

MAINTAINING STORMWATER CONTROL MEASURES STANDARD OPERATING PROCEDURES

Guidance for Responsible Personnel, Private Owners & Operators

1. PURPOSE

Stormwater control measures (SCM) serve to control flooding, protect community infrastructure and improve water quality. Routine inspection of SCMs provides the county the ability for readiness and performance control for when storm events happen.

This standard operating procedure (SOP) has been developed to familiarize responsible personnel with the inspection, monitoring and maintenance of the **Stormwater Drainage System** located in Unincorporated Jersey County. The SOP outlines procedures and checklists as guidelines for the inspection, monitoring and maintenance. Maintenance of stormwater drainage, and erosion and sediment control facilities located on private property shall be the responsibility of the owner or subsequent owner of that property.

2. USE AND UPDATING INFORMATION

This SOP has been developed for the present operating and maintenance conditions. The SOP is an evolving document and requires updating and improvements as conditions change within the Stormwater Drainage Management System.

The SOP shall be updated to comply with any amendments, modifications, or renewals of the *Ordinance Providing for the Control of Stormwater Drainage and Detention, Soil Erosion, and Sediment Control within the Unincorporated Areas of Jersey County*, Stormwater Development or Management Permits, and NPDES Permits.

3. APPLICABILITY

3.1 Drainage Plans, Soil & Erosion Plans required:

- 1) Development or re-development of an area 10,000 or more sq. ft. of total impervious surfaces.
- 2) Land disturbance activity (clearing, stripping, grading, excavation, fill, or any combination) affecting 10,000 sq. ft. or more, or exceeds 100 cubic yards.
- 3) Land disturbance activity within 100 ft. of a river, lake, stream, pond, sinkhole, or wetland and is done in conjunction with 1) and 2).
- 4) Before a permit may be issued the applicant shall execute a maintenance agreement (see example) with Jersey County, guaranteeing the owner and all future owners of the property will maintain its stormwater drainage and erosion and sediment control system and shall provide for access to the system for inspection authorized personnel of Jersey County.
- 5) Maintenance Agreement to stipulate that personnel of Jersey County notify the property owner in writing of maintenance problems which require correction, the property owner shall begin such corrections within 24 hrs and shall not extend beyond 7 calendar days.

- 6) If corrections are not made within time specified by Jersey County, the cost of the necessary work completed shall be paid by the property owner.

4. RESPONSIBILITIES

4.1 The Office of the Jersey County Code Administrator and Floodplain Management (herein referred to as “Code Official”) is responsible for the administration of the standard operating procedures for SCM in the Unincorporated Jersey County. The Code Official or her/his designated staff is responsible for:

- 1) Inspecting streams, ditches, storage basins, and creeks in accordance with this SOP and in response to complaints and inquiries received in the Unincorporated Jersey County.
- 2) Forwarding drainage problem reports to the appropriate office for action,
- 3) Enforcing Jersey County’s *Ordinance Providing for the Control of Stormwater Drainage and Detention, Soil Erosion, and Sediment Control within the Unincorporated Areas, Subdivision Ordinance* and the *2015 International Property Maintenance Code*.
- 4) Serving maintenance notices to private property owners.

4.2 The Offices of Jersey County Highway, Soil & Water Conservation and County Code Administrator are responsible for cleaning the stream, culverts in ditches, and storage basins on public property, right of way and easements in accordance with the SOP.

4.3 The Incorporated Municipalities are responsible for maintaining their ditches, streams, and storage basins in Brighton, Jerseyville, Fieldon, Elsay, and Grafton parks in accordance with their Stormwater Maintenance Plans or Code of Ordinances.

4.4 All work on State of Illinois, Jersey County or Kansas City Southern Railroad property shall be coordinated with the appropriate contact office.

4.5 Property owners are responsible for maintaining the streams, ditches and detention basins on their properties.

5. JURISDICTION

5.1 This SOP and SCM covers the following public and private surface drainage facilities delineated in the drainage systems in Jersey County.

