

*County of Lake, Ohio*

## STORMWATER MANAGEMENT DEPARTMENT

### MEMORANDUM

PROVIDING STORMWATER  
SERVICES FOR:

City of  
Kirtland  
Mentor-on-the-lake  
Painesville  
Wickliffe  
Willoughby Hills  
Willowick  
Township of  
Concord  
Madison  
Painesville  
Village of  
Fairport Harbor  
Grand River  
Kirtland Hills  
Perry  
Timberlake

IN PARTNERSHIP

Chagrin River  
Watershed Partners, Inc.

Lake County  
General Health District

Lake County  
Soil & Water  
Conservation District

To: Lake County Stormwater Management Department Member  
Communities, Partner Agencies, and Advisory Board  
From: Timothy A. Miller, Director  
Date: January 4, 2008  
RE: Rules and Regulations

The Lake County Board of County Commissioners, at their meeting on December 20, 2007, voted to adopt the Stormwater Management Department Rules and Regulations governing the unincorporated areas of this Department. For your information and convenience, I have enclosed a copy of the Rules as well as a copy of the resolution. Please feel free to distribute the Rules to those who may be interested in them and also to use them as a model for developing the Rules and Regulations for any of the municipal members who still need to adopt their own.

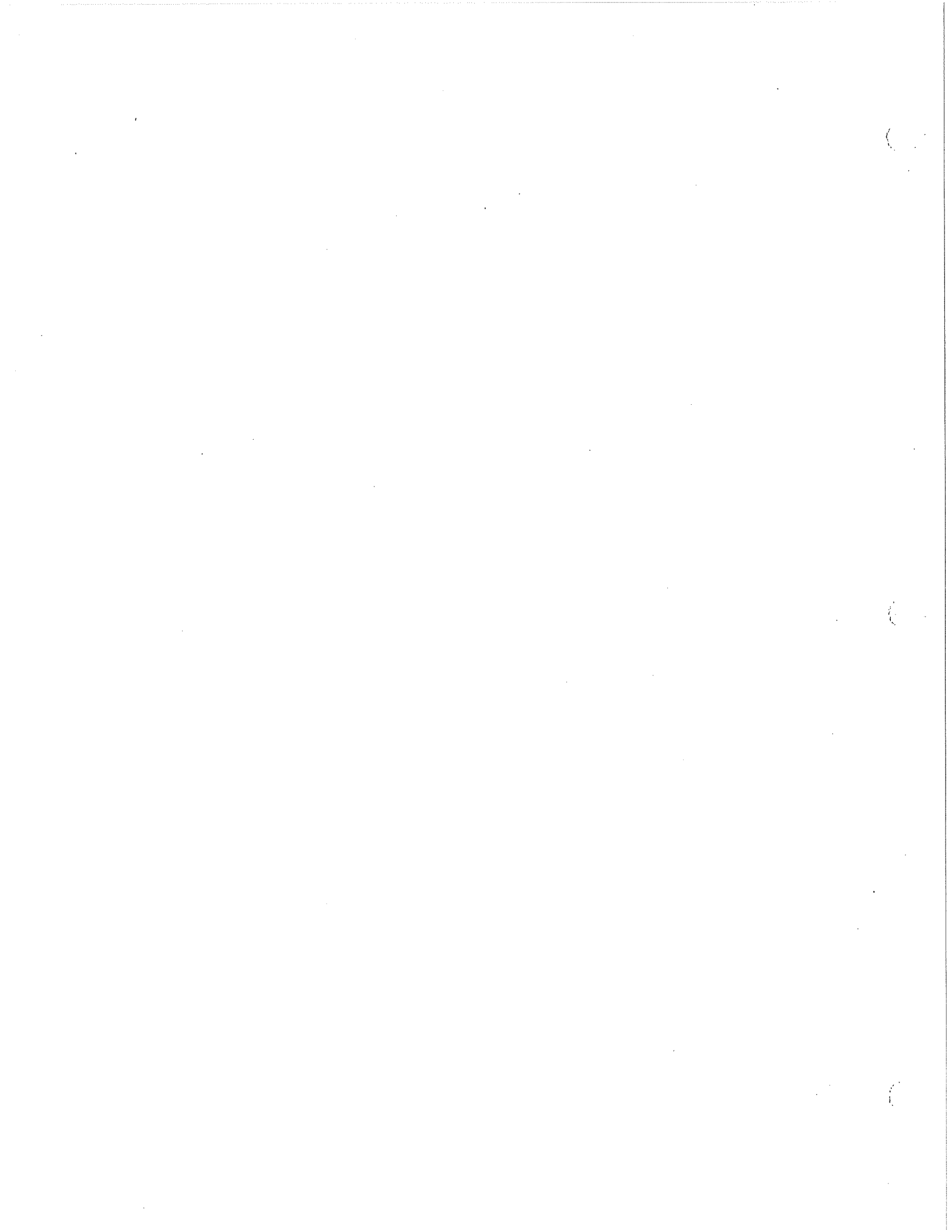
If you have any questions, please do not hesitate to contact me.

Thank you.

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[www.lakecountyohio.org/smd](http://www.lakecountyohio.org/smd)

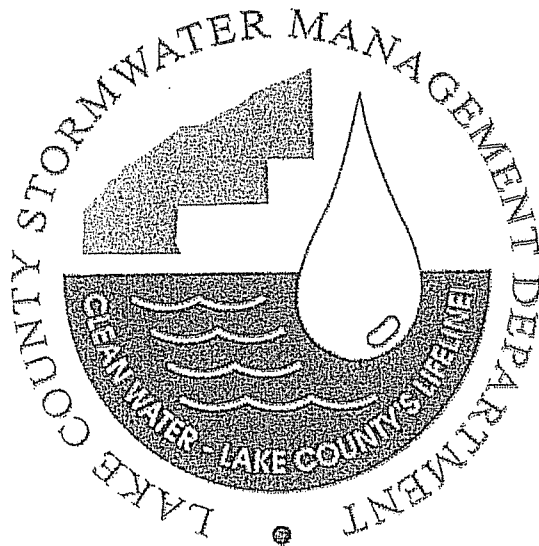
125 E. Erie Street ~ Painesville, OH 44077  
Phone: 440/350.5900 ~ Fax: 440/350-5919



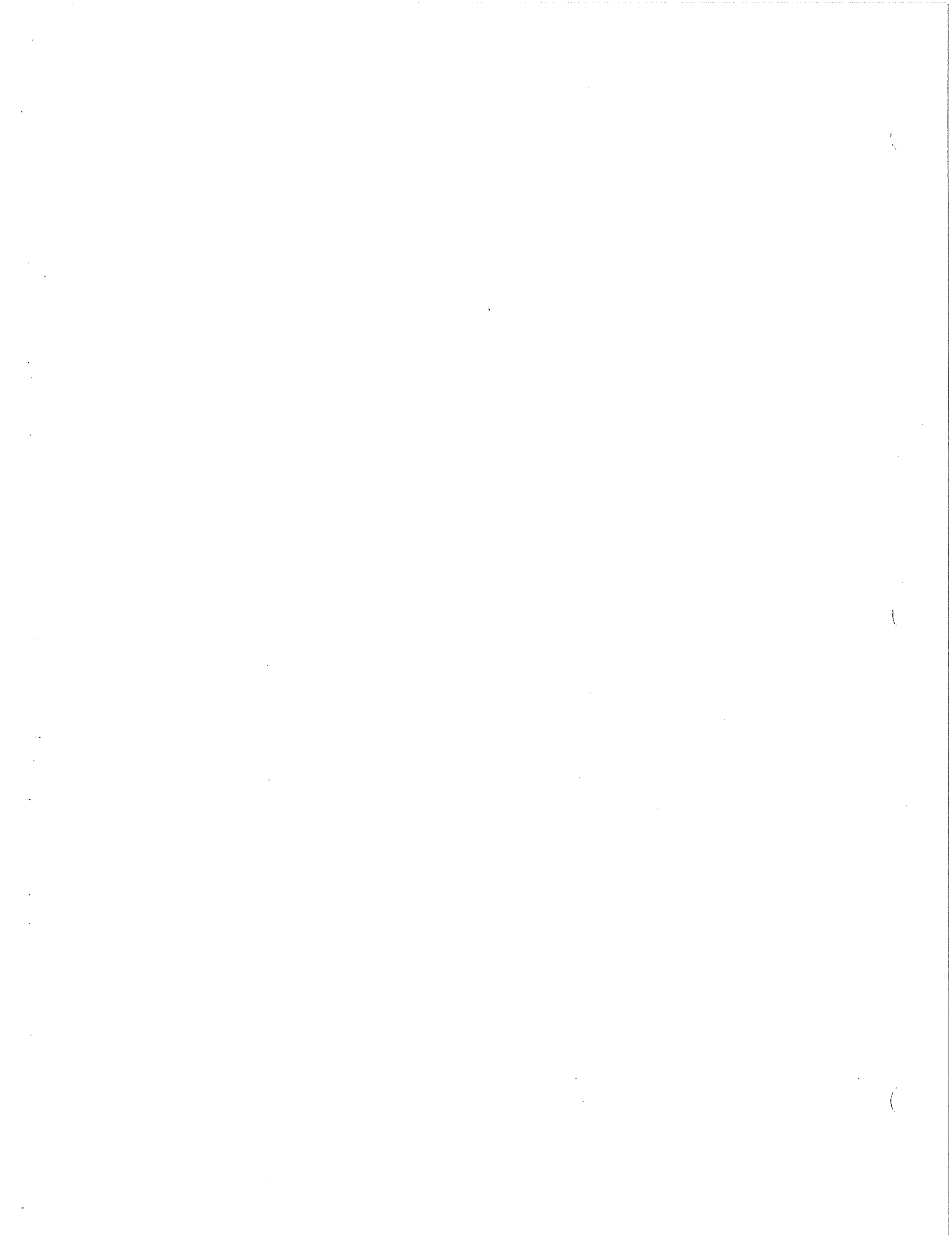
# Lake County Stormwater Management Department

## RULES AND REGULATIONS

December 6, 2007  
Adopted December 20, 2007



*Purpose and Intent To establish feasible and economically reasonable standards to achieve a level of stormwater control and illicit discharge and illegal connection management that will minimize damage to public and private property and degradation of water resources.*



