

OPERATION, MAINTENANCE, INSPECTION, AND REPAIR PROGRAM FOR ALL MUNICIPALLY OWNED STORMWATER FACILITIES

FOR

EAST BRANDYWINE TOWNSHIP CHESTER COUNTY, PENNSYLVANIA

Revised

January 2010, June 2012

THE GOAL OF THE Operations, Maintenance, Inspection and Repair Manual (O&M manual) is to ensure that all of East Brandywine Township's stormwater management facilities are functioning properly and to prevent or reduce pollutant runoff to the maximum extent practical. If work on any part of the Township's stormwater system is conducted by outside contractors, they will also be required to follow the procedures outlined in this manual.

Pollution Prevention/Good Housekeeping Procedures for Municipal Operations

Pollution prevention and good housekeeping are the simplest and least costly methods to implement to help protect stormwater quality from municipal facilities. These are integral components to an effective stormwater management policy because it is easier to prevent pollution from entering waterways than to clean it up later.

Good Housekeeping

Good housekeeping practices are designed to maintain a clean and orderly work environment. Often the most effective first step towards preventing pollution in the stormwater collection system simply involves using good common sense to improve basic housekeeping methods. A clean and orderly work area reduces the possibility of accidental spills caused by mishandling of chemicals or equipment and should reduce safety hazards to Township personnel.

- Maintain clean, dry floors and ground surfaces by using brooms, shovels, vacuum cleaners or cleaning machines. Sweeping shall be conducted as needed to remove dirt and other debris, as well as immediately following loading/unloading activities, when practical.
- Regularly pickup garbage and waste materials and place all trash, dirt, and other debris in the dumpster. The Township's recycling program shall be utilized to collect and properly dispose of paper, plastic, cans, and bottles.

Material Storage Practices

Improper storage can result in the release of materials or chemicals that can cause stormwater runoff pollution. Keep storage areas clean and well organized and provide adequate aisle space to facilitate material transfer and easy access for inspections.

- All containers, drums, and bags shall be stored away from direct traffic routes to prevent accidental spills.
- When practical, chemical, fluids, and supplies should be kept indoors.
- If containers containing chemicals are stored outside, they must be covered when not being used and placed on spill platforms.
- All containers shall be properly labeled or marked and kept in good condition and tightly closed when not in use.
- Perform regular inspections of all indoor and outdoor storage locations.

Materials Handling Practices

Absorbent material, spill kits and drip pans must be kept near any potential spill hazard and protected from rainfall. If spills or accidents occur, contain with dikes, berms, or appropriate absorbent materials and dispose of properly after use. Spills of hazardous materials require special care and should only be attempted by trained Township or contracted personnel. Collect all waste fluids in properly labeled containers and dispose of properly.

Stormwater Facility Operation, Inspection and Maintenance

Stormwater Facility Operation

All municipally owned stormwater facilities will be operated according to their design specifications and in a manner that prevents or reduces adverse environmental or public health and safety impacts.

Stormwater Facility Inspection

Inspections are to be conducted by East Brandywine Township Public Works personnel (or other Township representatives) to evaluate the performance of the stormwater facilities and to determine the potential amounts of pollutants, trash and debris entering and discharging from the stormwater collection system. These inspections should occur as part of regular job duties.

- Inspections will check for excessive silt build-up, erosion, collapsed pipes, misaligned joints and water quality concerns such as unusual algae growth, discolored water, water with a sheen, and suspect odors.
- Inspections will occur after severe weather conditions, such as heavy rains, to ensure they are working properly and are clear of debris. Inspection frequencies will depend on a variety of factors including weather conditions and type and function of the stormwater structures.
- All inspections activities, results and recommendations are to be documented in writing and kept on file with the Township. Typical records to be retained for future reference include a log of all inspections, repairs and maintenance performed at the site, copies of inspection reports, invoices for work performed, and a photograph of facilities.

Roadways

East Brandywine Township owns and maintains approximately 35 miles of Township roadways.

