

## Maintenance of Structural Controls

Periodic long-term inspection and maintenance of the structural BMPs are essential to ensure that they function as designed. The superintendent and maintenance crews should be responsible for the inspection and maintenance of the BMPs for the golf course.

## Water Quality Basins

*Inspections:* Ponds should be inspected on a regular basis to ensure that the structure operates as designed. When possible, inspections should be conducted during wet weather to determine if the pond is meeting the targeted detention times and include checking:

- any evidence of subsidence, erosion, cracking or tree growth on the embankment
- condition of the emergency spillway
- accumulation of sediment around the riser
- adequacy of upstream/downstream channel erosion control measure
- erosion of the pond's bed and banks
- modifications to the pond or its contributing watershed that may influence pond performance

Inspections should be carried out with as-built pond plans in hand (Schueler 1987). Repairs should be made when the need for them is observed.

*Mowing.* The upper stage, side slopes, embankment, and emergency spillway of an extended detention dry pond must be mowed at least twice a year to discourage woody growth and control weeds. The use of water-tolerant, hardy, and slow-growing native or introduced grasses is recommended.

*Debris and Litter Removal.* Debris and litter should be removed during regular mowing operations.

*Erosion Control.* The pond side-slopes, emergency spillway and embankment may periodically suffer from slumping and erosion and require regrading and re-vegetation. However, slumping and erosion should not occur often if the soils are properly compacted during construction.

*Sediment Removal.* If properly designed, significant quantities of sediment can accumulate in the detention pond. This sediment should be removed periodically in order to preserve the available stormwater management capacity and to prevent the outlet or filter medium from becoming clogged. In addition, accumulated sediment may become unsightly. While more frequent sediment removal may be needed around outlet control structures, the lower stage of a detention pond should be cleaned manually typically every 5 to 10 years.

## Catch Basins

Catch basins should be cleaned out at least twice a year. Inlet structures usually are cleaned out with a vacuum pump. The resulting slurry of water, sediment, and other contaminants can be transported to a treatment plant or approved landfill for disposal. An alternative disposal method involves carefully siphoning

out each chamber without creating a slurry and allowing it to infiltrate over a nearby grass area. The remaining grit and sediment can be removed and trucked to a landfill for final disposal. Maintenance records and clean-out schedules should be kept as part of the maintenance process.

## Dry Wells

Dry wells rapidly take excess surface water and transport it to the subsoil that recharges groundwater. In areas where groundwater contamination is a problem, such as sandy areas of Long Island, the use of dry wells should be discouraged. Dry wells bypass the biofiltering capacity of the surface turf ecosystem and thus can inadvertently allow nutrients and pesticides to potentially contaminate groundwater. If they are used, the dry wells should be covered when fertilizers and pesticides are applied to prevent direct contamination of the dry wells. Applications of fertilizers and pesticide should also be avoided during wet periods when the dry wells are collecting water to prevent groundwater contamination.

*Preventive Maintenance.* Maintenance of infiltration facilities ensures their continued effectiveness. Preventive maintenance practices identify areas of erosion in the contributory drainage and stabilize those areas. For example, if suspended solids are not identified and removed, void areas in the stone reservoir of an infiltration trench may become clogged.

*Inspections.* Logs should be maintained for each BMP structure, recording the rate of de-watering after large storms and the depth of sediment buildup in the well for each observation. Once the performance characteristics of the structure have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicate that a more frequent schedule is required.