# CONTENTS

## **SECTION I – GENERAL**

- 1.01 PURPOSE, INTENT AND FINDINGS OF FACT
- 1.02 DEFINITIONS
- 1.03 APPLICABILITY
- 1.04 ALTERNATIVE ACTIONS
- 1.05 STORMWATER ADVISORY BOARD
- 1.06 RESPONSIBILITY FOR ADMINISTRATION
- 1.07 DISCLAIMER OF LIABILITY
- 1.08 CONFLICTS, SEVERABILITY, NUISANCE, & RESPONSIBILITY
- 1.09 COMPLIANCE WITH STATE AND FEDERAL LAWS AND REGULATIONS

## **SECTION II – STORMWATER MANAGEMENT PLAN REQUIREMENTS**

- 2.01 CONTENT OF PLAN AND CALCULATIONS
- 2.02 PRE-APPLICATION MEETING
- 2.03 SUBMITTAL OF PRELIMINARY AND FINAL MANAGEMENT PLANS AND APPROVAL PROCESS
- 2.04 AS-BUILT REQUIREMENTS
- 2.05 EASEMENTS
- 2.06 AREAS ADJACENT TO PROTECTED WATER RESOURCES

## **SECTION III – STORMWATER DISCHARGE QUANTITY STANDARDS**

- 3.01 GENERAL
- 3.02 OPEN CHANNELS
- 3.03 OPEN DRAINAGE SYSTEMS
- 3.04 ROADSIDE DITCHES
- 3.05 STORM SEWERS
- 3.06 CULVERTS AND BRIDGES
- 3.07 DETENTION/RETENTION FACILITIES
- 3.08 STORMWATER MANAGEMENT ON REDEVELOPMENT PROJECTS
- 3.09 OVERLAND FLOODING FOR 100-YEAR EVENT

**SECTION IV – STORMWATER DISCHARGE QUALITY STANDARDS**

- 4.01 GENERAL
- 4.02 GENERAL CRITERIA FOR BEST MANAGEMENT PRACTICES
- 4.03 SPECIFIC CRITERIA FOR BEST MANAGEMENT PRACTICES

**SECTION V – ILLICIT DISCHARGE AND ILLEGAL CONNECTION PROHIBITION AND MONITORING**

- 5.01 DISCHARGE AND CONNECTION PROHIBITIONS
- 5.02 MONITORING OF ILLICIT DISCHARGES AND ILLEGAL CONNECTIONS

**SECTION VI – ENFORCEMENT AND PENALTIES**

- 6.01 ENFORCEMENT AND PENALTIES

## SECTION I – GENERAL

### 1.01 PURPOSE, INTENT AND FINDINGS OF FACT

- A. The intent of these Rules and Regulations is to establish feasible and economically reasonable standards to achieve a level of stormwater control and illicit discharge and illegal connection management that will minimize damage to public and private property and degradation of water resources, and will promote and maintain the health, safety, and welfare of the residents of the unincorporated member communities of the Lake County Stormwater Management Department (LCSMD). Specific purposes are to:
1. Further the maintenance of safe and healthful conditions of regional drainage facilities;
  2. Prevent and control the adverse effects of stormwater; prevent and control soil erosion; prevent and control water pollution; and protect spawning grounds, fish, and aquatic life;
  3. Assure the safe capacity of regional drainage facilities and receiving water bodies; prevent undue channel erosion; and promote management practices that seek to prevent damage to downstream properties.
  4. Prohibit illicit discharges and illegal connections.
  5. Establish legal authority to carry out inspections, monitoring procedures, and enforcement actions necessary to ensure compliance with these Rules and Regulations.
- B. These Rules and Regulations will, to the extent possible, develop standards to:
1. Control stormwater runoff from sites undergoing soil disturbing activities and land use changes.
  2. Assure that the volume and rate of stormwater runoff originating from property is controlled so that surface water and ground water are protected, soil erosion is controlled, and flooding potential is not increased.
  3. Preserve the natural drainage characteristics of a site and minimize the need to construct, repair, and replace enclosed, below-grade storm drain systems.
  4. Preserve natural infiltration and ground water recharge, and maintain subsurface flow that replenishes water resources and wells.
  5. Assure that stormwater controls are incorporated into site planning and design at the earliest possible stage.
  6. Prevent unnecessary stripping of vegetation and loss of soil, especially adjacent to water resources.
  7. Reduce the need for costly maintenance and repairs to roads, embankments, ditches, stream channels, floodplains, and stormwater management practices that are the result of inadequate stormwater control.

## SECTION I – GENERAL

8. Reduce the long-term expense of remedial projects needed to address problems caused by inadequate stormwater control.
9. Encourage the construction of stormwater management practices that serve multiple purposes including, but not limited to, flood control, erosion and sediment control, fire protection, water quality protection, recreation, and habitat preservation.
10. Ensure that stormwater management practices are properly designed, constructed, and maintained.
11. Control illicit discharges and illegal connections.

C. These Rules and Regulations are based on the finding that uncontrolled stormwater, illicit discharges, and illegal connections have significant impacts on water resources and the health, safety and general welfare of the community, and diminish the public enjoyment and use of natural resources. Specifically, uncontrolled stormwater runoff, illicit discharges, and illegal connections can:

1. Degrade stream habitat by increasing stream bank erosion, increasing stream bed scour, diminishing groundwater recharge, and diminishing stream base flows;
2. Diminish the capacity of lakes and streams to support aquatic life, recreation, and water supply uses by increasing nutrients and other urban pollutants;
3. Alter wetlands by changing wetland hydrology and increasing pollution;
4. Reduce the quality of groundwater by increasing pollution;
5. Threaten public health, safety, property, and general welfare by overtaxing storm sewers, drainage ways, and other drainage facilities;
6. Threaten public health, safety, property, and general welfare by increasing flood peaks and volumes; and undermine floodplain management efforts by increasing the incidence and levels of flooding;
7. Aggravate infiltration and inflow of water into sanitary sewers during storm events, causing the conveyance system to surcharge, overflow or back up into basements.

### 1.02 DEFINITIONS

A. The following definitions shall apply to these Rules and Regulations:

1. **AS-BUILT SURVEY:** A post-construction survey shown on a plan or drawing prepared by a Registered Surveyor or Engineer indicating the actual dimensions, elevations, and locations of any structures and underground utilities.
2. **BEST MANAGEMENT PRACTICE (BMP):** Any practice or combination of practices that is determined to be the most effective, practicable (including technological, economic, and institutional considerations) means of preventing or



## SECTION I – GENERAL

reducing the amount of pollution to a level compatible with water quality goals. BMPs may include structural practices, conservation practices and operation and maintenance procedures.

3. CLEAN WATER ACT: Pub. L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, Pub. L. 97-117, and Pub. L. 100-4, 33 U.S.C. 1251 et. seq. Formally referred to as the Federal Water Pollution Control Act or the Federal Water Pollution Control Act Amendments of 1972.
4. COMMISSIONERS: The Board of Lake County Commissioners.
5. COST: The actual expenditure by the LCSMD, or a representative of, for labor, material, engineering, supervision, motor vehicles, tools and any other expenditures incident thereto, to the extent that any or all of such items are applicable in the particular situation involved. The LCSMD reserves the ability to use estimated expenditures to determine cost.
6. COUNTY: Lake County, acting through its Board of County Commissioners, the LCSMD, the Lake County Soil and Water Conservation District, and the Lake County Sanitary Engineer
7. COUNTY PERSONNEL or AUTHORIZED PERSONNEL: Employees of the County or those agents and/or assignees of the County authorized by the LCSMD and the Lake County Sanitary Engineer to implement these Stormwater Management Rules and Regulations including but not limited to inspection duties.
8. CRITICAL STORM: A storm that is calculated by means of the percentage increase in volume of runoff by a proposed development area. The critical storm is used to calculate the maximum allowable stormwater discharge rate from a developed site.
9. DETENTION/RETENTION FACILITY: A basin, pond, oversized pipe, or other structure that reduces the peak flow rate of stormwater leaving the facility by temporarily storing a portion of the stormwater entering the facility.
10. DEVELOPMENT AREA: A parcel or contiguous parcels owned by one person or persons, or operated as one development unit, and used or being developed for commercial, industrial, residential, institutional, or other construction or alteration that changes runoff characteristics.
11. DEVELOPMENT DRAINAGE AREA: A combination of each hydraulically unique watershed with individual outlet points on the development area. When calculating the water quality volume for a best management practice, the development drainage area is the total contributing drainage area to that practice.
12. DISTRICT: The County sewer, water and drainage district in Lake County, Ohio, as it now exists or hereafter may be enlarged or modified by the County.

## SECTION I – GENERAL

13. DISTURBED AREA: An area of land subject to erosion due to the removal of vegetative cover and/or soil disturbing activities.
14. DRAINAGE: The removal of surface water or groundwater from land by surface or subsurface drains.
15. EROSION: The process by which the land surface is worn away by the action of wind, water, ice, gravity, or any combination of those forces.
16. EXTENDED CONVEYANCE: A stormwater management practice that replaces and/or enhances traditional open or closed storm drainage conduits by retarding flow, promoting percolation of runoff into the soil, and filtering pollutants during the stormwater quality event.
17. EXTENDED DETENTION: A stormwater management practice that replaces and/or enhances traditional detention facilities by releasing the runoff collected during the stormwater quality event over at least 24 to 48 hours, retarding flow and allowing pollutants to settle within the facility.
18. FARM: The land or water devoted to growing and/or cultivating crops, trees and plants, and managing livestock and/or poultry in connection with any of the following: 1) Raising or harvesting of an agricultural or horticultural commodity, and/or 2) Raising, shearing, feeding, caring for, training, and management of livestock and poultry. Structures or other development on a farm are not considered part of the farm for purposes of the definition and applicability of these Rules and Regulations.
19. GRADING: The process in which the topography of the surface of the land is altered.
20. IMPERVIOUS AREA: A surface area that is altered, in conjunction with the removal of vegetation, and compacted or covered with material that is resistant to the infiltration of water, including, but not limited to, most conventionally surfaced streets, roofs, sidewalks, patios, driveways, parking lots, and any other oiled, graveled, graded, compacted, or other surface which impedes the natural infiltration of stormwater. May also be referred to as impervious cover or impervious surface.
21. ILLEGAL CONNECTIONS: Any drain or conveyance, whether on the surface of subsurface, that allows an illicit discharge to enter the MS4.
22. ILLICIT DISCHARGE: Defined at 40 CFR 122.26(b)(2) and refers to any discharge to an MS4 that is not entirely composed of stormwater, except discharges authorized under an NPDES permit (other than the NPDES permit for discharges to the MS4) and discharges noted in Section V of these Rules and Regulations.
23. INFILTRATION: A stormwater management practice that reduces discharge to a water resource, requiring collected runoff to either infiltrate into the groundwater

