

III. Maintenance and Operation

The Department of Public Works and Environmental Services inspects and maintains dry ponds located within residential subdivisions, regional ponds, underground chambers, percolation trenches, and rain gardens. In addition, the Department of Public Works and Environmental Services performs inspections and enforces maintenance for privately maintained facilities including wet ponds, dry ponds, underground detention, sand filters, oil/grit separators, percolation trenches, inlet treatment devices, rooftop storage, and all commercial and/or industrial detention facilities. They also inspect 20 percent of the storm drainage network each year and starting in 2006 they will use Close Caption Television to inspect approximately five percent of the network per year.

Structural and Source Controls

County Maintained Stormwater Management Facilities

As of December 31, 2005, there were 1,178 stormwater management facilities maintained by the county. The current inventory includes 1041 on-site ponds, 41 regional ponds, 47 underground chambers, 33 percolation trenches, eight wet ponds, six bioretention areas, one manufactured best management practices, and one wetland. Last year the county inspected each the Department of Public Works and Environmental Services-maintained facility at least once, mowed 584 dam embankments, and performed 206 maintenance work orders to correct deficiencies. No state or federal permits were required to perform this work. The mowing of retention and detention facilities continued to be limited to the dam embankments and other critical areas. These reduced mowing limits allow vegetation in the pond floor to provide for enhanced nutrient and absorption rates. To ensure overall program effectiveness, a visual inspection of each facility was conducted during each maintenance activity in addition to the scheduled inspections. When critical deficiencies were identified by maintenance personnel, follow-up investigation was coordinated with engineering staff to ensure issues were resolved appropriately.

Privately Maintained Stormwater Management Facilities

In addition to the county-maintained facilities, there were 2251 privately maintained facilities in the private inventory as of December, 2005. The inventory included 283 wet ponds, 457 dry ponds, 120 sand filters, 55 manufactured best management practices, 334 percolation trenches, 559 roof top detention areas, 48 parking lot detention areas, 387 underground detention facilities, and eight bioretention areas. These facilities are routinely scheduled for inspection conducted by the Department of Public Works and Environmental Services staff with the goal of performing a thorough inspection of each facility at least once every five years within the permit period. A total of 457 facilities (20 percent of the facilities with maintenance agreements) were inspected in 2005. A detailed inspection report, with photographs and Geographic Information Systems maps, is provided to each owner upon completion of each inspection. The county continued ramping up its efforts to ensure privately maintained facilities are maintained and operated consistent with industry standards. Education of owner/operators of stormwater management facilities continues to be effective in achieving the desired level of service for these facilities.

State-Regulated Dam Facilities

The county maintained dams are inspected every year by Fairfax County Department of Public Works and Environmental Services staff and representatives from the Natural Resources Conservation Services and the Northern Virginia Soil and Water Conservation District. In addition, a biennial inspection is conducted by an engineering firm under contract with the county or by in-house professional engineering staff with expertise in dam design and construction. Additional facilities are being studied to determine what, if any, remedial measures need to be taken to ensure that they meet the state's criteria for dam safety. The purpose of this formal inspection is to identify any safety or operational items in need of

corrective action. Based on these formal inspections, as well as other less formal inspections, a work program to correct deficiencies and address maintenance items is established and implemented. Critical items such as the stability of the dam embankment and the functioning of the water control structures are addressed on a priority basis. Routine items such as mowing are accomplished on a scheduled basis, currently five times per year.

Stormsewer Infrastructure Management

A Stormsewer Infrastructure Management Plan and Schedule (*Appendix E*) was submitted on July 24, 2002, in accordance with the Municipal Separate Storm Sewer System permit and updated on January 13, 2006.

Storm Sewer Inventory Digitizing

The inventory of stormwater management and storm sewer facilities is documented and tracked through the use of the county's Geographic Information System. The county's 400-square-mile jurisdiction is currently divided into 440 tax map grids; each grid encompasses a surface area of approximately one square mile. The documented inventory of storm drainage infrastructure has been digitized in a Geographic Information Systems format for management and identification purposes. As of December 31, 2005, all tax map grids have been digitized.

Storm Sewer Maintenance Survey

In 2005, 215 miles of county-maintained storm sewers were field verified as to location and inspected for deficiencies. As a result of the information gathered, 261 work orders were written to correct deficiencies.

Roadways and Parking Lots

The county maintains the roadways and parking lots of public facilities such as government centers, libraries, fire stations, police stations, health centers, bus transit facilities, park and ride lots, commuter rail stations, and approximately 5 miles of road segments. In an effort to limit the discharge of sand and deicing materials into the county's streams, sand and chemical treatment are provided when dictated by safety. Magnesium chloride is used on sidewalk applications as necessary, as it is more environmentally acceptable than sodium chloride. In an effort to reduce the discharge of these materials into the county's streams, the County performed sweeping operations at a total of 64 sites.

Sanitary Sewer Infiltration Abatement Program

The Wastewater Collection Division, an agency of the Department of Public Works and Environmental Services, manages the county's infiltration abatement program. Major activities of this program include:

- A sewer system evaluation survey, which essentially consists of wastewater flow measurement and analysis to identify areas of the wastewater collection system with excessive inflow/infiltration problems.
- Closed circuit television inspection of trunk sewer mains to specifically identify the defective sewer lines for repair and rehabilitation. In 2005, 229 miles of old sewer lines and 30 miles of new sewer lines were inspected.
- Repair and rehabilitation of sanitary sewer lines and manholes identified by closed circuit television inspection. This includes, among others, dig up repairs, manhole rehabilitation, and

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trenchless pipe repair technologies such as robotic, cured-in-place, and fold-and-reformed pipe rehabilitation processes. In 2005, approximately 115,557 feet of sanitary sewer lines were rehabilitated and over the past eight years this totals 1,155,257 feet (219 miles).

- Completion of 36 dig-up repairs and 101 trenchless point repairs.

In addition to reducing infiltration of extraneous waters into the wastewater collection system, this repair and rehabilitation program significantly extends the life of the sewer system.