

**SANITATION DISTRICT NO. 1**

**STORM WATER**

**RULES AND REGULATIONS**



**1045 EATON DRIVE**  
**FORT WRIGHT, KY 41017**

**June 2020**

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## **SECTION 100**

### **REGIONAL STORM WATER MANAGEMENT**

#### **Section 101 ESTABLISHMENT**

Sanitation District No. 1 of Northern Kentucky (SD1) was established in 1946 by the Division of Sanitary Engineering of the Kentucky Department of Health to improve wastewater conveyance and treatment pursuant to Chapter 220 of the Kentucky Revised Statutes. It was not until legislation was adopted in 1998 by the Kentucky General Assembly that SD1 was granted authority to regulate and finance storm water drainage within the designated service area. In response to requests from Northern Kentucky communities, SD1 accepted the responsibility to become the regional storm water utility to operate the public storm water drainage systems (or municipal separate storm sewer systems (MS4s)) and to develop and implement a storm water quality management program to comply with U.S. EPA's 1999 National Pollutant Discharge Elimination System (NPDES) Phase II Rule.

#### **Section 102 PUBLIC STORM WATER DRAINAGE SYSTEMS**

Fast-moving water in large quantities has the power to shape anything it touches. Roofs, roads and other paved surfaces are all hard surfaces that increase how fast storm water moves, potentially leading to more erosion or flooding that can damage homes and property or make travel difficult. SD1's storm water drainage systems carry runoff away from buildings and roads to nearby streams. Storm water drainage systems include more than just underground pipes. Northern Kentucky also relies on channels, detention basins, rain gardens and more to manage storm water runoff. SD1 maintains the municipal separate storm sewer system ("MS4") of our co-permittees pursuant to the Transfer and Assignment of the SD1 Storm Water Drainage System Agreements. Pursuant to the Transfer Agreements SD1 has a responsibility to maintain assets previously owned by the co-permittees as a public system within the storm water service area. While SD1 owns and maintains these structures, many other drainage system structures are the responsibility of private property owners, homeowners associations or cities and counties.

#### **Section 103 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATION**

The Phase II Rule addressed municipal separate storm sewer systems (MS4s) serving a population of less than 100,000 people in urbanized areas. The final rule required all MS4s located within urbanized areas, as defined by the Bureau of the Census, to comply with the Phase II storm water regulations. The Kentucky Division of Water (KDOW) has designated over 30 communities in Boone, Campbell and Kenton Counties (including the counties themselves) as Phase II communities that must comply with the NPDES regulations, which have been adopted by KDOW (401 KAR 5:060 Section 12). The U.S. Environmental Protection Agency (EPA) has delegated responsibility for the MS4 program to the Kentucky Energy and Environment Cabinet, of which KDOW is a part. On behalf of SD1's co-permittee Phase II communities, SD1 manages the storm water quality management program pursuant to the KPDES KYG20 general permit.

#### Section 104 STORM WATER SERVICE AREA

The storm water service area was established to manage storm water for the co-permittees (i.e., cities and unincorporated portions of the counties) and to implement the Phase II permit within the urbanized area of Northern Kentucky in compliance with state and federal laws. Accordingly, the service area, as adjusted in July of 2018, was generated to include property within the co-permittee cities and property within the unincorporated areas of the counties determined to be urbanized. The Census Designated Urbanized Area and the proximity of SD1 owned sanitary sewer and storm sewer infrastructure was used as an indication of urbanization for the unincorporated areas of the counties. Within the July 2018 approved service area, proximity to SD1 infrastructure is determined by the distance of the property boundary being within 1000 feet of SD1 owned infrastructure. The service area will be evaluated following each decennial census and updated as needed based on the addition of Census Designated Urbanized Area and SD1 owned infrastructure. The service area will also be updated on an ongoing basis to include new development that originates within or occurs adjacent to the existing boundary.

#### Section 105 STORM WATER FEE

SD1 charges a storm water fee to residential and non-residential property owners within its service area as authorized by KRS Chapter 220 to fund the operation, maintenance and replacement of storm water drainage systems and to manage the storm water quality management program, which serves all communities and properties that lie within the storm water service area. The storm water fee is based on an impervious area rate methodology as further described in Section 300. A combination of storm water fees, plan review fees, and inspection fees pay for the cost of managing the region's storm water drainage system needs and implementing the region's storm water quality management program.

#### Section 106 APPLICABILITY

These regulations shall apply to all property located within the service area unless indicated otherwise herein. Any aggrieved party may challenge the enforcement or applicability of these regulations pursuant to the process set forth in Section 1400.



## SECTION 200

### DEFINITIONS

#### Section 201 DEFINITIONS

The following are definitions of words used in these regulations:

1. **APPLICATION:** The forms, calculations, improvement plans, and other supporting documents submitted to SD1 for review and authorization for actions associated with a land disturbing activity or a development or re-development activity.
2. **BMP (Best Management Practice):** 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 reducing the amount of pollution generated by non-point sources of pollution to a level compatible with water quality goals. BMPs may include structural practices and operation and maintenance procedures.
3. **CHANNEL:** The natural bed of a stream or a man-made drainage ditch that conveys water.
4. **CLEAN WATER ACT:** The federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.
5. **CLEARING:** Land disturbing activity, which includes stripping and cutting of trees and ground cover and the removal of roots and associated materials.
6. **COMBINED SEWER OVERFLOW (CSO):** For the purpose of the Amended Consent Decree only, any discharge from any outfall currently identified, or identified in the future, as a combined sewer overflow or CSO in any District KPDES permit.
7. **COMBINED SEWER OVERFLOW OUTFALL:** The outfalls from which CSOs are discharged to waters of the United States.
8. **COMBINED SEWER SYSTEM:** The portion of the District's Sewer System designed to convey municipal sewage (domestic, commercial and industrial wastewaters) and storm water runoff through a single-pipe system to the District's DCWWTP or Combined Sewer Overflow Outfalls.
9. **CONSTRUCTION ACTIVITY:** Activities subject to KPDES Construction Permits. Currently these include construction projects resulting in land disturbance of 1 acre or more. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.
10. **DETENTION BASIN:** A storm water management pond that remains dry between storm events. Storm water management ponds include a properly engineered/designed volume which is dedicated to the temporary storage and slow release of runoff waters. Detention Basins are storm water control measures.
11. **DEVELOPMENT:** Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading,

paving, excavation or drilling operations.

