, along with many varieties of fish,

are an environmentally friendly way to control the insects that frequently call a pond home. These welcomed tenants can also provide bird watchers and nature enthusiasts with plenty of new viewing subjects!

Is your retention pond a visual and economic problem, or will it become one as government mandates on water quality become more stringent? These up-front investments should pay for themselves while making your storm water management pond the property's prize, not its problem. □

Amy Snyder is a public relations specialist for Ruppert Landscape Company, a nationally-ranked full-service commercial contractor.



Once the area is excavated, additional plantings of pickerel weed, lizard tail and cattail increase its filtration capabilities. The sediment forebay allows suspended particles to settle out before reaching the rest of the pond. By using deterrent devices such as this goose exclusion fencing, newly-planted vegetation can be protected until plants are well-established.