- 1) Mississippi River
- 2) Illinois River
- 3) Piasa Creek
- 4) Mill Creek
- 5) Deer Lick Hollow
- 6) Gilbert Lake
- 7) Sandy Creek
- 8) Owl Branch
- 9) Phils Creek
- 10) DeArcy Creek

- 11) Foster Lake
- 12) Elm Branch

6. IDENTIFICATION OF PROBLEMS

6.1 The Code Official or staff shall inspect all the watercourses listed in Section 5 bi-annually and during storm season.

6.2 The Code Official or staff shall within 48 hours after a major storm inspect the following “choke points” where debris has been known to accumulate:

- 1) Bridge on Otterville Rd., Macoupin Creek
- 2) Pump Station Rd., Macoupin Creek
- 3) Beltrees Rd. by Piasa Haven
- 4) North Bluff Ln., Piasa Creek
- 5) Fern Glen Valley Rd.
- 6) Lockhaven Rd. at Shady Oaks
- 7) Intersection Rt. 100 and Rt. 16
- 8) Mill Creek Park, Piasa Creek
- 9) Hickory Log Rd., Macoupin Creek
- 10) Costello Rd., Macoupin Creek
- 11) Oak Rest Rd., Piasa Creek
- 12) Range Line Rd., Piasa Creek
- 13) Dabbs North Rd., So. Fork Otter Creek
- 14) Teney Hollow, Piasa Creek
- 15) Mitchell Creek Rd., Piasa Creek
- 16) N. Springfield St., Miss. River, Otter Creek
- 17) Sugar Creek Rd., Sugar Creek
- 18) Reddish Ford Rd., Sugar Creek
- 19) Fieldon Hollow, Otter Creek
- 20) Otter Creek W., Otter Creek

6.3 The Code Official or staff shall report identified problems to the appropriate authority or office responsible for clean-up and file a Drainage Inspection Report after each inspection. A copy of the report shall be kept in the office of the Code Official.

6.4 The Soil and Water Conservationist shall be responsible for inspecting all complaints issued by land owners as per their Erosion and Sediment Control Plan or Stormwater Drainage and Detention Plan requirements. A report shall be made and kept in the Soil and Water Conservation office located in Jerseyville, IL.

6.5 The Code Official or staff shall inspect all complaints submitted by residents, community officials or other community offices. Such complaints and subsequent action taken by the County shall be recorded on a Complain/Inquiry Forms. The Code Official shall ensure that an inspection is conducted and the findings provided to the person submitting the complaint within a reasonable time period.

6.6 If a problem is verified, a Complain/Inquiry Form shall be completed and forwarded to the appropriate person. The Complain/Inquiry Forms shall be recorded and maintained in accordance with the County's complaint procedures. If the problem is on private property, a letter shall also be sent to the owner.

7. MAINTENANCE

7.1 There are four (4) types of maintenance problems:

- 1) Trash: human-made objects, such as garbage, shopping carts, tires, lumber, furniture, and appliances. Animal carcasses are also included as trash.
- 2) Minor problem: vegetation growth, tree limbs, and other "naturally" occurring debris. Sedimentation in a retention basin is also included.
- 3) Obstruction: fallen tree, culvert damage, large appliance, etc., that by itself, obstructs the flow of the ditch, inlet or outlet.
- 4) Structural project: bridge or culvert replacement, bank stabilization, dredging, or other major project.

7.2 Maintenance on Private Property

- 1) Property owners are responsible for maintenance of drainage facilities and encourage residents to correct or report problems before the next storm causes damage.
- 2) Trash, minor problems, and obstructions shall be reported to the owner by the Code Administrator.
- 3) If the owner does not remove the problem within ten (10) days, the County shall assume responsibility for the problem. If the problem is large enough to cause flooding of another property, The Highway Dept. shall enter the property and remove the problem.
- 4) If the problem causes an immediate hazard, the County State's Attorney may take action to have the owner remove the problem or pay for the maintenance work performed by the County.