12. **EROSION:** The process by which the land surface is worn away by the action of water, wind, ice, or gravity.
13. **EXISTING:** In existence at the time of the initiation of a development or re-development activity.
14. **FIFTY-YEAR STORM:** A storm that is capable of producing rainfall expected to be equaled or exceeded on the average of once in fifty (50) years. It may also be expressed as an exceedance probability with a two (2) percent chance of being equaled or exceeded in any given year.
15. **GRADING:** Land disturbing activity that changes the existing contours of the site such as excavation, stripping, cutting, filling, stockpiling or any combination thereof.
16. **HAZARDOUS MATERIALS:** Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.
17. **HIGH QUALITY WATERS:** Those Waters of the Commonwealth that have been categorized by DOW as high quality pursuant to the requirements of 401 KAR 10:030, Section 1(3).
18. **ILLICIT CONNECTIONS:** An illicit connection is defined as either of the following: (1) Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drainage system including but not limited to any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drainage system and any connections to the storm drainage system from indoor drains and sinks, regardless of whether said drain or connection has been previously allowed, permitted, or approved by SD1 or County, or (2) Any drain or conveyance connected from a commercial or industrial land use to the storm drainage system which has not been documented in plans, maps, or equivalent records and approved by SD1.
19. **ILLICIT DISCHARGE:** Any discharge to the municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a KPDES permit (other than the KPDES permit for discharges from the municipal separate storm sewer and discharges resulting from firefighting activities or other de minimis activities allowable under the MS4 regulations) and other discharges referenced in 40 CFR 122.26(d) (2) (iv) (B) (1).
20. **IMPAIRED WATERS:** Those “waters of the Commonwealth” that have been categorized by the Division of Water as impaired for applicable designated uses and have been identified pursuant to 33 U.S.C. 1315(b) and listed in the most recently approved 305(b) report.
21. **IMPERVIOUS:** Any area or surface that prohibits or significantly restricts the passage of precipitation into the surface soils, which include, but are not limited to rooftops, roads,

driveways, parking lots, sidewalks, gravel surfaces, and other pathways which alter the natural drainage characteristics.

22. INDUSTRIAL ACTIVITY: Activities subject to NPDES Industrial Permits as defined in 40 CFR § 122.26(b)(14).
23. KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM (KPDES) STORM WATER DISCHARGE PERMIT: A permit issued by the Kentucky Division of Water, pursuant to the authority delegated thereto by 33 U.S.C. § 1342(b), that authorizes the discharge of pollutants to waters of the Commonwealth, whether the permit is applicable to an individual, group, or on a general area-wide basis.
24. KYG20: KPDES General Permit for Storm Water Discharges Associated with Small Municipal Separate Storm Sewer Systems (MS4).
25. KYR10: KPDES General Permit for Storm Water Discharges Associated with Construction Activities.
26. LAND DISTURBING ACTIVITY: Any clearing, grading, excavating, filling or other alteration of the earth's surface where natural or man-made ground cover is destroyed.
27. LAND DISTURBANCE PERMIT: A permit issued by SD1 to allow a land disturbing, development or re-development activity to begin and to comply with the requirements of the KYG20 Permit requirements.
28. LAND DISTURBING ACTIVITY HOMEBUILDING PERMIT TRANSFERS: The transfer of responsibility of any portion of a land disturbing permit to a new permittee for the purpose of individual lot development and/or home building. The transfer permit is not limited to one lot but may encompass whatever area is stated in the transfer application and approved by SD1.
29. LARGER COMMON PLAN OF DEVELOPMENT OR SALE: A contiguous area where multiple separate distinct construction activities may be taking place at different times on different schedules under one plan. Refer to the definition in the most recent KYR10 permit for additional details.
30. MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4): a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, and storm drains): owned or operated by a state, city, town, county, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, 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 CWA that discharges to waters of the United States; i. designed or used for collecting or conveying storm water; ii. which is not a combined sewer; and iii. which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2
31. NATURAL RESOURCES CONSERVATION SERVICE (NRCS): An agency of the United States Department of Agriculture, formerly known as the Soil Conservation Service (SCS).

32. **NON-RESIDENTIAL:** For the purposes of these rules and regulations, all other properties that are not considered residential (such as, commercial, industrial, and/or institutional). This also includes, but is not limited to, one or more multi-family dwellings (three-family residential units and greater) on one parcel. Examples included, but are not limited to: condominiums, townhouses, and mobile home parks.
33. **NON-STORM WATER DISCHARGE:** Any discharge to the storm drainage system that is not composed entirely of storm water.
34. **ONE HUNDRED-YEAR STORM:** A storm that is capable of producing rainfall expected to be equaled or exceeded on the average of once in one hundred (100) years. It may also be expressed as an exceedance probability with a one (1) percent chance of being equaled or exceeded in any given year.
35. **OUTFALL:** An outlet point where water flows from a structure (e.g., pipe outlet) and the area immediately beyond the structure which is impacted by the velocity of flow in the structure.
36. **PERSON:** Any individual, corporation, partnership, joint venture, agency, unincorporated association, municipal corporation, county, state agency, the federal government or other recognized legal entity, or any combination thereof.
37. **POLLUTANT:** Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordinances, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.
38. **POST-DEVELOPMENT:** The conditions which exist following the completion of the land disturbing activity in terms of topography; vegetation; land use; and rate, volume, or direction of runoff.
39. **PRE-DEVELOPMENT:** The conditions which existed prior to the initiation of the land disturbing activity in terms of topography; vegetation; land use; and rate, volume, or direction of runoff.
40. **PREMISES:** Any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.
41. **PROFESSIONAL ENGINEER:** A person licensed in the Commonwealth of Kentucky as a Professional Engineer.
42. **RECEIVING WATERS:** The “water of the Commonwealth” as defined in KRS 224.01-010 (33) into which the regulated storm water discharges.
43. **RECORD DRAWINGS:** A set of engineering or site drawings furnished upon completion of a project depicting how storm sewer systems and storm water control facilities were actually constructed.

44. RE-DEVELOPMENT: Alterations of a property that change the existing “footprint” of a site or building in such a way that results in the disturbance of land. The term is not intended to include such activities as exterior remodeling, which would not be expected to cause adverse storm water quality impacts and offer no new opportunity for storm water controls.
45. RESIDENTIAL: For the purposes of these rules and regulations, one single-family detached home or duplex on one parcel in which the inside and outside of the structure is owned by the same entity.
46. RETENTION BASIN: A storm water management pond that maintains a permanent pool of water. These storm water management ponds include a properly engineered/designed volume dedicated to the temporary storage and slow release of runoff waters. A retention basin is a storm water control measure.
47. SD1: Sanitation District No. 1 of Northern Kentucky.
48. SEDIMENT: Solid material, both mineral and organic, that is being transported or has been moved from its site of origin by wind, water, gravity or ice and has come to rest on the earth’s surface either on dry land or in a body of water.
49. SEDIMENT BASIN: A temporary sediment pond that releases runoff at a controlled rate. It is designed to slowly release runoff, detaining it long enough to allow most of the sediment to settle out of the water. The outlet structure is usually a designed pipe riser and barrel. The entire structure is removed after construction. Permanent storm water detention structures can be modified to function as temporary sediment basins.
50. SEDIMENT CONTROL: The limiting of sediment being transported by controlling erosion or detaining sediment-laden water, allowing the sediment to settle out.
51. SEDIMENT TRAP: A temporary sediment-settling pond having a simple spillway outlet structure stabilized with geo-textile and riprap.
52. SEPARATE STORM SEWER SYSTEM: A conveyance or system of conveyances, including but not limited to any street curbs and gutters, storm drains, pumping facilities, and other drainage structures designed or used for collecting or conveying storm water.
53. SHEET FLOW: Water runoff in a thin uniform layer or rills and which is of small enough quantity to be treated by sediment barriers.
54. SOIL: Erodible earth material consisting of minerals and/or organics.
55. SOIL CONSERVATION SERVICE (SCS): The federal agency now titled the “Natural Resources Conservation Service (NRCS),” which is an agency of the United States Department of Agriculture (USDA).
56. STORM WATER: Any surface runoff or discharge consisting entirely of water from any form of natural precipitation and resulting from such precipitation (i.e. runoff resulting from rainfall or snow melt).
57. STORM WATER CONTROL MEASURE: Physical structures requiring engineering design

and engineered construction to remove pollutants from storm water runoff, provide flood control, reduce downstream erosion, and may promote infiltration.