## SECTION I – GENERAL

- and/or be consumed by evapotranspiration, thereby retaining stormwater pollutants in the facility.
24. LAND DEVELOPMENT ACTIVITY: Any soil disturbing activity associated with construction or re-development of buildings, roads, parking lots, paved and unpaved storage areas, utilities, and similar facilities, but not including farm activity.
  25. LARGER COMMON PLAN OF DEVELOPMENT: A contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan. (OEPA, NPDES Permit #OHQ000001 and #OHC000002).
  26. LCSMD (Lake County Stormwater Management Department): The Stormwater Management Division of the Lake County Department of Utilities, its employees, agents, and/or assignees, and the Lake County Sanitary Engineer, its employees, agents, assistants, and/or assignees.
  27. MAINTENANCE AGREEMENT: Any legal document entered into between the LCSMD and an applicant pursuant to RC 6117.01 (B) as a property deed restriction and which provides for long-term maintenance of stormwater management practices and facilities.
  28. MEMBER COMMUNITY: Any municipal corporation or township that has executed a Memorandum of Understanding with the Commissioners to be included under the LCSMD general stormwater permit.
  29. MAXIMUM EXTENT PRACTICABLE: The level of pollutant reduction that operators of small municipal separate storm sewer systems regulated under 40 C.F.R. Parts 9, 122, 123, and 124, referred to as NPDES stormwater Phase II, must meet. (OEPA, NPDES Permit #OHQ000001).
  30. MS4: Municipal separate storm sewer system which means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that are:
    - Owned or operated by the federal government, state, municipality, township, county, district, or other public body (created by or pursuant to state or federal law) including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or a designated and approved management agency under section 208 of the act that discharges into surface waters of the state; and
    - Designed or used for collecting or conveying solely stormwater,
    - Which is not a combined sewer, and

## SECTION I – GENERAL

- Which is not a part of a publicly owned treatment works. (OEPA, NPDES Permit #OHQ000001 and #OHC000002).
31. NPDES: National Pollutant Discharge Elimination System. A regulatory program in the Federal Clean Water Act that prohibits the discharge of pollutants into surface waters of the United States without a permit.
  32. NONSTRUCTURAL STORMWATER MANAGEMENT PRACTICE: Stormwater runoff control and treatment methods that use natural processes to control runoff and/or reduce pollution levels.
  33. OWNER/OPERATOR: Any individual, corporation, firm, trust, commission, board, public or private partnership, joint venture, agency, unincorporated association, municipal corporation, county or state agency, the federal government, other legal entity, or an agent thereof and acting as either the owner of the overall construction site or on the owner's behalf.
  34. PERMANENT STABILIZATION: All soil disturbing activities at the site have been completed and a uniform perennial vegetative cover with a density of at least 80% coverage for the area has been established or equivalent stabilization practices, such as the use of mulches or geotextiles, have been employed.
  35. POLLUTANT: Anything that causes or contributes to pollution. Pollutants may include, but are not limited to, sediment, soil, construction site wastes, paints, varnishes, solvents, oil and other automotive fluids, non-hazardous liquid and solid wastes, yard wastes, refuse, rubbish, garbage, litter or other discarded or abandoned objects, floatable materials, pesticides, herbicides, fertilizers, hazardous materials, biological and radioactive materials, wastes, sewage, dissolved and particulate metals, animal wastes, and noxious or offensive materials of any kind.
  36. POLLUTION: The placing of any pollutant in any waters of the state that renders such waters harmful or unfavorable to the public health, to animal or aquatic life, to the use of such waters for domestic water supply, to industrial or farm purposes, or to recreational purposes.
  37. POST-DEVELOPMENT: The conditions that exist following the completion of soil disturbing activity in terms of topography, vegetation, land use, and the rate, volume, quality, or direction of stormwater runoff.
  38. PRE-CONSTRUCTION MEETING: Meeting prior to construction among all parties associated with the construction of the project including government agencies, contractors and owners to review agency requirements and plans as approved and submitted.

## SECTION I – GENERAL

39. PRE-DEVELOPMENT: The conditions that exist prior to the initiation of soil disturbing activity in terms of topography, vegetation, land use, and the rate, volume, quality, or direction of stormwater runoff.
40. PROFESSIONAL ENGINEER: A Professional Engineer registered in the State of Ohio with specific education and experience in water resources engineering, acting in conformance with the Code of Ethics of the Ohio State Board of Registration for Engineers and Surveyors.
41. PUBLIC STORM SEWER: A storm sewer provided by or subject to the jurisdiction of the County and as accepted in writing by the County. It may include storm sewers within or outside the County boundaries that provide stormwater sewer service and ultimately discharge into the County storm sewer system even though those storm sewers may not have been constructed with County funds.
42. RECREATIONAL TRAIL: A path that is: distinctly set apart from a roadway, street, or sidewalk; designed for activities such as jogging, walking, hiking, bird-watching, bicycle riding, roller skating, or similar recreational activities not involving the use of motorized vehicles; and not a sidewalk.
43. REDEVELOPMENT: A construction project on land where impervious cover has previously been developed and where the new land use will not increase the runoff coefficient. If the new land use will increase the runoff coefficient, the project is considered to be a new development project rather than a redevelopment project.
44. REGIONAL DRAINAGE FACILITY: A natural or constructed feature that is within the jurisdiction of the LCSMD and collects, conveys, stores or treats surface and stormwater runoff that ultimately drains to Lake Erie, and shall include but not be limited to creeks, rivers, storm sewers and outlets, ponds, detention/retention basins, channels, ditches, lakes and wetlands. A regional drainage facility shall have one or more of the following characteristics:
1. Carries stormwater runoff across public or private lands, serves several private properties, and discharges to Surface Waters of the State.
  2. Serves two (2) or more subdivisions.
  3. Designed to detain or retain substantial stormwater beyond the development in which the facility is contained.
- Catch basins, catch basin laterals, roof drains, gutters, underdrains, stormwater laterals and any other stormwater system appurtenance connecting to the facility are not considered part of the regional drainage facility.
45. RESIDENTIAL DEVELOPMENT: That which is created primarily to house people, including the residential dwellings as well as all attendant portions of the development including lawns, driveways, sidewalks, garages, and access streets.

## SECTION I – GENERAL

- Residential development includes single family, multi-family, apartments, and trailer parks.
46. **RIPARIAN AREA:** Land adjacent to any brook, creek, river, or stream having a defined bed and bank that, if appropriately sized, helps to stabilize stream banks, limit erosion, reduces flood size flows, and/or filters and settles out runoff pollutants, or performs other functions consistent with the purposes of these Rules and Regulations.
  47. **RIPARIAN OR WETLAND SETBACK:** The real property adjacent to a water resource on which soil disturbing activities are limited, all as defined by the Lake County Subdivision Code, the LCSMD Member Community's Riparian/Wetland Setback Regulation, or these Rules and Regulations whichever is more restrictive.
  48. **RULES AND REGULATIONS:** Rules, regulations, procedures and general specifications governing stormwater systems and natural drainage courses under the jurisdiction of the LCSMD.
  49. **RUNOFF:** The portion of rainfall, melted snow or ice, and irrigation water that flows across the ground surface and is eventually returned to water resources.
  50. **SEDIMENT:** The soils or other surface materials that can be transported or deposited by the action of wind, water, ice, or gravity as a product of erosion.
  51. **SITE:** The entire area included in the legal description of the land on which the land development activity occurs.
  52. **SITE RESTRICTION:** Any physical characteristic that limits the use of a stormwater best management practice.
  53. **SOIL DISTURBING ACTIVITY:** Clearing, grading, excavating, filling, or other alteration of the earth's surface where natural or human made ground cover is destroyed and that may result in, or contribute to, increased stormwater quantity and/or decreased stormwater quality.
  54. **STABILIZATION:** The use of Best Management Practices that reduce or prevent soil erosion by stormwater runoff, trench dewatering, wind, ice, gravity, or a combination thereof.
  55. **STORMWATER MANAGEMENT PLAN (SMP):** The written document and plans meeting the requirements of these Rules and Regulations that sets forth the plans and practices to minimize stormwater runoff from a development area, to safely convey or temporarily store and release post-development runoff at an allowable rate to minimize flooding and stream bank erosion, and to protect or improve stormwater quality and stream channels.

## SECTION I – GENERAL

56. STORMWATER MANAGEMENT PROGRAM: A comprehensive program to manage the quality of stormwater discharged from the municipal separate storm sewer system. (OEPA, NPDES Permit #OHQ000001).
57. STRUCTURAL STORMWATER MANAGEMENT PRACTICE: Any constructed facility, structure, or device that provides storage, conveyance, and/or treatment of stormwater runoff.
58. SURFACE WATERS OF THE STATE: All streams, lakes, reservoirs, ponds, marshes, wetlands, or other waterways which are situated wholly or partly within the boundaries of the State except those private waters which do not combine or affect a junction with surface water. Waters defined as sewerage systems, treatment works, or disposal systems in Section 6111.01 of the ORC are not included. (ORC 6111.01 (H). OEPA, NPDES Permit #OHQ000001 and #OHC000002).
59. SWALE: A structural stormwater management practice designed to convey stormwater.
60. TYPE II DISTRIBUTION: A rainfall type curve as established in the "United States Department of Agriculture, Soil Conservation Service, Technical Paper 149, published 1973". The Type II curve is applicable to all of Ohio and represents the most intense storm pattern.
61. WATER RESOURCE: Any public or private body of water, including wetlands; the area within the ordinary high water level of lakes and ponds; as well as the area within the ordinary high water level of any brook, creek, river, or stream having a defined bed and bank (either natural or artificial) which confines and conducts continuous or intermittent flow. Per this definition, a ditch with a defined bed and bank is a water resource.
62. WATERCOURSE: A channel in which a flow of water occurs, either continuously or intermittently.
63. WATERSHED: The total drainage area contributing stormwater runoff to a single point.
64. WATER QUALITY MANAGEMENT: The stormwater standards and duties established under the Clean Water Act, 33 U.S.C. 1251 et. seq., parallel state law regulating the discharge of pollutants, and implementing regulations.
65. WATER QUANTITY MANAGEMENT: Stormwater duties and practices to abate peak flood flows during storm events pursuant to Rules and Regulations as implemented and enforced by the LCSMD.
66. WETLAND: Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal

## SECTION I – GENERAL

circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, and similar areas (40 CFR 232, as amended).