8. INSPECTION & MAINTENANCE

8.1 New Development or Re-development

- 1) The Permittee shall notify the Soil & Water Conservationist shall make inspections at the site; the Permittee shall notify the Soil & Water Conservationist within two (2) working days of the completion of construction stages.
- 2) Bi-weekly inspection reports are to be submitted to Jersey County for all Development Permits Soil & Water Conservationist.
- 3) Single Family dwelling Bi-weekly reports must be certified by a registered professional engineer.

8.2 Housekeeping

- 1) Annual inspections of the streams, creeks and visible portions of the watershed in developed and undeveloped areas shall be conducted by the Code Official and/or staff. Violations and inspection shall be documented.
- 2) All complaints for soil and erosion shall be directed to the Soil & Water Conservationist for follow up inspections and reporting.

- 3) In accordance with the General NPDES Permit No. ILR40 and the NOI, Jersey County and the Soil & Water Conservationist will comply and implement activities as outlined in in the Pollution Prevention/Good Housekeeping.

Stormwater Control Measures (SCM)

1. Bioretention Area

These areas are depressed to allow shallow ponding of stormwater runoff that utilize special soil media, mulch and vegetation to capture and treat stormwater runoff from impervious surfaces (parking lots, rooftops). Under-drains may be installed to drain the Bioretention area to local sewers or appropriate outlets. The soil media is placed within a depression to filter ponded stormwater. Bioretention areas are planted with recommended plant material that can withstand wet and dry conditions are planted.

1.2 Maintenance required when:

- 1) Standing water is visible after 48 hours rain event.
- 2) Erosion is visible in the area, or on slopes and inlets leading into the Bioretention area.
- 3) Vegetation (weeds), sediment or debris is blocking inlets or outlets.
- 4) Foul odors present.
- 5) Sediment has accumulated over the mulch or soil media.

2. Dry Pond or Dry Extended Detention Basin

Dry ponds, also known as dry extended detention basins, are stormwater control ponds designed to capture stormwater runoff and detain the stormwater runoff for a designed period of time. Older dry ponds drain completely between storm events and are typically maintained in a mowed grass condition, these ponds have a primary role of detaining flows from large storm events. More recent dry ponds should also capture excess sediments, trash and debris and can remove contaminants from stormwater prior to being released downstream or into a local sewer system. More recently built dry ponds will have additional features called forebays (at inlets) or micropool (at the outlet) that help capture excess sediments, trash and debris and can remove contaminants from stormwater before it leaves the pond.

2.1 Maintenance required when:

- 1) Standing water is visible 72 hours after a rain event.
- 2) Outlet is blocked by trash, debris or vegetation
- 3) Erosion within the emergency spillway, or blocked by debris.
- 4) Erosion of side slopes or dam portion of pond.
- 5) Animal burrows within dam portion or side slopes of pond.
- 6) Trees growing on the dam.
- 7) Foul odors present.

3. Wet Pond or Wet Extended Detention Basin

Wet ponds or wet extended detention basins are designed to hold water in a permanent pool. Stormwater runoff generated during storm events is stored above the permanent pool surface providing flood control protection while affording some ability to settle out sediments and contaminants from the stormwater before releasing it downstream or into a local sewer system. Wet ponds typically contain a principle outlet structure or pipe and an emergency spillway. Wet ponds can either be dug out ponds or created by building a small dam or embankment to hold stormwater runoff. Principle outlet structures or pipes and emergency spillways should be inspected frequently to ensure they are not blocked and are operational. Vegetation along the dam, embankment and emergency spillway should be maintained in a mowed grass condition.

3.1 Maintenance required when:

- 1) Outlet is blocked by trash, debris or vegetation.
- 2) The emergency spillway is blocked by debris or has signs of erosion.
- 3) Erosion of dam, embankment or side slopes of pond.
- 4) Low flow orifice, forebays, and micro pool are blocked by trash, debris, or sediment.
- 5) Dam or embankment shows signs of visible water seepage.
- 6) There are animal burrows within dam, embankment or side slopes of pond.
- 7) Woody vegetation is growing on the dam.
- 8) Foul odors present.
- 9) Pond depths have been significantly reduced due to sediment accumulation.
- 10) Algae blooms covering over 1/3 of pond surface area occur in the summer.
- 11) Beavers are present in the basin.