58. **STORM WATER DRAINAGE SYSTEM:** All storm sewer systems, including but not limited to pipes, channels, storm water control measures, ponds, reservoirs, and other drainage features designed or used for conveying or storing storm water.
59. **STORM WATER MANAGEMENT PROGRAM:** The regional program administered by SD1 to operate and maintain the public storm water system to address local flooding and drainage issues and to implement the storm water quality management program to fulfill Phase II MS4 regulatory requirements.
60. **STORM WATER POLLUTION PREVENTION PLAN:** A document which describes the Best Management Practices and activities to be implemented by a person or business to identify the sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to storm water, storm drainage systems, and/or receiving waters to the maximum extent practicable.
61. **STORM WATER QUALITY MANAGEMENT PLAN (SWQMP):** The written plan that details the “Storm Water Quality Management Program” for a defined period of time. The “Plan” is considered a single document, even though it actually consists of separate programs.
62. **STORM WATER QUALITY MANAGEMENT PROGRAM:** A comprehensive program to manage the quality of storm water discharged from the municipal separate storm sewer system (MS4).
63. **STREAM:** A naturally occurring body of water flowing in a channel, such as a river or creek. Stream flows are categorized as perennial, intermittent or ephemeral.
64. **TEN-YEAR STORM:** A storm that is capable of producing rainfall expected to be equaled or exceeded on the average of once in ten (10) years. It may also be expressed as an exceedance probability with a ten (10) percent chance of being equaled or exceeded in any given year.
65. **TWENTY-FIVE YEAR STORM:** A storm that is capable of producing rainfall expected to be equaled or exceeded on the average of once in twenty-five (25) years. It may also be expressed as an exceedance probability with a four (4) percent chance of being equaled or exceeded in any given year.
66. **TWO-YEAR STORM:** A storm that is capable of producing rainfall expected to be equaled or exceeded on the average of once in two (2) years. It may also be expressed as an exceedance probability with a fifty (50) percent chance of being equaled or exceeded in any given year.
67. **VARIANCE:** An approved modification by SD1 of the minimum sediment and storm water management requirements for specific circumstances where strict adherence of the requirements would not fulfill the intent of the regulations or would adversely affect public health, safety, or welfare.
68. **WAIVER:** The relinquishment by SD1 from sediment and storm water management

requirements for a specific land disturbing activity as determined on a case-by-case review basis.

69. WATERCOURSE: The route along which water flows from any natural or man-made channel.

70. WATERS OF THE COMMONWEALTH: As defined in KRS 224.01-010(33), includes any and all rivers, streams, creeks, lakes, ponds, impounding reservoirs, springs, wells, marshes, and all other bodies of surface or underground water, natural or artificial, situated wholly or partly within or bordering upon the Commonwealth or within its jurisdiction. (*KRS 244.01-010(33)*).

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## **SECTION 300**

### **STORM WATER FEE**

#### **Section 301 GENERAL**

The storm water fee funds the Storm Water Management Program administered by SD1. The fee applies to improved properties in the Storm Water Service Area of SD1 approved by the Kentucky Division of Water, with the exception of properties recorded as agricultural by the respective county Property Valuation Administrator (PVA) and public road right of ways. The basic storm water fee shall be based upon an impervious area rate methodology. Additional information on billing processes and implementation are detailed in SD1's Storm Water Billing Manual.

#### **Section 302 STORM WATER FEE FOR RESIDENTIAL PROPERTIES**

Residential property (for purposes of these rules and regulations only) is defined as one single-family detached home or duplex on one parcel in which the inside and outside of the structure is owned by the same entity. Each owner of a residential property within SD1's Storm Water Service Area shall pay a flat fee based upon one (1) Equivalent Residential Unit (ERU), which shall be charged by SD1 on either a monthly or quarterly basis, or at such other periodic basis as determined by SD1 from time to time. The flat fee is established in the Board Resolution dated February 20, 2003. The basic charge shall be calculated based on the number of ERU's at a rate provided by the SD1 fee schedule approved by resolution of the SD1 Board of Directors.

#### **Section 303 STORM WATER FEE FOR NON-RESIDENTIAL PROPERTY OWNERS**

Non-Residential (for purposes of these rules and regulations only) is defined as all other properties that are not considered residential (such as, commercial, industrial and/or institutional). This also includes, but is not limited to, one or more multi-family dwellings (three-family residential units and greater) on one parcel. Each owner of non-residential property within SD1's Storm Water Service Area shall pay a storm water fee based upon the measured amount of impervious area contained on the parcel. The total impervious area shall be divided by 2,600 square feet (one (1) ERU) to determine the number of ERUs (rounded to the nearest tenth of a point) represented on the parcel. The fee, which shall be charged by SD1 on either a monthly or quarterly basis, or at such other periodic basis as determined by SD1 from time to time, shall be determined by multiplying the number of ERUs contained on the parcel by SD1's fee per ERU. The basic charge shall be calculated based on the number of ERU's at a rate provided by the SD1 fee schedule approved by resolution of the SD1 Board of Directors. The minimum fee for any improved parcel is equal to one (1) ERU.

Impervious area calculations for non-residential properties shall include buildings (rooftops), driveways (paved and unpaved), parking lots (paved and unpaved), sidewalks, and other water-resistant surfaces that inhibit precipitation from readily infiltrating into the surface soil. Per SD1 Board Resolution dated May 21, 2019, private (i.e., non-dedicated) paved and unpaved roads as defined by the Local GIS Consortium shall not be included in the total impervious area calculation for non-residential properties.

## Section 304 ADJUSTMENTS TO STORM WATER FEE

### 1. Credit Policy – Non-Residential Properties

The intent of SD1's Credit Policy is to encourage storm water management practices and programs that reduce the impacts of runoff to storm water drainage systems and receiving waters. An owner of non-residential property, whose accounts are current or in good standing, may request an adjustment in the storm water fee pursuant to the Credit Policy, approved by the Board, and incorporated herein by reference. Under the Board-approved Credit Policy, an owner of non-residential (as defined by these regulations) and/or non-agricultural property who has met the requirements of the Credit Policy, will qualify for a reduction of the storm water fee applied to that specific parcel of property.

SD1 will evaluate each case on an individual basis in determining the appropriate level of credit. The storm water fee credit types and percentages are set forth in the Credit Policy and are incorporated herein by reference.

### 2. Impervious Area Modification Requests

If a non-residential property owner does not agree with the amount of impervious area that they are being billed for, the customer must complete and submit an impervious area modification request form to SD1.

### 3. Billing Adjustments

- Adjustment for Over Billing. Upon request from a property owner or at SD1's discretion, SD1 will review past billing records for a period of five (5) years to determine appropriate billing adjustments or refunds to account for errors, changes in circumstances, or other reasonable reasons for adjustment. Billing disputes or requests for adjustments must be submitted within five (5) years of the date of the bill to be considered for adjustment.
- Adjustments for Under Billing. If SD1 determines that a customer account was not properly billed due to errors, changes in circumstances, or other reasonable reasons, SD1 will make proper adjustments to the account for a period not to exceed one (1) year.