- The overall condition and cleanliness of Township roads and parking lots shall constantly be inspected and evaluated during routine travels by public works personnel.
- Those areas with excessive staining, trash or sediment will be investigated and scheduled for cleaning or repairs as necessary.
- Appropriate corrective actions shall be considered for any areas exhibiting flooding or poor drainage patterns.

The following roads within the Township are State owned and maintained:

- Creek Road (SR282)
- Horseshoe Pike (SR322)
- North Guthriesville Road
- Little Washington Road
- Corner Ketch Road
- Hopewell Road from Horseshoe Pike to Rock Raymond Road
- Reeds Road
- Rock Raymond Road

- Dowlin Forge Road
- East Reeceville Road
- Bondsville Road

Storm Drain Inlets

East Brandywine Township owns and maintains over 400 storm drain inlets located along roadways and in parking lots throughout the Township.

- Inspect all Township storm drain inlets at least annually to determine the trash and sediment load and overall condition of the structure. If the depth of deposits is greater than or equal to one-third the depth from the basin, cleaning will be scheduled.
- Storm drain inlets that accumulate trash and deposits quickly will be inspected more frequently and the drainage area will also be inspected to determine possible causes.
- Inlet grates will be inspected to ensure that there is no trash blocking the inlets, especially before heavy rains are forecast.
- While inspecting storm drains inlets, Township staff will check for evidence of illegal dumping or illicit discharges. If evidence of illegal dumping or illicit discharges is found, efforts are to be made to identify the source of these discharges.

Storm Sewer Piping, Drainage Channels, and Outfalls

The Township owns several large box culverts and many miles of underground storm sewer piping ranging in size from 12 to 36 inches. The age of the piping ranges from 40 years old to new pipe that was recently installed. The piping is constructed of reinforced concrete pipe, clay pipe, corrugated metal pipe, cast iron/ductile iron pipe, PVC pipe and polyethylene pipe. The Township maintains several ditches, culverts and swales that function as storm drainage channels.

- Open conveyances will be inspected annually by public works personnel to check for trash, debris, sediment build-up, obstructions and general water quality conditions.
- Piping will be inspected as needed to check for structural integrity, blockages, or any other unusual conditions such as improper cross-connections or excessive inflow/infiltration.
- Stormwater outfalls will be periodically inspected to check for any unusual conditions such as excessive erosion or illicit discharges.

Stormwater BMPs

The Township owns numerous stormwater BMPs. These BMPs are to be inspected at least annually to check for sediment accumulation and overall conditions and they should be inspected after large rain events to evaluate overall performance and drainage characteristics.

Stormwater Facility Maintenance and Repair

East Brandywine Township's stormwater facility O&M program is structured to provide inspections of all facilities and to provide maintenance as needed. All maintenance activities are to be documented in writing and kept on file with the Township. When possible, photos will be taken of various storm sewer system components to document before and after maintenance conditions.

Roadways

East Brandywine Township is responsible for repairs and maintenance of all Township owned roadways. If road paving or repairs are performed by outside contractors the following guidelines should be followed:

Roadway Paving Repair

- Avoid paving activities during wet weather.
- Ensure that storm drain inlets and open manholes are protected during road repair work to prevent slurry mixes, dust, and debris from entering the storm sewers.
- Avoid using water to clean up. Mechanically sweep and/or vacuum dust and debris following all activities. DO NOT wash residue into the storm drain system.
- Place stockpiles away from waterways and stormwater inlets to prevent materials from being washed into streams. Cover stockpiles or contain with berms.
- Contain water and wastes generated during cleaning and flushing of spray equipment and field servicing of equipment. Use inlet protection and allow area to dry before uncovering storm drain inlets.
- Recycle used materials such as asphalt. Store these materials properly.
- Use drip pans to contain leaks from vehicles and equipment parked at the site overnight.