### 1.03 APPLICABILITY

- A. These Rules and Regulations apply to all parcels, lands, waters, and soil disturbing activities within the boundaries of the unincorporated Member Communities in the LCSMD and used or being developed, either wholly or partially, for new or relocated projects involving highways and roads; subdivisions or larger common plans of development; industrial, commercial, institutional, or residential projects; building activities on farms; redevelopment activities; grading; and all other uses that are not specially exempted.
- B. These Rules and Regulations shall also apply to all residential, commercial, industrial, or institutional facilities responsible for discharges to the MS4 and on any lands within the jurisdiction of the LCSMD, except for those discharges generated by the activities detailed in Section V of these Rules and Regulations. These Rules and Regulations prohibit illicit discharges and illegal connections to the MS4 as detailed in Section V.
- C. A Stormwater Management Plan shall be developed and implemented for soil disturbing activities meeting either of the following criteria:
  - 1. Disturbing one (1) or more acres of total land, or less than one (1) acre if part of a larger common plan of development or sale disturbing one (1) or more acres of total land, and on which any regulated activity of Section 1.03 (A) is proposed.
  - 2. Soil disturbing activity of any size that, as determined by the LCSMD, is likely to result in stormwater runoff that exceeds the design capacity of existing drainage facilities, storage facilities, or receiving water and that may cause surcharging and increase flooding risks; causes undue channel erosion; increases water pollution by scouring or the transportation of particulate matter; or endangers downstream property on a surface water.
- D. A Stormwater Management Plan is not required for the following:
  - 1. Linear construction projects, such as pipeline or utility line installations, which do not result in the installation of impervious surface as determined by the LCSMD. Such projects must be designed to minimize the number of stream crossings and the width of disturbance.
  - 2. Stormwater management facilities to be constructed or measures to be undertaken by the LCSMD or a Member Community when the LCSMD has determined that a Stormwater Management Plan is not required.



## SECTION I – GENERAL

- E. Comity. Public entities, including the State of Ohio, Lake County, and the unincorporated Member Communities in the LCSMD shall comply with these Rules and Regulations for roadway projects initiated after March 10, 2006 and, to the maximum extent practicable, for projects initiated before that time. These Rules and Regulations do not apply to activities regulated by, and in compliance with, the Ohio Agricultural Sediment Pollution Abatement Rules.

### 1.04 ALTERNATIVE ACTIONS

- A. When the LCSMD determines that site restrictions compromise the intent of these Rules and Regulations, off-site alternatives may be used that result in an improvement of water quality and a reduction of stormwater quantity. Such alternatives shall meet the following:
1. Shall achieve the same level of stormwater management that would be achieved by the on-site controls required under these Rules and Regulations.
  2. Implemented in the drainage area of the proposed development project to the maximum extent practicable.
- B. Alternative actions must be approved by the LCSMD prior to use. Alternative actions may include, but are not limited to, the following:
1. Where the LCSMD waives all or part of the minimum on-site stormwater management requirements, the LCSMD may require the applicant to pay a fee in an amount determined by with the LCSMD. In setting the fee, the LCSMD shall consider an equitable distribution of the cost for land, engineering design, construction, and maintenance of the on-site or regional stormwater management practices needed to serve the land development.
  2. Implementation of off-site structural or nonstructural stormwater management practices and/or retrofits of existing practices to increase quality and quantity control. The LCSMD may only approve off-site management measures provided that all of the following are met:
    - a. The LCSMD determines that the post-construction runoff is covered by an approved Stormwater Management Plan that contains management requirements consistent with the purpose and intent of these Rules and Regulations.
    - b. The off-site facility meets all of the following conditions:
      - 1) The facility is in place;
      - 2) The facility is designed and adequately sized to provide a level of stormwater control equal to or greater than that which would be afforded by on-site practices meeting the requirements of these Rules and Regulations; and

## SECTION I – GENERAL

- 3) The facility has a legally obligated entity responsible for its long-term operation and maintenance.
3. Stream, floodplain, or wetland restoration.
4. Acquisition of conservation easements on protected open space significantly contributing to stormwater control such as wetland complexes.

### 1.05 STORMWATER ADVISORY BOARD

- A. The Stormwater Advisory Board shall consist of representatives from cities, townships, villages, and at-large representatives and be appointed to three-year terms by the Board of Lake County Commissioners. The Board shall meet quarterly with LCSMD in an advisory capacity and/or for further review of the application of the Rules and Regulations.
- B. The size and composition of the Stormwater Advisory Board shall be at the discretion of the Board of Lake County Commissioners.
- C. Any applicant, other citizen, or property owner within a member community of the LCSMD may submit suggestions to the LCSMD regarding the content of these Rules and Regulations that will be considered by the Stormwater Advisory Board.

### 1.06 RESPONSIBILITY FOR ADMINISTRATION

The LCSMD shall administer, implement, and enforce the provisions of these Rules and Regulations. The LCSMD may contract and/or consult with the Lake County Board of Health to conduct inspections and monitoring and to assist with enforcement actions under sections V and VI for the detection and elimination of illicit discharges and illegal connections; the Lake County Soil and Water Conservation District for review and comment on Stormwater Management Plans; and with other agencies or entities as LCSMD determines necessary.

### 1.07 DISCLAIMER OF LIABILITY

- A. Compliance with the provisions of these Rules and Regulations shall not relieve any person from responsibility for damage to any person otherwise imposed by law. The provisions of these Rules and Regulations are promulgated to promote the health, safety, and welfare of the public and are not designed for the benefit of any individual or any particular parcel of property.
- B. By finding a Stormwater Management Plan in compliance with these Rules and Regulations, the LCSMD does not accept responsibility for the design, installation, or operation and maintenance of structural or nonstructural stormwater management practices.

### 1.08 CONFLICTS SEVERABILITY, NUISANCE & RESPONSIBILITY

## SECTION I – GENERAL

- A. Where these Rules and Regulations are in conflict with other provisions of law or regulation, the most restrictive provisions, as determined by the LCSMD, shall prevail. If any clause, section, or provision of these Rules and Regulations is declared invalid or unconstitutional by a court of competent jurisdiction, the validity of the remainder shall not be affected thereby.
- B. These Rules and Regulations shall not be construed as authorizing any person to maintain a nuisance on their property, and compliance with the provisions of these Rules and Regulations shall not be a defense in any action to abate such a nuisance.
- C. Failure of the LCSMD to observe or recognize hazardous or unsightly conditions or to recommend corrective measures shall not relieve the site owner from the responsibility for the condition or damage resulting there from, and shall not result in the LCSMD, its officers, employees, or agents being responsible for any condition or damage resulting there from.

### 1.09 COMPLIANCE WITH LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS

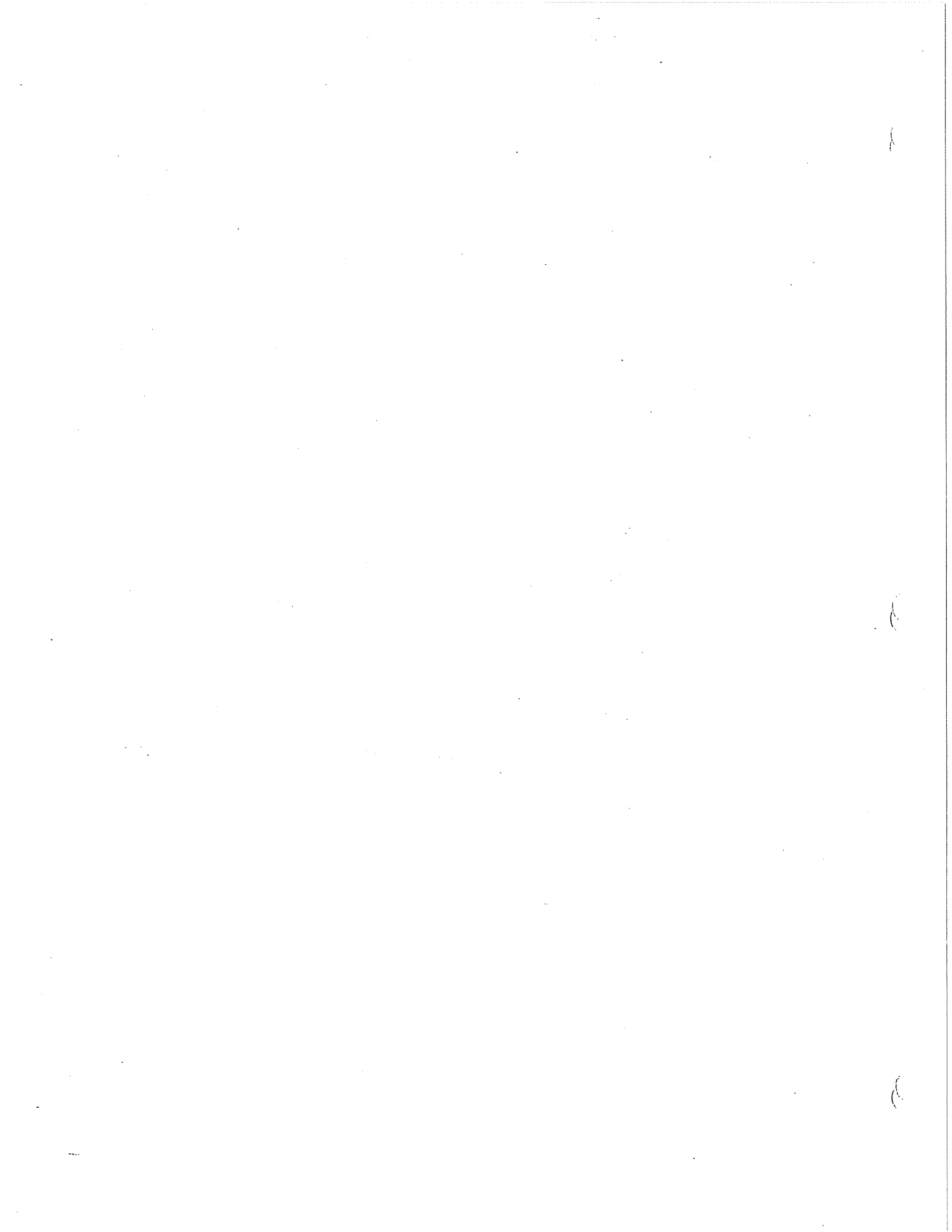
- A. Stormwater Management Plans issued in accordance with these Rules and Regulations do not relieve the site owner of responsibility for obtaining all other necessary permits and/or approvals from federal, state, and/or local agencies. If requirements vary, the most stringent shall be followed.
- B. Stormwater Management Plans shall be accompanied by other permits and documentation relevant to the project, including, but not limited to, those listed below. No soil disturbing activity shall begin before the owner/operator has demonstrated compliance with all necessary state and federal laws.
  - 1. Proof of compliance with the OEPA NPDES Permits authorizing stormwater discharges associated with construction activity or the most current version thereof: Proof of compliance shall be, but is not limited to, a copy of the applicant's Notice of Intent, a copy of the Ohio EPA Director's Authorization Letter for the NPDES Permit, or a letter from the site owner certifying and explaining why the NPDES Permit is not applicable.
  - 2. Proof of compliance with Section 404 of the Clean Water Act, administered by the U.S. Army Corps of Engineers, relating to waters of the United States under its jurisdiction: Proof of compliance shall be, but is not limited to, a copy of the U.S. Army Corps of Engineers Individual Permit, if an Individual Permit is required for the development project, showing project approval and any restrictions that apply to site activities. If an Individual Permit is not required, the site owner shall submit proof of review under the U.S. Army Corps of Engineer's Nationwide Permit Program and proof of compliance, as required, by one of the following:

## SECTION I – GENERAL

- a. A letter from the site owner certifying that a qualified professional has surveyed the site and found no waters of the United States.
  - b. A letter from the site owner certifying and demonstrating compliance with the applicable Nationwide Permit, and any applicable State of Ohio conditions, for projects not requiring pre-construction notification.
  - c. A letter from the U.S. Army Corps of Engineers certifying that the proposed work is authorized by a Nationwide Permit and a site plan showing that any proposed fill of waters of the United States conforms to the general and specific conditions specified in the applicable Nationwide Permit. Wetlands and other waters of the United States shall be delineated by protocols accepted by the U.S. Army Corps of Engineers at the time an application is made under this regulation.
3. Proof of compliance with the Ohio Dam Safety Law administered by ODNR Division of Water: Proof of compliance shall be, but is not limited to, a copy of the ODNR Division of Water permit number, a copy of the project approval letter from the ODNR Division of Water, or a letter from the site owner explaining why the Ohio Dam Safety Law is not applicable.
  4. Proof of compliance with Section 401 of the Clean Water Act: Proof of compliance shall be a copy of the Ohio EPA Water Quality Certification application tracking number, public notice, project approval, a letter from the U.S. Army Corp of Engineers indicating that the proposed work conforms to the Water Quality Certification conditions associated with the Nationwide Permit authorizing the work, or a letter from the site owner certifying that a qualified professional has surveyed the site and determined that Section 401 of the Clean Water Act is not applicable. Wetlands, and other waters of the United States, shall be delineated by protocols accepted by the U.S. Army Corps of Engineers at the time of application of these Rules and Regulations.
  5. Proof of compliance with Ohio EPA Isolated Wetland Permit: Proof of compliance shall be a copy of Ohio EPA's Isolated Wetland Permit application tracking number, public notice, project approval, or a letter from the site owner certifying that a qualified professional has surveyed the site and determined that Ohio EPA's Isolated Wetlands Permit is not applicable. Isolated wetlands shall be delineated by protocols accepted by the U.S. Army Corps of Engineers at the time of application of these Rules and Regulations.
  6. Proof of compliance with the Lake County Flood Damage Prevention Regulations: Proof of compliance shall be, but is not limited to, a copy of the applicant's submittal to the Lake County Floodplain Administrator, or a letter from the site

## SECTION I – GENERAL

owner certifying and explaining why the Flood Damage Prevention Regulations are not applicable.



## SECTION II – STORMWATER MANAGEMENT PLAN REQUIREMENTS

### 2.01 CONTENT OF PLAN AND CALCULATIONS

- A. Stormwater Management Plan Required: The applicant shall develop a Stormwater Management Plan describing how the quantity and quality of stormwater will be managed after construction is complete for every discharge from the site and/or into a water resource. The Stormwater Management Plan will illustrate the type, location, and dimensions of every structural and non-structural stormwater management practice incorporated into the site design, and the rationale for their selection. The rationale must address how these stormwater management practices will address flooding within the site as well as flooding that may be caused by the development upstream and downstream of the site. The rationale will also describe how the stormwater management practices minimize impacts to the physical, chemical, and biological characteristics of on-site and downstream water resources.
- B. Preparation by Professional Engineer: The Stormwater Management Plan shall be prepared by a Registered Professional Engineer and include supporting calculations, plan sheets, design details, and water resource delineations as applicable. To the extent necessary, as determined by the LCSMD, a site survey shall be performed by a Registered Professional Surveyor to establish boundary lines, measurements, or land surfaces.
- C. LCSMD Procedures: The Stormwater Management Plan shall be designed in accordance with good engineering practice, the Ohio EPA General Construction Permit (#OHC000002), the LCSMD's Stormwater Pollution Prevention Plan Guidance Manual, the LCSMD's Best Management Practices Manual, Ohio's Rainwater and Land Development Manual, and any other approved best management practices the LCSMD recommends. The LCSMD shall make the final determination of whether the practices proposed in the Stormwater Management Plan meet the requirements of these Rules and Regulations.
- D. A copy of the approved Stormwater Management Plan, or approval letter from LCSMD, shall be posted in a clear and visible location at the development site at all times.
- E. Contents of Stormwater Management Plan: The Stormwater Management Plan shall contain an application, narrative report, construction site plan sheets, inspection and maintenance agreement, and a site description with the following information provided:
1. Site description:
    - a. A description of the nature and type of the construction activity (e.g. residential, shopping mall, highway, etc.).
    - b. Total area of the site and the area of the site that is expected to be disturbed (i.e. grubbing, clearing, excavation, filling or grading, including off-site borrow areas).
    - c. A description of prior land uses at the site.

## SECTION II – STORMWATER MANAGEMENT PLAN REQUIREMENTS

- d. An estimate of the impervious area and percent of imperviousness created by the soil-disturbing activity at the beginning and at the conclusion of the project.
  - e. Existing data describing the soils throughout the site, including the soil series and association, hydrologic soil group, porosity, infiltration characteristics, depth to groundwater, depth to bedrock, and any impermeable layers.
  - f. If available, the quality of any known pollutant discharge from the site such as that which may result from previous contamination caused by prior land uses.
  - g. The location and name of the immediate water resource(s) and the first subsequent water resource(s).
  - h. The aerial (plan view) extent and description of water resources at or near the site that will be disturbed or will receive discharges from the project.
2. Site map showing:
- a. Water resource locations and associated setbacks on or within 200 feet of the site. This must include the boundaries of water resources, and first subsequent named receiving water resources, the applicant intends to fill or relocate for which the applicant is seeking approval from the Army Corps of Engineers and/or Ohio EPA. Water resource boundaries must be based on a water resource delineation done in accordance with protocols acceptable to the U.S. Army Corps of Engineers at the time of application of these Rules and Regulations and this delineation must accompany the Stormwater Management Plan submittal.
  - b. The location of any in-stream activities including stream crossings.
3. Contact information: Company name and contact information of the company's statutory agent and principal place of business as well as contact name, addresses, and phone numbers for the following:
- a. The Professional Engineer who prepared the Stormwater Management Plan.
  - b. The site owner.
4. Phase, if applicable, of the overall development plan.
5. List of subplot numbers if project is a subdivision.
6. Ohio EPA NPDES Permit Number and other applicable state and federal permit numbers, if available, or status of various permitting requirements if final approvals have not been received.
7. Location, including complete site address, subplot number, and permanent parcel number if applicable.



## SECTION II – STORMWATER MANAGEMENT PLAN REQUIREMENTS

8. Location of any easements or other restrictions placed on the use of the property as well as the ownership of the easement.
9. A site plan sheet showing:
  - a. The location of each proposed post-construction stormwater management practice.
  - b. The geographic coordinates (latitude and longitude) of the site AND each proposed practice.
  - c. Limits of soil-disturbing activity on the site.
  - d. Soils types for the entire site, including locations of unstable or highly erodible soils.
  - e. Existing and proposed one-foot (1') contours. This must include a delineation of drainage watersheds expected before, during, and after major grading activities as well as the size of each drainage watershed in acres. Large off-site areas that drain to the proposed site may be delineated and shown on separate drawings with an appropriate scale and contour interval. For drainage areas over 100 acres, a 7.5 minute USGS map (1"=2000', 10-foot contours) is required. For off-site areas less than 100 acres, a drainage map with 2-foot contours and a scale of 1"=200' to 1"=500' is required.
  - f. Existing and planned locations of buildings, roads, parking facilities, and utilities.

It is preferred that the entire site be shown on one plan sheet to allow a complete view of the site during plan review. If a smaller scale (smaller than 1"=30') is used to accomplish this, separate sheets providing an enlarged view of areas on individual sheets should also be provided.

10. Calculations required: Projected stormwater runoff flows, volumes, and timing into and through all structural and nonstructural stormwater management practices, and the underlying assumptions and hydrologic and hydraulic methods and parameters, under pre- and post-development land use conditions, for flood control, channel protection, and water quality as required in Sections III and IV of these Rules and Regulations. Calculations shall include critical storm determination and demonstrate that the runoff from upper watershed areas has been considered in the calculations. The calculation results shall be tabulated and included in the drainage calculations. The table shall include as applicable, but is not limited to, peak inflow, peak outflow, maximum water surface elevation, runoff volume, drain time, and water quality volume.

## SECTION II – STORMWATER MANAGEMENT PLAN REQUIREMENTS

11. List of all contractors and subcontractors before construction: Prior to construction or before the pre-construction meeting, provide the list of all contractors and subcontractors names, addresses, and phone numbers involved with the implementation of the Stormwater Management Plan including a written document containing signatures of all parties as proof of acknowledgment that they have reviewed and understand the requirements and responsibilities of the Stormwater Management Plan.
12. Existing and proposed drainage patterns: The location and description of existing and proposed drainage patterns and structural and nonstructural stormwater management practices, including any related stormwater management practices beyond the development area and the larger common development area.
13. For each structural and nonstructural stormwater management practice to be employed on the development area, include the following:
  - a. Location and size, including detail drawings, maintenance requirements during and after construction, and design calculations, all where applicable.
  - b. Final site conditions including stormwater inlets and permanent stormwater management practices. Details of stormwater management practices shall be drawn to scale and shall show volumes and sizes of contributing drainage areas.
  - c. Any other stormwater management practices necessary to meet the design criteria in these Rules and Regulations and any supplemental information requested by the LCSMD.
14. Inspection and Maintenance Agreement required. An Inspection and Maintenance Agreement for all non-structural and structural stormwater management practices shall be entered into by the LCSMD and the applicant, shall be in compliance with these Rules and Regulations, and shall be acceptable to the LCSMD. The Inspection and Maintenance Agreement shall be completed in accordance with the LCSMD's Maintenance Plan and Budget document requirements. The LCSMD and the applicant shall have the following responsibilities for Inspection and Maintenance Agreements:
  - a. Applicant Responsibilities
    - i. Identify the stormwater facilities and designate the drainage area served by the facilities.
    - ii. Provide a schedule for regular maintenance of each aspect of the stormwater management system consistent with the approved Stormwater Management Plan.