## Section 305 BILLING, PAYMENT and NON-PAYMENT OF FEES

The storm water fee shall be billed and collected by SD1. Payment of the storm water fee must be made to SD1 or one of its assigned collection agents.

Payment of the storm water fees can be made by approved methods. Customers assume all responsibility for insuring there are sufficient funds to cover the amount issued for payment of the storm water fees. Payment is considered to be made in full only when the funds are received by SD1.

Fees shall be billed to each owner of property within the Storm Water Service Area. Bills will be generated and sent to property owners at the property address set forth in the respective county Property Valuation Administrator (PVA), unless an owner submits a written request to receive bills at a different mailing address, and shall be due and payable as follows:

- Quarterly bills will be due and have a payment due date of thirty (30) calendar days past the billing date.
- Monthly bills will be due and have a payment due date of twenty-one (21) calendar

days past the billing date.

A penalty of ten (10%) percent of the amount of all bills shall be added to those not paid by the due date.

- Quarterly bills not paid within thirty (30) days from the date of billing, or by the payment due date will be considered delinquent and are subject to the penalty.
- Monthly bills not paid within twenty-one (21) days from the date of billing, or by the payment due date will be considered delinquent and are subject to the penalty.

When any bill has remained unpaid for thirty (30) calendar days past the original payment due date, the Board of Directors may authorize the notification of the municipality or the person, firm, commission, or corporation which furnishes water to the property, to shut off the water service to the property until such time as all delinquent charges plus a reasonable charge for the disconnection of the water service are paid in full or have acceptable payment arrangements made. Additionally, SD1 may seek redress and exercise all collection remedies available in law or equity.

In the event that an owner moves out of a property and has a delinquent account balance, this balance will be applied to the owner's new account, or other account owned or occupied by the owner, if it is within SD1's service area. If a customer moves from SD1's service area, any delinquent balance will be submitted to a collection agency for action.

Upon receipt of such notice in writing, the municipality, person, firm or corporation which furnishes water to the said property will immediately shut off and discontinue the water service to said property (KRS 220.510).

Upon full payment of such delinquent account plus any service charge from the municipality, person, firm or corporation which furnishes water to the said property, or upon an acceptable payment arrangement made, the water service will be ordered back on. The service fee(s) or charge(s) collected shall be paid to the municipality, person, firm, commission, or corporation providing the service.

A service fee in such amount as approved on SD1's fee schedule as approved by resolution of the Board of Directors shall be applied to the customer's account for each check, direct withdrawal, or debit/credit card payment returned from the customer's bank (for any reason). This fee will be added to the outstanding storm water fees for which payment was originally intended. The service fee is necessary to cover extra, incurred expenses by SD1 for processing the returned payment.

A notice will be sent to the customer after the returned payment is received by SD1. This notice will inform the customer of the service fee and also inform the customer that if all outstanding storm water fees, including the return fee, are not paid within ten (10) calendar days from the postmarked date of the notice, the returned payment amount and return fee will be considered delinquent and water service to the property will be shut off in accordance with sections hereinbefore.

The service fee for returned items is in addition to all other charges and penalties as described in these rules and regulations.

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## **SECTION 400**

### **GENERAL REQUIREMENTS FOR LAND DISTURBANCE ACTIVITIES**

#### **Section 401 PURPOSE**

The purpose of this Section is to establish a permit process to be administered by SD1 to manage storm water runoff from construction sites and post-construction storm water discharges from new developments and re-developments including permitting public storm sewer construction and connections to SD1 owned infrastructure. This Section outlines the general requirements for land disturbance activities; further requirements for land disturbance activities are listed in Sections 500 through 1000 of these regulations.

These regulations require the implementation of proper erosion and sediment control practices; controls for other wastes; and the implementation of post-construction runoff controls in areas undergoing development or re-development. These regulations require review of improvement plans for new developments and re-developments; site inspections and enforcement activities of control measures; long-term operation and maintenance of post-construction controls; and sanctions to ensure compliance.

#### **Section 402 COVERAGE**

The regulations establish the criteria, methodology and minimum standards for the design of components for storm drainage systems. Such systems may include:

1. Open systems (i.e., channels, street curb and gutter, etc.);
2. Closed systems (i.e., box culverts, sewer pipe, manholes, inlets, junction boxes, etc.);
3. Impoundments (i.e., detention/retention basins, ponds, underground vaults, etc.);
4. Combinations of open and closed systems or impoundments that collectively form the storm drainage system;
5. Post-construction water quality controls and post-construction water quantity controls (i.e., storm water control measures).

#### **Section 403 APPLICABILITY**

The requirements in these regulations shall apply to land disturbing activities and storm sewer connections or extensions associated with new development or re-development projects as follows:

1. Separate Storm Sewer Area – projects that disturb an area greater than or equal to one (1) acre;
2. Combined Sewer Area – projects that disturb an area greater than or equal to 10,000 square feet which add impervious surface area or projects that disturb an area greater than or equal to one (1) acre which do not add impervious surface area;

3. Sites that are smaller than one (1) acre in the separate storm sewer area or 10,000 square feet in the combined sewer area may also be covered by these regulations if they are a part of a larger planned common plan of development or sale (e.g. several clustered individual building lots cumulatively totaling 1 acre or greater);
4. Projects on a site with a previously approved Land Disturbance Permit that impact the intended function of an existing storm water control measure(s) or the existing drainage system(s) so that the function no longer meets these Rules and Regulations shall be submitted to SD1 for review;
5. All projects less than one (1) acre that install 8" or greater storm sewers that connect to existing SD1 infrastructure or storm sewers that will be publicly dedicated;
6. All SD1 capital projects shall strive to meet all regulations governing development and provide a level of service to the maximum extent practicable based upon existing conditions, spatial limitations and costs.

#### Section 404 EXEMPTIONS

The following activities are specifically exempted from these regulations:

1. Land disturbing activities on property used for agricultural, horticultural or botanical production of plants and animals useful to man, including but not limited to: forages and sod crops, grains and feed crops, tobacco, cotton and peanuts; dairy animals and dairy products; poultry and poultry products; livestock, including beef cattle, sheep, swine, horses, ponies, mules or goats, including the breeding and grazing of these animals; bees; fur animals and aquaculture, except that the construction of a structure used for agricultural purposes of one or more acres, such as broiler houses, machine sheds, repair shops and other major buildings and which require the issuance of a building permit shall require the submittal and approval of a storm water permit (refer to Section 405) prior to the start of the land disturbing activity.
2. Land disturbing activities undertaken on forestland for the production and harvesting of timber and timber products.
3. Minor land disturbing activities such as residential gardens, individual residential or commercial landscaping, minor home repairs, or maintenance work, and construction or maintenance of individual underground utility connections.
4. Installation of private storm sewers not connecting to an SD1 asset with land disturbing activities less than 1 acre in the separate system or less than 10,000 square feet in the combined sewer system not associated with a previous Land Disturbance Permit.
5. Activities undertaken by local governments or public service districts relating to the emergency repair and maintenance of existing facilities and structures. These activities will be carried out using appropriate best management practices to minimize the impact on the environment and surrounding properties.