4. Permeable Pavement

Permeable pavement materials consist of permeable interlocking concrete pavement (PICP), pervious concrete, porous asphalt or other permeable materials such as geogrid or grass pavement systems that provide structure and stability yet allow water to pass through the pavement and infiltrate into underlying gravel layers and existing soils beneath. Permeable pavements are constructed in place of traditional asphalt or concrete in parking areas, driveways, sidewalks and low traffic vehicular roadways. All permeable pavements allow infiltration of runoff, but individual designs dictate how much storage of precipitation and stormwater runoff from the heaviest rain events will occur. Regular inspection and periodic removal of accumulated sediments from the surface are required for permeable pavement systems. This is achieved by vacuuming and sweeping the surface of the pavement with a vacuum-sweeper as defined in the SCM's inspection and maintenance agreement. Grass paving systems are cellular in nature and allow for vegetation to grow through them are commonly used in overflow parking areas and used on infrequently traveled access driveways. Regular inspection of grass paving systems to determine the health of vegetation, usually turf grass, is periodically required.

4.1 Maintenance is required when:

- 1) Standing water is visible on the surface after a rain event.

- 2) Significant amounts of sediment and/or debris have accumulated on the pavement surface or in PICP joints creating clogging issues.
- 3) Vegetation found growing between PICP joints.
- 4) Deterioration of porous asphalt or pervious concrete pavement surface that generates fine sediments which lead to clogging issues.
- 5) For PICP, gravel between pavers is missing.

5. Non-Structural Stormwater Control Measures – Riparian & Wetland Setbacks & Conservation Areas

Riparian and wetland setbacks require the protection of vegetation, soils and drainage patterns in these naturally sensitive areas to protect water quality and wildlife habitat. The county ordinance specifies widths and terms of protection and use within these areas. Setback and easement boundaries are often demarcated in the field with signage. Conservation areas are often protected through a conservation easement that dictates terms of use and maintenance of a specific area often with the intent to maintain existing natural conditions for water quality and habitat protection. Maintenance typically requires an annual inspection for encroachment into or disturbance within the boundaries of the designated setbacks or easement areas. Inspection of vegetation to control non-native or invasive species may also be required with periodic reporting requirements often detailed in the terms of the easement or county ordinance requirements. Additional non-structural SCMs involve educational efforts, management strategies, and planning alternatives by communities and are often associated with the way land is used and managed. Limiting the frequency of fertilizer applications for lawn areas or holding household hazardous waste disposal events are two examples of non-structural SCMs which provide public awareness to the community about how to reduce their contributions to stormwater pollution. Implementing these practices can have a long-lasting effect on the health of the local environment and can significantly reduce maintenance costs for structural SCMs.

5.1 Maintenance required when:

- Easement boundaries observed.
- Vegetation removal or disturbance is observed.
- Significant populations of non-native or invasive plants are observed.
- Significant soil erosion of stream banks or natural areas observed due to lack of vegetation.

6. Rain Barrels & Cisterns

Rain barrels and cisterns are structures that collect rooftop rainwater that would otherwise drain to natural waters or sewer systems. The collected stormwater can be used to water plants, trees, or lawns during dry periods.

A rain barrel is typically composed of a 40-55 gallon barrel or drum with some type of diverter or connection from a downspout, a spigot or hose to drain the barrel, and some type of overflow mechanism. Openings to the air are screened to keep debris and pests out. An overflow mechanism is provided so that when the rain barrel is full, excess water flows back into the downspout and then to a sewer system or into a landscaped area such as a rain garden.

Cisterns are similar to rain barrels in function but hold larger quantities of water. They are typically constructed out of reinforced concrete, galvanized steel, or plastic. Cisterns may be installed underground, at ground level, or elevated depending on the site and space constraints of the property.