## SECTION II – STORMWATER MANAGEMENT PLAN REQUIREMENTS

- iii. Identify the landowner(s), organization, or municipality responsible for long-term maintenance of the stormwater management practices. This shall include regular inspections.
  - iv. Identify the method of funding long-term maintenance and inspections of all stormwater management practices.
  - v. Release the LCSMD from all damages, accidents, casualties, occurrences, or claims that might arise or be asserted against the LCSMD from the construction, presence, existence, or maintenance of the stormwater management practices.
- b. LCSMD Responsibilities
- i. Conduct inspections of stormwater management practices as the LCSMD determines necessary to verify that the practices are being maintained and operated in accordance with these Rules and Regulations. The LCSMD, its employees and its assignees shall not be denied access for the purpose of making surveys or inspections.
  - ii. Maintain public records of the results of the site inspections, inform the landowner, organization, or municipality responsible for maintenance of the inspection results, and specifically indicate any corrective actions required to bring the stormwater management practice into proper working condition.
  - iii. If LCSMD notifies the landowner, organization, or municipality designated as responsible for maintenance of the maintenance problems that require correction, the specific corrective actions shall be taken within a reasonable time frame as determined by the LCSMD.
  - iv. The LCSMD is authorized to perform the corrective actions identified in the inspection report if the landowner, organization, or municipality responsible for maintenance does not make the required corrections in the specified time period. The LCSMD shall enter the amount due on the tax rolls and collect the money as a special charge against the property pursuant to Section 5705 of the Ohio Revised Code as amended.

### 2.02 PRE-APPLICATION MEETING

- A. The applicant shall attend a Pre-Application Meeting with, and scheduled by, the LCSMD if one of the following applies:
1. The land development activity exceeds five acres, or

## **SECTION II – STORMWATER MANAGEMENT PLAN REQUIREMENTS**

2. The LCSMD determines that a pre-application meeting is necessary due to the nature of the development or the proximity of water resources.
- B. The purpose of the Pre-Application Meeting is to discuss the proposed project, review the requirements of these Rules and Regulations, identify unique aspects of the project that must be addressed during the review process, and establish a preliminary review and approval schedule for the Stormwater Management Plan. The LCSMD may choose to combine this Pre-Application Meeting with other required meetings.

### **2.03 SUBMITTAL OF PRELIMINARY AND FINAL STORMWATER MANAGEMENT PLANS AND APPROVAL PROCESS**

- A. Prior to submitting the Final Stormwater Management Plan, two sets of Preliminary Stormwater Management Plans shall be submitted for review and discussion. The plans will be used by the LCSMD to determine if the layout of the site includes sufficient space for stormwater management and if the proposed practices are sufficient to control runoff and provide water quality. The preliminary submittal should include preliminary calculations showing the storage volume approximation for both water quality and quantity.
- D. Two sets of the Final Stormwater Management Plan, necessary data, and applicable fees required by these Rules and Regulations shall be submitted to the LCSMD as follows:
  1. For subdivisions: After the approval of the preliminary plat and prior to the approval of improvement plans or drawings by the Lake County Planning Commission.
  2. For other construction projects: Concurrently with the submittal of construction drawings to the County Engineer.
- E. The LCSMD shall review the Final Stormwater Management Plan for conformance with the provisions of these Rules and Regulations, and approve or return for revisions with comments and recommendations for revisions, within twenty (20) business days after receipt of the Final Stormwater Management Plan as described above. A Final Stormwater Management Plan rejected because of deficiencies shall receive a narrative report stating specific problems and the procedures for filing a revised Plan. At the time of receipt of a revised Final Stormwater Management Plan, another twenty-one (21) day review period shall begin.
- F. Approval Necessary: Land clearing/grubbing and soil-disturbing activities shall not begin and building permits shall not be issued without an approved Final Stormwater Management Plan.
- G. Sublots Will Not Proceed: Building permits for individual sublots will not be issued unless the larger common plan of development or sale containing the subplot is in compliance with these Rules and Regulations.
- H. Approved Stormwater Management Plans shall remain valid for two years from the date of approval.

## SECTION II – STORMWATER MANAGEMENT PLAN REQUIREMENTS

- I. Throughout these Rules and Regulations "Stormwater Management Plan" shall refer to the Final Stormwater Management Plan developed under the procedures outlined in this Section.

### 2.04 AS-BUILT REQUIREMENTS

- A. The applicant shall provide an As-Built Survey and drawings of all structural and nonstructural stormwater management practices completed under the Stormwater Management Plan.
- B. The LCSMD reserves the authority to require the resubmittal of any component of the Stormwater Management Plan as the result of LCSMD findings in an As-Built Inspection.
- C. The LCSMD reserves the authority to require the applicant to correct any nonstructural and structural stormwater management practices that do not conform with the approved Stormwater Management Program.

### 2.05 EASEMENTS

- A. Stormwater easements: Access to structural and nonstructural stormwater management practices as required by the LCSMD for inspections, surveys, and/or maintenance shall be secured by easements. The following conditions shall apply to easements to stormwater management practices:
  12. Stormwater easements shall be included in the Inspection and Maintenance Agreement submitted with the Stormwater Management Plan and recorded on the final plat.
  13. Unless otherwise required by the LCSMD, access easements between a public right-of-way and a stormwater management practice shall be no less than 25-feet wide. The easement shall also incorporate the entire practice plus an additional 25-foot wide band around the perimeter of the stormwater management practice.
  14. The easement shall be graded and/or stabilized as necessary to allow maintenance equipment to access and maneuver around and within each facility, as defined in the Inspection and Maintenance Agreement for the site.
  15. Easements to/for stormwater management practices shall be restricted against the planting in said easement of trees, shrubbery, or other woody growth except as permitted by the LCSMD; against the construction therein of buildings, fences, walls, and other structures that may obstruct the free flow of stormwater and the passage of inspectors and maintenance equipment; and against the changing of final grade from that described by the final grading plan approved by the LCSMD. Any re-grading and/or obstruction placed within a maintenance easement may be removed by the LCSMD at the property owners' expense.

## **SECTION II – STORMWATER MANAGEMENT PLAN REQUIREMENTS**

- B. Easements shall be approved by the LCSMD prior to approval of a final plat or as part of a final plat and shall be recorded with the Lake County Recorder and on all property deeds.

### **2.06 AREAS ADJACENT TO PROTECTED WATER RESOURCES**

Areas adjacent to protected water resources, as required by applicable state, county, or local regulations, shall be depicted on the Stormwater Management Plan and adequately protected during soil disturbing activities, all as determined by the LCSMD.

## SECTION III – STORMWATER DISCHARGE QUANTITY STANDARDS

### 3.01 GENERAL

A. All components of the stormwater system, including structural and nonstructural stormwater management practices for storage, treatment and control, and conveyance facilities, shall be designed to prevent structure flooding during the 100-year, 24-hour storm event; to maintain predevelopment runoff patterns, flows, and volumes; and to meet the following criteria:

1. Integrated practices that minimize degradation of water resources. The stormwater management practices shall function as an integrated system that controls flooding and minimizes the degradation of the physical, biological, and chemical integrity of the water resources receiving stormwater discharges from the site. Acceptable practices shall:

- a. Not disturb protected areas adjacent to water resources unless in compliance with these Rules and Regulations, the Lake County Subdivision Regulations, and/or Community Riparian Setback Ordinances.
- b. Maintain predevelopment hydrology and infiltration recharge on as much of the site as practicable as determined by the LCSMD.
- c. Compensate for increased runoff volumes caused by new impervious surfaces and soil compaction by reducing stormwater peak flows to less than predevelopment levels based on the critical storm method.

Stormwater management practices that meet the criteria in this regulation, and additional criteria required by the LCSMD shall comply with this regulation.

Applicants may propose alternative practices if they demonstrate to the satisfaction of the LCSMD that these practices also meet the above criteria.

2. Practices designed for final use: Stormwater management practices shall be designed to achieve the stormwater management objectives of this regulation, to be compatible with the proposed post-construction use of the site, to protect the public health, safety, and welfare, and to function safely with minimal maintenance.

3. Stormwater management for all lots: Areas developed for a subdivision shall provide stormwater management for the development of all subdivided lots. Each separate lot must fit into the entire subdivision plan. This shall include provisions for lot grading and drainage improvements that prevent structure flooding during the 100-year, 24-hour storm; and maintain, to the extent practicable, the predevelopment runoff patterns, volumes, and peaks from the lot.

4. Stormwater facilities in water resources: Stormwater management practices or soil disturbing activities in support of, shall not be constructed in water resources unless the applicant provides proof of compliance all appropriate permits from the Ohio EPA, the U.S. Army Corps, and other applicable federal, state, and local

### SECTION III – STORMWATER DISCHARGE QUANTITY STANDARDS

agencies, and the activity is in compliance with the Lake County Erosion and Sediment Control Rules and the Lake County Stormwater Management Rules and Regulations all as determined by the LCSMD.

5. Stormwater ponds and surface conveyance channels: All stormwater ponds and surface conveyance designs must provide a minimum of one (1) foot freeboard above the projected peak stage within the facility during the 100-year, 24-hour storm. When designing stormwater ponds and conveyance channels, the applicant shall consider public safety as a design factor and alternative designs must be implemented where site limitations would preclude a safe design.
  6. Exemption: The site where soil-disturbing activities are conducted shall be exempt from the stormwater quantity and quality requirements of Sections 3 and 4 of these Rules and Regulations if it can be shown to the satisfaction of the LCSMD that the site is part of a larger common plan of development where the stormwater management requirements for the site are provided by an existing stormwater management practice, or if the stormwater management requirements for the site are provided by practices defined in a regional or local stormwater management plan approved by the LCSMD.
  7. Maintenance: All stormwater management practices shall be maintained in accordance with Inspection and Maintenance Agreements approved by the LCSMD as detailed in Section 2.01 when applicable.
  8. Responsibility: Unless otherwise required by the LCSMD, stormwater management practices serving multiple lots in subdivisions shall be on a separate lot held and maintained by an entity of common ownership or, if compensated by the property owners, by the LCSMD. Practices serving single lots shall be placed on these lots, protected within an easement, and maintained by the property owner.
  9. Preservation of Existing Natural Drainage: Practices that preserve the existing natural drainage shall be used to the maximum extent practicable. Such practices may include minimizing site grading and compaction, protecting water resources, riparian areas and existing vegetation, and maintaining unconcentrated stormwater runoff to and through these areas.
- B. Off-site stormwater discharges:
1. Quantity: Off-site stormwater runoff that discharges to or across the applicant's development site shall be conveyed through the stormwater conveyance system planned for the development site at its existing peak flow rates during each design storm.
  2. Quality: Off-site flows shall be diverted around stormwater quality control facilities or, if this is not possible, the stormwater quality control facility shall be sized to treat the off-site flow. Stormwater Management Plans will not be approved until it



## **SECTION III – STORMWATER DISCHARGE QUANTITY STANDARDS**

is demonstrated to the satisfaction of the LCSMD that off-site runoff will be adequately conveyed through the development site in a manner that does not exacerbate upstream or downstream flooding and erosion.