## Section 405 TYPES OF PERMITS

Persons responsible for a land disturbing activity shall make application to SD1 on forms and checklists provided by SD1, along with supporting information. The land disturbing activity cannot commence until SD1 has issued the applicable permit(s) and an on-site preconstruction meeting with SD1 is conducted. If the applicant submits multiple permits for the same project, a pre-construction meeting is only required for the initial permit application. The different types of permits are defined below:

**Clearing Permit** – required for clearing activities, which include stripping and cutting of trees and ground cover and the removal of roots and associated material. The Clearing Permit does not include any earth moving activities. A Clearing Permit will not be required if the property owner/applicant has received a Grading or Land Disturbance Permit for the property covering the same activity. See Section 406 for submittal requirements for Clearing Permits.

**Grading Permit** – required for grading activities, which include excavation, filling, stockpiling, or other earth moving activities, and any combination thereof. The Grading Permit may include the construction of sanitary sewers and other utility infrastructure (water, gas, electric, etc.); however, such installation shall occur at the risk of the property owner. A Grading Permit will not be required if the property owner/applicant has received a Land Disturbance Permit for the property covering the same activity. In some instances SD1 may allow some storm sewer installation under a Grading Permit due to construction sequencing. See Section 407 for submittal requirements for Grading Permits.

**Land Disturbance Permit** - required for (1) any alteration of the earth's surface where natural or man-made ground cover is altered and for which the applicant has not received a Clearing or Grading Permit and/or (2) the installation of any storm sewer systems (including storm sewer structures and pipes, detention ponds, etc.). The Land Disturbance Permit shall also include activities covered by a Clearing, Grading, and/or Storm Sewer or Storm Sewer Connection permits if the applicant did not obtain a separate Clearing, Grading, and/or Utility Permit. Any disturbance on a site with a previously approved Land Disturbance Permit, which adds impervious area to a site or increases the drainage area to a storm water control measure must be submitted to SD1 for review and approval. Submittal information shall include all supporting information required by SD1 to ensure the added impervious surface or increase in the drainage area will not adversely affect any previously approved/constructed storm water control measure. See Section 408 for submittal requirements for Land Disturbance Permits.

**Storm Sewer Permit** – required for projects that install storm sewers that will be publicly dedicated. An on-site preconstruction meeting is not required for this permitted activity. A Storm Sewer Permit will not be required if the property owner/applicant has received a Land Disturbance Permit for the property covering the same activity. See Section 409 for submittal requirements for Storm Sewer Permits.

**Storm Sewer Connection Permit** - required for projects that install private 8" or greater storm sewers that connect to existing SD1 infrastructure. An on-site preconstruction meeting is not required for this permitted activity. A Storm Sewer Connection Permit will not be required if the property owner/applicant has received a Land Disturbance Permit for the property covering the same activity. See Section 410 for submittal requirements for

Storm Sewer Connection Permits. For any private storm sewers less than 8" that connect to existing SD1 infrastructure, refer to the requirements in SD1's Certified Tapper Manual.

SD1's issuance of a permit shall not relieve the applicant from obtaining other permits, approvals or licenses required by federal, state, or local laws, regulations or ordinances. This includes but is not limited to permits such as the US Army Corp of Engineers Section 404 permit, the Kentucky Division of Water's Water Quality Certification and Stream Construction Permit. SD1 may, but is not required to, investigate the impact of the proposed project on any municipality, county or state agency.

SD1's issuance of a permit does not warrant the design, construction or maintenance of the proposed project and SD1 shall not be responsible for hydrologic or drainage issues resulting from the construction or maintenance of the proposed project.

The specific details of the submittals required for the permits are detailed in the following sections.

#### Section 406 SUBMITTAL REQUIREMENTS FOR CLEARING PERMITS

All Clearing Permit submittals to SD1 shall contain the following information:

1. Completed Clearing Permit application;
2. A copy of the Notice of Intent (NOI) for coverage under a Kentucky Pollutant Discharge Elimination System (KPDES) General Permit for Storm Water Discharges Associated with Construction Activities (KYR10), the application for a storm water construction individual permit, or a copy of the BMP Plan of a KPDES permit to demonstrate appropriate state permits will be obtained for those sites one acre and greater, or less than one acre that are part of a larger common plan of development;
3. Project name, date, north arrow, location map (a map which clearly shows the location of the property in respect to existing road and landmarks);
4. A clearing plan with a scale not smaller than 1 inch equals 100 feet;
5. All existing and proposed public and private right-of-ways and streets;
6. Location and identification of any storm drainage system (natural or man-made) on the site or within one hundred feet (100') of the development boundary;
7. Identification of the water quality classification as defined by the Kentucky Division of Water (high quality, impaired, TMDL) of the receiving waterways to which the site discharges;
8. Existing contours of not more than two (2) feet within the areas to be disturbed and of not more than five (5) feet on the remainder of the property shall be clearly marked with the elevation based on mean sea level (USGS Datum);
9. Location of construction access points with provisions shown to minimize tracking of material onto adjacent streets and roads;



10. Clearing limits clearly noted on the clearing plan;
11. Location of provisions for control of erosion, and sedimentation, indicating the temporary and permanent control practices and measures which will be implemented during all phases of clearing, grading, and construction. All erosion and sediment control best management practices (silt fence, rock check dams, sediment basins, etc.) shall be numbered for identification and reference purposes. Show all affected or disturbed areas during construction on or within close proximity of the site (i.e., excavation, fill or storage);
12. Computations to support all sediment basin designs shall be submitted to SD1 for review. Computations to support other sediment control practices may be requested by SD1. Computations for sediment basins and sediment control practices shall meet the design criteria of the Kentucky Erosion Prevention and Sediment Control Best Management Practices Planning and Technical Specifications Manual (latest edition). The computations should be in such form as to allow for timely and consistent review and also to be made a part of the permanent SD1 record for future reference. All sediment basin design calculations shall be sealed by a Kentucky Licensed Professional Engineer;
13. Provisions for control of all construction site waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;
14. For property to be developed in sections or phases, detailed plans containing the above information need not be submitted for the entire property. Plans conforming to these criteria should be submitted for the section or phase to be developed along with conceptual or schematic plans for the entire property in order to show the relationship of the relevant section to the entire development plan.