6.1 Maintenance Suggestions:

- 1) Inspect rain barrel or cistern on a regular basis and periodically during a rain event to ensure all openings and connections are clear of debris and flowing freely.
- 2) Clean gutters regularly to reduce debris and leaves from clogging connections and being deposited into the barrel or cistern.
- 3) Once a year, tip empty rain barrels over and rinse the inside with a hose to remove collected debris. If a significant amount of algae is observed within the barrel, apply a small capful of chlorine bleach into the barrel to help prevent further algae growth.
- 4) Insure the barrels or cisterns are stable on a strong, sturdy, and flat base.
- 5) Rain barrels and cisterns must be appropriately winterized. Typically this entails draining and diverting flows for the winter months to prevent ice damage or leaks.
- 6) For cisterns, refer to manufacturer recommendations for sediment removal and maintenance of pumps or filters if present.

7. Rain Garden

A rain garden is a shallow, landscaped depression that contains native plants that can tolerate both wet and dry conditions. It captures stormwater runoff from rooftops and driveways and allows it to soak into the ground before it reaches natural waters or sewer systems. Rain gardens also provide habitat for wildlife such as birds, butterflies and other pollinators.

Rain gardens typically do not contain drainage pipes or outlet structures to convey captured stormwater runoff from the shallow, landscaped depression as do Bioretention areas and vegetated infiltration swales. Rain gardens rely solely on amended soils to allow stormwater runoff to soak into the ground and evapotranspiration by plants to remove stormwater runoff from the rain garden.

7.1 Maintenance is required when:

- 1) Standing water is visible 24 hours after a rain event.
- 2) Erosion is visible within the rain garden, on the slopes and inlets leading into the rain garden, or on the berm if present.
- 3) Vegetation, sediment or debris blocking inlets or is excessively present in rain garden.
- 4) Vegetation is wilting, discolored, or dying.
- 5) Foul odors present.
- 6) Mulch cover is inadequate.

8. Oil-Water Separator

Oil-water separators are single or multi-chambered devices used to remove oil, sediment, and other pollutants from stormwater as it moves through the system. They are typically used in industrial and garage facilities to provide pretreatment of floor drain water. Oil-water separators allow oil and other substances lighter than water to either float to the top of the system or be intercepted and collected for disposal. Substances heavier than water (i.e., sediment and other solids) settle into sludge at the bottom of the system. Removal of pollutants from an oil-water separator according to the design levels and schedule is critical, since unmaintained devices nearly always export concentrated sediments and oils.

8.1 Maintenance required when:

- 1) Accumulated sediment and sludge at bottom of system has reached manufacturer's recommended volume to be removed.
- 2) Floating oil layer or oil container has reached manufacturer's recommended volume to be removed.
- 3) Spills or leaks are noticed in the system.
- 4) Oil or other pollutants are discharging from the system outlet.
- 5) Obstructions from trash or debris are visible at the inlet or outlet.
- 6) Follow inspection and maintenance instructions and schedules provided by system manufacturer and installer.

9. Routine

County personnel can perform routine maintenance while in the field performing other duties, such as inspection for nuisance, building, bridges, culverts and conservation routine maintenance or perform bi-annual inspections.

9.1 Routine Maintenance:

- 1) Encroachment: Inspect boundaries and internal areas of riparian and wetland setbacks or conservation areas for encroachment, damaged vegetation or soil-disturbing activities. Report non-compliance issues to appropriate regulatory authority or conservation easement holder.
- 2) Vegetation Management: Inspect plant health seasonally to ensure vigorous growth and protection from soil erosion.

9.2. Non-Routine Maintenance:

- 1) Invasive Vegetation: Treat and remove invasive vegetation from riparian and wetland setbacks or conservation areas per the terms of setback regulations or conservation easement agreements.
- 2) Sign Replacement: Replace riparian and wetland setback or conservation area boundary signs if damaged, vandalized or removed.

Attachments:

Drainage Problem Report
Waterway Inspection Report
Complaint/Inquiry Form
Private Property Notice Letter