- C. Velocity dissipation: Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall to provide non-erosive flow velocity from the structure to a water resource so that the natural physical and biological characteristics and functions of the water resource are maintained and protected.

### **3.02 OPEN CHANNELS**

Unless otherwise allowed by the LCSMD, drainage tributary to structural and nonstructural stormwater management practices shall be provided by an open channel with landscaped banks and designed to carry within these banks the 10-year, 24-hour storm runoff from upstream contributory areas

### **3.03 OPEN DRAINAGE SYSTEMS**

Open drainage systems shall be preferred on all new development sites to convey stormwater where feasible. Storm sewer systems shall be allowed only when the site cannot be developed at densities allowed under applicable zoning or where the use of an open drainage system affects public health or safety, all as determined by the LCSMD. The criteria contained in the Lake County Engineer's Standards and Specifications for Subdivisions in Unincorporated Areas shall be used to design storm sewer systems when necessary.

### **3.04 ROADSIDE DITCHES**

Roadside ditches shall be designed such that the depth of flow during the 10-year storm does not exceed one foot below the edge of pavement.

### **3.05 STORM SEWERS**

Storm sewers shall be designed in accordance with the Lake County Engineer's Standards and/or Specification for Subdivisions in Unincorporated Areas.

### **3.06 CULVERTS AND BRIDGES**

Culverts and Bridges shall be designed in accordance with the Lake County Engineer's Standards and/or Specifications for Subdivisions in Unincorporated Areas.

### **3.07 DETENTION/RETENTION FACILITIES**

Detention/Retention facilities shall be designed in accordance with the Lake County Engineer's Standards and Specification for Subdivisions in Unincorporated Areas.

### **3.08 STORMWATER MANAGEMENT ON REDEVELOPMENT PROJECTS**

Stormwater Management Plans for redevelopment projects shall reduce existing site impervious areas by at least 20 percent or treat 20 percent of the Water Quality volume (WQv) or a combination of both. When a combination of impervious area reduction and stormwater quality management practices is used, the combined area shall equal or exceed 20 percent of the site. Where conditions prevent impervious area reduction or on-site stormwater management practices

### **SECTION III – STORMWATER DISCHARGE QUANTITY STANDARDS**

for redevelopment projects, practical alternatives as detailed in Section 1.04 may be approved by the LCSMD.

#### **3.09 OVERLAND FLOODING FOR 100-YEAR EVENT**

- A. Overland flood routing paths shall be used to convey stormwater runoff from the 100-year, 24-hour storm event to an adequate receiving water resource, or structural or nonstructural stormwater management practice, such that the runoff is contained within the drainage easement for the flood routing path and does not cause flooding of buildings or related structures.
- B. The peak 100-year water surface elevation along flood routing paths shall be at least one foot below the finished grade elevation at the structure. When designing the flood routing paths, the conveyance capacity of the site's storm sewers shall be taken into consideration.

## SECTION IV – STORMWATER DISCHARGE QUALITY STANDARDS

### 4.01 GENERAL

- A. Direct runoff to a BMP: The site shall be designed to direct runoff from areas disturbed during construction to one or more of the following stormwater best management practices. These practices are listed in Table 3 of this regulation:
1. Extended conveyance facilities that slow the rate of stormwater runoff; filter and biodegrade pollutants in stormwater; promote infiltration and evapotranspiration of stormwater; and discharge the controlled runoff to a water resource.
  2. Extended detention facilities that detain stormwater; settle or filter particulate pollutants; and release the controlled stormwater to a water resource.
  3. Infiltration facilities that retain stormwater; promote settling, filtering, and biodegradation of pollutants; and infiltrate all captured stormwater into the ground based on the findings of the soil engineering report prepared for the site as deemed necessary.
  4. Other BMPs may be approved by the LCSMD if the applicant demonstrates that they satisfactorily meet the objectives of this regulation.

### 4.02 GENERAL CRITERIA FOR BEST MANAGEMENT PRACTICES

- A. Practices chosen must be sized to treat the WQv and to ensure compliance with Ohio Water Quality Standards (OAC Chapter 3745-1). The WQv shall be equal to the volume of runoff from a 0.75 inch rainfall event and shall be determined according to one of the following methods:
1. Through a site hydrologic study approved by the LCSMD that uses continuous hydrologic simulation; site-specific hydrologic parameters, including impervious area, soil infiltration characteristics, slope, and surface routing characteristics; proposed best management practices controlling the amount and/or timing of runoff from the site; and local long-term hourly records, or
  2. Using the following equation:

$$WQ_v = C * P * A / 12$$

where terms have the following meanings:

- WQ<sub>v</sub> = water quality volume in acre-feet  
C = runoff coefficient appropriate for storms less than 1 in.  
P = 0.75 inch precipitation depth  
A = area draining into the stormwater practice, in acres.

Runoff coefficients required by the Ohio Environmental Protection Agency (Ohio EPA) for use in determining the water quality volume are listed in Table 2. Alternatively, the following equation may be used to calculate the runoff coefficient based on the proposed impervious area of the development:

$$C = 0.858i^3 - 0.78i^2 + 0.774i + 0.04.$$

## SECTION IV – STORMWATER DISCHARGE QUALITY STANDARDS

where:

i = fraction of the drainage area that is impervious

**Table 2: Runoff Coefficients Based on the Type of Land Use**

Land Use	Runoff Coefficient
Industrial & Commercial	0.8
High Density Residential (>8 dwellings/acre)	0.5
Medium Density Residential (4 to 8 dwellings/acre)	0.4
Low Density Residential (<4 dwellings/acre)	0.3
Open Space and Recreational Areas	0.2

Where land use will be mixed, the runoff coefficient should be calculated using a weighted average. For example, if 60% of the contributing drainage area to the stormwater treatment structure is Low Density Residential, 30% is High Density Residential, and 10% is Open Space, the runoff coefficient is calculated as follows  $(0.6)(0.3)+(0.3)(0.5)+(0.1)(0.2) = (0.35)$

- B. An additional volume equal to 20% of the WQv shall be incorporated into the stormwater management practice for sediment storage for wet detention basins or extended dry detention basins.
- C. Stormwater quality management practices shall be designed such that the drain time is long enough to provide treatment and protect against downstream bank erosion, but short enough to provide storage available for successive rainfall events as defined in Table 3.

**Table 3: Draw Down Times for Stormwater Management Practices**

Best Management Practice	Drain Time of WQV
Infiltration	24-48 hours
Extended Conveyance (Vegetated Swales, Filter Strips)	*
Extended Detention	
▪ Extended Dry Detention Basins	48 hours
▪ Wet Detention Basins **	24 hours
▪ Constructed Wetlands (above permanent pool)	24 hours
▪ Media Filtration, Bioretention	40 hours

\* Size to pass a hydrograph with a volume equal to the WQv, a duration of 2 hours, and peak rainfall intensity of 1 inch/hour at a depth of no more than 3 inches.

\*\*Provide both a permanent pool and an extended detention volume above the permanent pool, each sized with at least 0.75\*WQv

- D. Each practice shall be designed to facilitate sediment removal, vegetation management, debris control, and other maintenance activities defined in the Inspection and Maintenance Agreement for the site.

### 4.03 SPECIFIC CRITERIA FOR BEST MANAGEMENT PRACTICES

#### A. Additional Criteria for Extended Detention Facilities:

1. The outlet shall be designed to release the bottom 50 percent of the water quality volume in no less than 2/3<sup>rd</sup> of the drain time. A valve shall be provided to drain

## **SECTION IV – STORMWATER DISCHARGE QUALITY STANDARDS**

any permanent pool volume for removal of accumulated sediments. The outlet shall be designed to minimize clogging, vandalism, and maintenance.

2. The basin design shall incorporate the following features to maximize multiple uses, aesthetics, safety, and maintainability:
  - a. Side slopes for dry basins and above the permanent pool for wet basins shall have a run to rise ratio of 4:1 or flatter.
  - b. The perimeter of all permanent pool areas deeper than 4 feet shall be surrounded by an aquatic bench that extends at least 8 feet and no more than 15 feet outward from the normal water edge. The portion of the aquatic bench closest to the shoreline shall have an average depth of 6 inches below the permanent pool to promote the growth of aquatic vegetation. The remainder of the aquatic bench shall be no more than 15 inches below the permanent pool to minimize drowning risk to individuals who accidentally or intentionally enter the basin, and to limit growth of dense vegetation in a manner that allows waves and mosquito predators to pass through the vegetation. The maximum slope of the aquatic bench shall be 10 (H) to 1 (V). The aquatic bench shall be planted with hearty plants comparable to wetland vegetation that are able to withstand prolonged inundation.
  - c. A forebay designed to allow larger sediment particles to settle shall be placed at basin inlets. The forebay volume shall be equal to approximately 10% of the WQv.

B. Additional criteria applying to extended conveyance facilities.

1. Swales and filter strips shall be lined with fine, turf-forming, flood tolerant grasses to slow and filter flows. Maximum depth of flow shall be no greater than three inches.
2. Concentrated runoff shall be converted to sheet flow before entering an extended conveyance facility.

C. Additional criteria applying to infiltration facilities:

1. Infiltration facilities shall be designed in accordance with the requirements contained in the LCSMD Best Management Practice Manual.
2. All runoff directed into an infiltration basin must first flow through an extended conveyance facility to remove coarser sediments that could cause a loss of infiltration capacity.
3. During construction, all runoff from disturbed areas of the site shall be diverted away from the proposed infiltration basin site. No construction equipment shall be allowed within the infiltration basin site to avoid soil compaction.