#### Section 407 SUBMITTAL REQUIREMENTS FOR GRADING PERMITS

All Grading Permit submittals to SD1 shall contain the following information:

1. Completed Grading Permit application;
2. A copy of the Notice of Intent (NOI) for coverage under a Kentucky Pollutant Discharge Elimination System (KPDES) General Permit for Storm Water Discharges Associated with Construction Activities (KYR10), the application for a storm water construction individual permit, or a copy of the BMP Plan of a KPDES permit to demonstrate appropriate state permits will be obtained for those sites one acre and greater, or less than one acre that are part of a larger common plan of development;
3. Project name, date, north arrow, location map (a map which clearly shows the location of the property in respect to existing road and landmarks);
4. A grading plan with a scale not smaller than 1 inch equals 100 feet;
5. All existing and proposed public and private right-of-ways and streets;

6. Location of construction access points with provisions shown to minimize tracking of material onto adjacent streets and roads;
7. Existing and proposed contours of not more than two (2) feet within the areas to be disturbed and of not more than five (5) feet on the remainder of the property shall be clearly marked with the elevation based on mean sea level (USGS Datum) and the location and description of the benchmark used;
8. Location of proposed storm water drainage systems, including all facilities and structures relating thereto such as manholes, pump stations, catch basins, inlets and headwalls;
9. Location and identification of any storm water drainage system (natural or man-made) on the site or within one hundred feet (100') of the development boundary;
10. Identification of the water quality classification as defined by the Kentucky Division of Water (high quality, impaired, TMDL) of the receiving waterways to which the site discharges;
11. Location of provisions for control of erosion and sedimentation, indicating the temporary and permanent control practices and measures, which will be implemented during all phases of clearing, grading and construction. All erosion and sediment control best management practices (silt fence, rock check dams, sediment basins, etc.) shall be numbered for identification and reference purposes. Show all affected or disturbed areas during construction on or within close proximity of the site (i.e., excavation, fill or storage);
12. Provisions for control of all construction site waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;
13. Computations to support all drainage and sediment basin designs shall be submitted to SD1 for review. Computations to support other sediment control practices may be requested by SD1. Computations for sediment basins and sediment control practices shall meet the design criteria of the Kentucky Erosion Prevention and Sediment Control Best Management Practices Planning and Technical Specifications Manual (latest edition). The computations should be in such form as to allow for timely and consistent review and also to be made a part of the permanent SD1 record for future reference. All drainage design and sediment basin calculations shall be sealed by a Kentucky Licensed Professional Engineer;
14. For property to be developed in sections or phases, detailed plans containing the above information need not be submitted for the entire property. Plans conforming to these criteria should be submitted for the section or phase to be developed along with conceptual or schematic plans for the entire property in order to show the relationship of the relevant section to the entire development plan.

#### Section 408 SUBMITTAL REQUIREMENTS FOR LAND DISTURBANCE PERMITS

All Land Disturbance Permit submittals to SD1 shall contain the following information:

1. Completed Land Disturbance Permit application;
2. A copy of the Notice of Intent (NOI) for coverage under a Kentucky Pollutant Discharge Elimination System (KPDES) General Permit for Storm Water Discharges Associated with Construction Activities (KYR10), the application for a storm water construction individual permit, or a copy of the BMP Plan of a KPDES permit to demonstrate appropriate state permits will be obtained for those sites one acre and greater, or less than one acre that are part of a larger common plan of development;
3. Project name, date, north arrow, location map (a map which clearly shows the location of the property in respect to existing road and landmarks);
4. A scale not smaller than 1 inch equals 100 feet;
5. All existing and proposed public and private right-of-ways and streets;
6. Existing and proposed contours of not more than two (2) feet within the areas to be disturbed and of not more than five (5) feet on the remainder of the property shall be clearly marked with the elevation based on mean sea level (USGS Datum) and the location and description of the benchmark used;
7. Dimensions of each lot or property boundaries or a description of typical lot sizes on the cover sheet;
8. Location and arrangement of all common open space areas and recreational facilities;
9. Location of proposed storm water drainage systems, including all storm water control measures and facilities, such as bio-retention swales, detention/retention basins, pump stations, and related structures thereto such as manholes, catch basins, inlets, and headwalls. Detention/retention basins shall be clearly identified with the maximum volume capacities labeled. Detailed drawings of all overflow structures or features shall be shown. All storm water structures (inlets, catch basins, junction boxes, headwalls, manholes, etc.) shall be numbered and correspond to those structures on profiles as described in item "10" of this section. Connections to existing control measures, facilities and/or structures shall be shown and labeled. Owner and party responsible for operation and maintenance of the proposed storm water drainage system shall be noted on the site plan;
10. Profiles of all proposed storm water pipes, and structures including percent grade, pipe diameters, material of pipe, pipe lengths, and invert elevations. Profiles shall also show all existing and proposed public utility (water main, storm sewer and sanitary sewer) crossings and all existing private utility (gas, electric, telephone) crossings. The structures (inlets, catch basins, junction boxes, headwalls, manholes, etc.) shall be numbered and correspond to those structures as described in item "9" of this section. Hydraulic grade lines for the 25-year Check Storm shall be shown for all storm water drainage systems either on the profiles in the plans or on profiles included in the drainage computations report. Detail drawings of all overflow structures or features, including valves, shall be shown. Connections to existing control measures, facilities and/or pipes shall be shown

and labeled;

11. Easements shall be shown for all storm water drainage systems. Based on SD1's evaluation, label each storm water drainage system as public or private. For those systems to be dedicated to SD1 after construction, at least a 20-foot public easement shall be shown and dedicated to SD1;
12. Location and identification of any storm water drainage system (natural or man-made) on the site or within one hundred feet (100') of the development boundary;
13. Identification of the water quality classification as defined by the Kentucky Division of Water (high quality, impaired, TMDL) of the receiving waterways to which the site discharges;
14. Provisions for control of erosion and sedimentation, indicating the temporary and permanent control practices and measures, which will be implemented during all phases of clearing, grading and construction. All erosion and sediment control best management practices (silt fence, rock check dams, sediment basins, etc.) shall be numbered for identification and reference purposes. Show all affected or disturbed areas during construction on or within close proximity of the site (i.e., excavation, fill or storage);
15. Provisions for control of all construction site waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;
16. Computations to support all drainage and sediment basin designs shall be submitted to SD1 for review. Computations to support other sediment control practices may be requested by SD1. Computations for sediment basins and sediment control practices shall meet the design criteria of the Kentucky Erosion Prevention and Sediment Control Best Management Practices Planning and Technical Specifications Manual (latest edition). The computations should be in such form as to allow for timely and consistent review and also to be made a part of the permanent SD1 record for future reference. All drainage design and sediment basin calculations shall be sealed by a Kentucky Licensed Professional Engineer;
17. For property to be developed in sections or phases, detailed plans containing the above information need not be submitted for the entire property. Plans conforming to these criteria should be submitted for the section or phase to be developed along with conceptual or schematic plans for the entire property in order to show the relationship of the relevant section to the entire development plan.

#### Section 409 SUBMITTAL REQUIREMENTS FOR STORM SEWER PERMITS

All Storm Sewer Permit submittals to SD1 shall contain the following information:

1. Completed Storm Water Permit application;
2. Project name, date, north arrow, location map (a map which clearly shows the location of the property in respect to existing road and landmarks);