Traffic Line Painting

- Develop painting-handling procedures for proper use, storage and disposal of paints to keep the material contained.
- Protect storm drain inlet, open manholes and roadside ditches during grinding and pressure washing activities.
- Avoid using water to clean up. Mechanically sweep and/or vacuum grindings and dust following all activities. DO NOT wash residue into the storm drain system.
- Contain water and wastes generated during cleaning and flushing of equipment and field servicing of equipment. Use inlet protection and allow area to dry before uncovering storm drain inlets.

Snow Removal and De-icing

The storage and application of materials used for roadway de-icing or traction control shall be conducted in a manner that reduces the impact to the storm sewer system and the environment. East Brandywine Township uses salt for de-icing. All road salt is stored indoors at the public works maintenance facility. All salt storage is to be protected from precipitation.

- During loading and unloading of salt, prevent and/or minimize spills by utilizing safe work practices and sound judgment.
- If any material is spilled, promptly collect it using dry cleaning methods. All collected materials shall be either reused or properly discarded.
- Minimize the tracking of materials from the storage area and the distance that road salt is transported during the loading/unloading operations.
- All operators of snow plows/salt spreaders are to be trained in the proper application rates of road salt. The salt spreaders are to be examined before operating to ensure that they are functioning properly.
- The application of road salt to roads or parking lots will be only enough to accomplish the task and will take into consideration site specific characteristics such as road width and design, traffic concentration, and proximity to surface waters.

Street Sweeping

The streets in East Brandywine Township are mechanically swept once a year after the winter season. Periodically intersections or areas with built-up debris are swept by hand and debris is collected and disposed of accordingly. Any materials recovered will be handled and disposed of in accordance with all applicable state and federal disposal regulations. Recovered materials are currently being sent to the LanChester landfill.

Leaf Collection

We currently collect leaves throughout the Township and transport them to a local farm. These leaves are distributed on the farm fields and are used to supplement their farming operation. The Township is planning to develop a composting area adjacent to our public works area. This site will be DEP approved and maintained by Township personnel.

Storm Drain Inlets

East Brandywine Township personnel shall schedule cleaning of municipal storm drain inlets when inspections reveal an excessive accumulation of sediment or debris. Structural repairs to any part of storm drain inlets will be performed as needed including replacement of damaged or deficient piping.

Storm Sewer Piping, Drainage Channels, and Outfalls

If inspections of storm sewer piping reveal structural deficiencies, cross-connections, tree roots, sediment build-up or obstructions, then the appropriate maintenance solution will be selected and implemented as soon as possible. These solutions may include excavation and repair, tree root removal, and physical cleaning. Chemical agents will not be utilized. For cleaning techniques such as jet/vactor use, rodding or bucketing, the downstream end of the pipe will be blocked off and the debris will be captured and removed from the system.

- For storm culverts, ditches and swales, maintenance of free flowing conditions will be achieved by physical removal of any debris, sediment or overgrown vegetation.
- For storm sewer easements, the Township will remove any obstruction that is identified.
- Trash/obstructions will be removed at the outfalls to maintain free flowing conditions.
- Velocity reducers will be maintained or replaced as needed.

Disposal of Debris

Any materials recovered from any part of the storm sewer collection system will be handled and disposed of in accordance with all applicable state and federal disposal regulations. Recovered materials are currently sent to the LanChester landfill. All recovered materials, especially those from storm drain inlets, piping, or basins, will be evaluated to determine if it is municipal, residual or hazardous waste.

Fertilizers, Herbicides and Pesticides

Any planned herbicide or pesticide application on Township lands or around any part of the storm sewer collection system will be reviewed by East Brandywine Township personnel in order to comply with all applicable regulations and to prevent adverse water quality impacts.

- Applications will only be conducted by Township personnel or contractors who have an appropriate applicators license from the PA Department of Agriculture.
- Fertilizers, herbicides, and pesticides shall be applied exactly according to manufacture guidelines, as more is not always better in the case of chemical applications. The use of these chemicals will be limited as much as possible and non-hazardous alternatives shall be encouraged.

This O&M manual will be reviewed periodically and revised as needed.