D. Additional criteria applying to Bio-retention facilities:

## **SECTION IV – STORMWATER DISCHARGE QUALITY STANDARDS**

Bio-retention facilities shall be designed in accordance with the standards contained in the LCSMD Best Management Practice Manual.

- E. Alternative post-construction BMPs: The applicant may request approval from the LCSMD for the use of alternative structural or nonstructural stormwater management practices if the applicant is able to establish, to the satisfaction of the LCSMD that these BMPs are equivalent in pollutant removal and runoff flow/volume reduction effectiveness to those listed in Table 3.

## SECTION V – ILLICIT DISCHARGE AND ILLEGAL CONNECTION

### PROHIBITION AND MONITORING

#### 5.01 DISCHARGE AND CONNECTION PROHIBITIONS

A. Prohibition of Illicit Discharges. No person shall discharge, or cause to be discharged, an illicit discharge into the MS4. The commencement, conduct, or continuance of any illicit discharge to the MS4 is prohibited except as described below:

1. Water line flushing; landscape irrigation; diverted stream flows; rising ground waters; uncontaminated ground water infiltration; uncontaminated pumped ground water; discharges from potable water sources; foundation drains; air conditioning condensate; irrigation water; springs; water from crawl space pumps; footing drains; lawn watering; individual residential car washing; flows from riparian habitats and wetlands; dechlorinated swimming pool discharges; street wash water; and discharges or flows from fire fighting activities. These discharges are exempt until such time as they are determined by the LCSMD to be significant contributors of pollutants to the MS4.
2. Discharges specified in writing by the LCSMD as being necessary to protect public health and safety.
3. Discharges from off-lot discharging home sewage treatment systems permitted by Lake County Board of Health for the purpose of discharging treated sewage effluent in accordance with Ohio Administrative Code 3701-29 or other applicable Lake County Board of Health sewage treatment regulations, until such time as the Ohio Environmental Protection Agency issues an NPDES permitting mechanism for residential 1, 2, or 3 family dwellings. These discharges are exempt unless such discharges are deemed to be creating a public health nuisance by the Lake County Board of Health.

In compliance with NPDES Permit #OHQ000001, discharges from all off-lot discharging home sewage treatment systems must either be eliminated or have coverage under an appropriate NPDES permit issued and approved by the Ohio Environmental Protection Agency. When such permit coverage is available, discharges from off-lot discharging home sewage treatment systems will no longer be exempt from the requirements of these Rules and Regulations.

B. Prohibition of Illegal Connections. The construction, use, maintenance, or continued existence of illegal connections to the MS4 is prohibited.

1. This prohibition expressly includes, without limitation, illegal connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.
2. A person is considered to be in violation of this regulation if the person connects a line conveying illicit discharges to the MS4, or allows such a connection to continue.

## SECTION V – ILLICIT DISCHARGE AND ILLEGAL CONNECTION

### PROHIBITION AND MONITORING

#### 5.02 MONITORING OF ILLICIT DISCHARGES AND ILLEGAL CONNECTIONS

- A. Establishment of an Illicit Discharge and Illegal Connection Monitoring Program: The LCSMD shall establish a program to detect and eliminate illicit discharges and illegal connections to the MS4. This program shall include the mapping of the MS4, including MS4 outfalls and home sewage treatment systems; the routine inspection of stormwater outfalls to the MS4, and the systematic investigation of potential residential, commercial, industrial, and institutional facilities for the sources of any dry weather flows found as the result of these inspections.
- B. Inspection of Residential, Commercial, Industrial, or Institutional Facilities.
1. The LCSMD shall be permitted to enter and inspect facilities subject to this regulation as often as may be necessary to determine compliance with this regulation.
  2. The LCSMD shall have the right to set up at facilities subject to this regulation such devices as are necessary to conduct monitoring and/or sampling of the facility's stormwater discharge, as determined by the LCSMD.
  3. The LCSMD shall have the right to require the facility owner/operator to install monitoring equipment as necessary. This sampling and monitoring equipment shall be maintained at all times in safe and proper operating condition by the facility owner/operator at the owner/operator's expense. All devices used to measure stormwater flow and quality shall be calibrated by the LCSMD to ensure their accuracy.
  4. Any temporary or permanent obstruction to safe and reasonable access to the facility to be inspected and/or sampled shall be promptly removed by the facility's owner/operator at the written or oral request of the LCSMD and shall not be replaced. The costs of clearing such access shall be borne by the facility owner/operator.
  5. Unreasonable delays in allowing the LCSMD access to a facility subject to this regulation for the purposes of illicit discharge inspection is a violation of this regulation.
  6. If the LCSMD is refused access to any part of the facility from which stormwater is discharged, and the LCSMD demonstrates probable cause to believe that there may be a violation of this regulation, or that there is a need to inspect and/or sample as part of an inspection and sampling program designed to verify compliance with this regulation or any order issued hereunder, or to protect the public health, safety, and welfare, the LCSMD may seek issuance of a search warrant, civil remedies including but not limited to injunctive relief, and/or criminal remedies from any court of appropriate jurisdiction.



## SECTION VI- ENFORCEMENT AND PENALTIES

### 6.01 ENFORCEMENT AND PENALTIES

Enforcement of these Rules and Regulations, and penalties for violation of said Rules and Regulations, shall be as authorized in the Ohio Revised Code.

- A. Inspection: The LCSMD, its employees, agents and/or assignees are authorized assistants to the Lake County Sanitary Engineer for purposes of Chapter 6117 of the Ohio Revised Code.
1. When an inspection and maintenance agreement is in effect, the LCSMD is permitted to enter the property subject to the agreement as the LCSMD determines necessary to verify and/or inspect that the subject property is compliant with the LCSMD Rules and Regulations.
  2. When no inspection or maintenance agreement is applicable, when properly identified in writing or otherwise, and after written notice is delivered to the owner at the owner's tax mailing address five (5) days in advance by certified mail or first class mail, the LCSMD, its employees, agents and/or assignees are authorized to enter any public or private property within the LCSMD's jurisdiction for the purpose of making inspections necessary for design or evaluation of drainage facilities. No person or public agency shall forbid or interfere with the LCSMD, its employees, agents and/or assignees entry on property for the above listed purposes. R.C. § 6117.01(F) and R.C. § 6117.45.
- B. Notice of Violation: If abatement of a violation and/or restoration of affected property is required, a Notice of Violation shall set forth a deadline within which such remediation or restoration must be completed. Said Notice shall further advise that, should the facility owner/operator fail to remediate or restore within the established deadline, a legal action for enforcement may be initiated. Any person receiving a Notice of Violation must meet compliance standards within the time established in the Notice of Violation.
- C. Civil Remedies: An action may be commenced and prosecuted by the Lake County Prosecuting Attorney in the Lake County Court of Common Pleas or by the Ohio Attorney General in the Lake County Court of Common Pleas for the recovery of any fine, forfeiture, or penalty mentioned in Sections 6117.01 to 6117.40 of the Ohio Revised Code against any person liable. R.C. § 6117.31.
- D. Criminal Remedies: Whoever violates Sections 6117.45 or 6117.51 of the Ohio Revised Code may be prosecuted for a minor misdemeanor as authorized and in accordance with the Ohio Revised Code. R.C. § 6117.99(A).
1. All fines collected pursuant to R.C. § 6117.99(A) shall be paid into the county treasury and credited to the appropriate county fund as the Lake County Board of Commissioners directs. R.C. § 6117.45.
  2. No person or public agency shall tamper with or damage any drainage facility under the authority of the county under these Rules and Regulations or any apparatus or

## **SECTION VI- ENFORCEMENT AND PENALTIES**

accessory connected with it or pertaining to it, or make any connection into or with the facility, without the permission of the Board of Lake County Commissioners or in a manner or for a use other than as prescribed by the Board. R.C. § 6117.45.

3. No person or public agency shall refuse to permit the inspection by the county sanitary engineer of any such connection. R.C. § 6117.45.

Commissioners' Office, Lake County  
Painesville, OH, December 20, 2007

The Board of County Commissioners, in and for Lake County, Ohio, met this day in regular session with the following members present:

Commissioners: Aufuldish, Sines and Troy

Commissioner Aufuldish presented the following resolution and moved its adoption.

**RESOLUTION APPROVING LAKE COUNTY STORMWATER MANAGEMENT DEPARTMENT RULES AND REGULATIONS**

WHEREAS, the Board of County Commissioners hereby finds and determines that all formal actions relative to the adoption of this resolution were taken in an open meeting of this Board of County Commissioners, and that all the deliberations of this Board of County Commissioners and of its committees, if any, which resulted in formal actions, were taken in meetings open to the public, in full compliance with applicable legal requirements, including Section 121.22 of the Revised Code, and

WHEREAS, Ohio Revised Code Section 6117.01(D) authorizes this Board to adopt rules and regulations governing stormwater drainage in the Lake County Department of Utilities Stormwater Management Division; and

WHEREAS, by resolution #20030717C01 dated July 17, 2003, the Board of Lake County Commissioners defined the purpose of the Lake County Regional Water and Sewer District to include Stormwater Management and renamed the District; and

NOW, THEREFORE, BE IT RESOLVED, that the Board of County Commissioners, in and for Lake County, Ohio, hereby approve and adopt the Lake County Department of Utilities, Stormwater Management Division Rules and Regulations governing stormwater drainage, attached hereto and incorporated herein by reference and made a part of this resolution.

BE IT FURTHER RESOLVED, that the Clerk of the Board is hereby directed to forward certified copies of this resolution to the Lake County Prosecuting Attorney; Lake County Drainage Engineer; the Lake County Sanitary Engineer; and the Lake County Stormwater Management Director.

Commissioner Troy seconded the resolution and the roll being called upon its adoption, the vote resulted as follows:

"AYES": Commissioners: Aufuldish and Troy

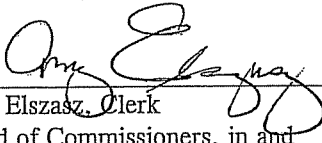
"NAYS": Commissioners: Sines

Resolution adopted,  
Amy Elszasz, Clerk

CLERK'S CERTIFICATION

I, Amy Elszasz, duly appointed Clerk of the Board of County Commissioners, do hereby certify that this is a true and accurate copy of a resolution adopted by said Board on December 20, 2007, and recorded in Commissioners' Journal, Volume 2007.

WITNESS my hand this twentieth day of December, 2007, in Painesville, Ohio.

  
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Amy Elszasz, Clerk  
Board of Commissioners, in and  
for Lake County, Ohio

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