3. A scale not smaller than 1 inch equals 100 feet;
4. All existing and proposed public and private right-of-ways and streets;
5. Existing and proposed contours of not more than two (2) feet within the areas to be disturbed and of not more than five (5) feet on the remainder of the property shall be clearly marked with the elevation based on mean sea level (USGS Datum) and the location and description of the benchmark used;
6. Profiles of all proposed storm water pipes, and structures including percent grade, pipe diameters, material of pipe, pipe lengths, and invert elevations. Profiles shall also show all existing and proposed public utility (water main, storm sewer and sanitary sewer) crossings and all existing private utility (gas, electric, telephone) crossings. The structures (inlets, catch basins, junction boxes, headwalls, manholes, etc.) shown on the profiles shall be numbered and correspond to those structures shown on the plan views. Hydraulic grade lines for the 25-year Check Storm shall be shown for all storm water drainage systems either on the profiles in the plans or on profiles included in the drainage computations report. Connections to existing control measures, facilities and/or pipes shall be shown and labeled;
7. Easements shall be shown for all storm water drainage systems. Based on SD1's evaluation, label each storm water drainage system as public or private. For those systems to be dedicated to SD1 after construction, at least a 20-foot public easement shall be shown and dedicated to SD1;
8. Location and identification of any storm water drainage system (natural or man-made) on the site or within one hundred feet (100') of the development boundary;
9. Provisions for control of erosion and sedimentation, indicating the temporary and permanent control practices and measures, which will be implemented during all phases of clearing, grading and construction. All erosion and sediment control best management practices (silt fence, rock check dams, sediment basins, etc.) shall be numbered for identification and reference purposes. Show all affected or disturbed areas during construction on or within close proximity of the site (i.e., excavation, fill or storage);
10. Provisions for control of all construction site waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;
11. Computations to support all drainage shall be submitted to SD1 for review. The computations should be in such form as to allow for timely and consistent review and also to be made a part of the permanent SD1 record for future reference. All design calculations shall be sealed by a Kentucky Licensed Professional Engineer.

#### Section 410 SUBMITTAL REQUIREMENTS FOR STORM SEWER CONNECTION PERMITS

All Storm Sewer Connection Permit submittals to SD1 shall contain the following information:

1. Completed Storm Water Connection Permit application;

2. Project name, date, north arrow, location map (a map which clearly shows the location of the property in respect to existing road and landmarks);
3. A scale not smaller than 1 inch equals 100 feet;
4. Profiles of all proposed storm water pipes, and structures including percent grade, pipe diameters, material of pipe, pipe lengths, and invert elevations. The structures (inlets, catch basins, junction boxes, headwalls, manholes, etc.) shall be numbered. Hydraulic grade lines for the 25-year Check Storm shall be shown for all storm water drainage systems either on the profiles in the plans or on profiles included in the drainage computations report. Connections to existing control measures, facilities and/or pipes shall be shown and labeled;
5. Computations to support all drainage shall be submitted to SD1 for review. The computations should be in such form as to allow for timely and consistent review and also to be made a part of the permanent SD1 record for future reference. All design calculations shall be sealed by a Kentucky Licensed Professional Engineer.

Note: This information is only used to determine the effects on SD1's owned system(s), additional information may be requested.

Section 411 CERTIFICATIONS

The following certifications are required as part of all permit application submittals:

Applicant/Owner/Person Financially Responsible Certification: "I hereby certify that all land disturbing construction and associated activity pertaining to this permit application shall be accomplished pursuant to the approved plans. The information submitted with the application is, to the best of my knowledge and belief, true, accurate, and complete."

Printed Name	Signature
Owner/Person Financially Responsible	Owner/Person Financially Responsible

Right of Entry Certification for Inspection: "I hereby grant authorization to Sanitation District No. 1 and/ or other designated representatives the right of access to the site at all times for the purpose of site inspections during the period of construction and to perform maintenance inspections following the completion of the land disturbing activity."

Printed Name	Signature
Owner/Person Financially Responsible	Owner/Person Financially Responsible

Designer Certification: "I hereby certify to the best of my knowledge and belief that the measures in this plan are designed to control erosion, retain sediment on the site, and manage storm water in a manner that is in compliance with the

requirements contained in the Sanitation District No. 1 rules and regulations.”

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Signature

Kentucky Professional License Number

A stamp or a seal of a Kentucky Licensed Professional Engineer, architect, landscape architect or land surveyor; the scope of work performed by such professionals in conjunction with the permit submission is limited to that permitted by their respective Commonwealth of Kentucky licensing authorities.

#### Section 412 APPROVAL PERIOD

Permits shall remain in effect until the permitted activities are completed and upon SD1 issuing the approved Notice of Termination for the permit. Grading work or building construction must begin within two years after the permit is issued and appropriate and timely progress of major construction activities toward completion of work must occur, or the permit will be voided. The permit will be voided upon meeting permit requirements as deemed necessary by SD1 to consider the site stable and storm water management is sufficient.

#### Section 413 TRANSFER OF PERMITS

Permits are issued to a specific user for a specific operation and may not be assigned, transferred or sold to a new owner, a new user, different premises or a new or changed operation except upon the written consent of SD1. A Person, holding a valid permit, may submit to SD1 a request for a Land Disturbing Activity Homebuilding Permit Transfer of such permit, in writing, on a form approved by SD1 and providing such information as SD1 may request and subject to such fees as SD1 may determine. The request for transfer shall include an assumption, signed by the proposed transferee, of all obligations and liabilities under or arising out of the permit including, but not limited to, all obligations and liabilities existing prior to the transfer. Said assumption shall be effective only if the consent to transfer is granted by SD1. The written consent of SD1 to the transfer shall not, unless specifically stated therein, operate as a release of the transferor of any obligation or liability under or arising out of the permit to the date of the transfer. The request for a transfer of a permit shall be filed with SD1 prior to a change in the owner or developer of the property subject to the permit or a change in the control of the owner or developer of the property subject to the permit, however, no transfer shall be effective until the written consent of SD1 is given. A denial by SD1 of a request for transfer may be appealed in accordance with these regulations.

#### Section 414 NOTICE OF TERMINATION

All Clearing, Grading and Land Disturbance Permits and Homebuilding Permit Transfers approved by SD1 must be officially terminated through the Notice of Termination (NOT) application process. NOTs are not required for Storm Sewer or Storm Sewer Connection permits. Once all NOT requirements are satisfied, SD1 will send approval of the NOT.

NOT requirements include:

1. A Notice of Termination Application must be completed and submitted by the permittee;

2. All erosion protection and sediment control best management practices (BMPs, e.g., silt fence, sediment basins, etc.) installed on-site must be removed. However, BMPs protecting the storm water control measures and related structures may be left in place until the establishment of vegetation;
3. Record drawings for the permitted project must be submitted. Record drawings must comply with all requirements of "SD1 Record Drawing Requirements";
4. All Erosion and Sediment Control violations and/or outstanding construction related activity must be sufficiently addressed;
5. All outstanding Administrative Enforcement Fines and/or permit fees must be paid in full.

Additional NOT requirements for Land Disturbance Permits include:

6. All post construction BMP punch list item(s) must be sufficiently addressed;
7. A Post-Construction Storm Water Facility Maintenance Agreement must be completed and submitted, where applicable.

#### Section 415 OTHER DESIGN METHODS

Methods of design other than those indicated in these regulations may be considered in those cases where experience indicates they are appropriate. However, any variations from the practices and procedures established herein must have the expressed written approval of SD1 prior to their use.

#### Section 416 CONNECTIONS TO STORM DRAINAGE SYSTEMS NOT OWNED BY SD1

Issuance of a Land Disturbance permit by SD1 to make such a connection does not represent a consent on the part of a municipality, county or state agency that owns or operates the storm water drainage system not owned by SD1.

SD1 may request comment from any other affected municipality, county or state agency, as determined by SD1, as to the impact of such connection on the storm water drainage system not owned by SD1.

#### Section 417 WAIVERS

SD1 may grant a waiver from the requirements of these regulations for individual land disturbing activities based on the criteria set forth below. A written request for a waiver shall be provided to SD1 and shall state the specific waiver sought and the reasons with supporting data. A separate written waiver request shall be required if there are subsequent additions, extensions or modifications that would alter the approved storm water runoff characteristics of the land disturbing activity receiving a waiver. SD1 shall evaluate the following factors in determining whether to grant a waiver:

1. The post-construction storm water management requirement for water quality control is a federal and state requirement, therefore SD1 does not have the authority to issue



a waiver for this requirement. See Section 419 Off-site Mitigation for Post-Constriction Water Quality for alternative approaches.

2. A project may be eligible for a waiver of storm water management requirements for water quantity control if the applicant can demonstrate that:
  - a) The proposed project will have no significant adverse impact on the receiving waters or downstream properties;
  - b) The imposition of peak control requirements for rates of storm water runoff would aggravate downstream flooding;
  - c) The granting of the waiver will not adversely affect the public health, safety or welfare, will not alter the essential character of the general vicinity, will not cause a hazard or a nuisance to the public and will not allow an unreasonable circumvention of the requirements of these regulations;
  - d) The requested waiver arises from special circumstances, which do not generally apply to relevant conditions in the general vicinity.

Within thirty (30) days of the submittal of an application for a waiver, SD1 shall issue a final determination to the application either granting it, with or without qualifications, or denying it. In all cases, except where the application is granted without qualification, SD1 shall set forth the reasons for its decision.

#### Section 418 VARIANCE

SD1 may grant a variance from requirements of these regulations for individual land disturbing activities based on the criteria set forth below. A written request for variance shall be provided to SD1 and shall state the specific variance(s) sought and the reasons with supporting data. A separate written variance request shall be required if there are subsequent additions, extensions or modifications that would alter the approved storm water runoff characteristics of the land disturbing activity receiving a variance. SD1 shall evaluate the following factors in determining whether to grant a variance:

1. The post-construction storm water management requirement for water quality control is a federal and state requirement, therefore SD1 does not have the authority to issue a variance for this requirement. See Section 419 Off-site Mitigation for Post-Constriction Water Quality for alternative approaches;
2. The granting of the variance will not adversely affect the public health, safety or welfare, will not alter the essential character of the general vicinity, will not cause a hazard or a nuisance to the public and will not allow an unreasonable circumvention of the requirements of these regulations;
3. The requested variance arises from special circumstances, which do not generally apply to relevant conditions in the general vicinity;
4. The granting of the variance would fulfill the intent of the regulations.

5. Compliance with the requirements of the regulations would create an adverse effect on downstream conditions or would create a greater adverse effect on downstream conditions than non-compliance;
6. The granting of the variance will not be detrimental to the public welfare, environment or injurious to other property in the vicinity of the land in question.

Within thirty (30) days of the submittal of an application for variance, SD1 shall issue a final determination to the application either granting it, with or without qualifications, or denying it. In all cases, except where the application is granted without qualification, SD1 shall set forth the reasons for its decision.

#### Section 419 OFF-SITE MITIGATION FOR POST-CONSTRUCTION WATER QUALITY

Where persons have applied for projects applying for a Land Disturbance Permit, SD1 may allow an off-site mitigation project to be implemented for post-construction water quality requirements. The owner or authorized representative must identify an off-site mitigation project of equal or greater storm water management benefit to the project it is offsetting, as determined by SD1. Off-site mitigation projects must be explicitly approved by SD1 in writing based on criteria and policy developed by SD1.

#### Section 420 COOPERATIVE AGREEMENTS

Where persons have applied for a Land Disturbance Permit, SD1 may consider a cooperative agreement where SD1 has developed a storm water management improvement project. As SD1 develops these type of projects to address flooding and other storm water and wastewater related issues, SD1 may consider cooperative agreements where the requirements of a development site can be met within the regional approach developed by SD1. Appropriate financial contribution to the project will be determined on a case by case basis, at SD1's discretion, and approved by the SD1 Board.

#### Section 421 FEES

SD1 shall charge fees to review plans and conduct site inspections in accordance with SD1's adopted fee schedule.

#### Section 422 IMPLEMENTATION PROCESS

The storm water rules and regulations became effective August 1, 2003. Projects completed prior to the effective date may not meet these regulations. The Document History provides an overview of all revisions to the Rules and Regulations and the effective date of each change.

#### Section 423 ADDITIONAL INFORMATION

Due to the variability associated with different project types, SD1 reserves the right to request additional reasonable information in order to perform the review process for issuing a permit.

## SECTION 500

### DESIGN CRITERIA AND METHODS

#### Section 501 DESIGN STORMS

The storm drainage system shall be designed to adequately handle the runoff from storms having various frequencies of occurrence from different types of development in accordance with the following general categories. To ensure the adequacy of the storm drainage system, the following minimum design storms shall be used, where applicable. Tables 1 and 2 provide a summary of these requirements.

1. All storm drainage systems, shall be designed to convey the 25-Year storm flow, such that the hydraulic grade line (HGL) is below the top of the channel or one foot below the rim of the structure. The peak flow rate resulting from the 100-Year Storm shall be safely conveyed through an overland flood route to avoid flooding damage;
2. The 2, 10, 25, 50 and 100-Year Storms shall be used to calculate pre-development runoff from a site for detention and retention basins, as outlined in Sections 700 and 800;
3. The 2, 10, 25, 50 and 100-Year Storms shall be used to determine post-development discharges for detention and retention basins, as outlined in Sections 700 and 800;
4. Additional controls or localized restrictions may be placed on specific sites, as deemed necessary by SD1. For example, sites where pre-existing downstream problems or hydrologic and hydraulic models developed for the area exist. Conditions for design in such cases shall be as required by SD1;
5. Sediment basins, if used, shall meet the design criteria of the Kentucky Erosion Prevention and Sediment Control Best Management Practices Planning and Technical Specifications Manual (latest edition).
6. Channel linings should be designed to control the erosive flows as described in Section 600.

<b>Table 1: Summary of Storm Sewer Design Requirements</b>			
<b>Storm Sewer Ownership</b>	<b>10-year Storm within pipe</b>	<b>25-year HGL with 1-ft Freeboard within Structure</b>	<b>25-year HGL within Structure</b>
Public	X	X	
Private			X

Facility Type	Design Storms					
	3-month	2-year	10-year	25-year	50-year	100-year
Detention/ Retention Basins (Separate Sewer)		X*Q-critical	X	X	X	X
Detention/ Retention Basins (Combined Sewer)	X	X	X	X	X	X

\*Q-critical: Max discharge  $\leq 0.4$  cfs per acre of disturbance within the pre-developed drainage area + the 2-year peak discharge from the remaining un-disturbed pre-developed drainage area to each discharge/outlet point leaving the project site unless discharging to the Ohio or Licking River.

Note: Post-developed peak discharges must not exceed pre-developed peak discharges.

### Section 502 RUNOFF COMPUTATION METHODS

Numerous methods of rainfall-runoff computation are available on which the design of storm drainage and flood control systems may be based. The Rational Method and the Soil Conservation Service (SCS) hydrologic methods (available in TR-20, TR-55 and HEC-1) are accepted as adequate for determining peak runoff rates for drainage areas totaling 100 acres or less.

For systems greater than 100 acres, the SCS hydrologic methods or the "Regional Method" of the Kentucky Transportation Cabinet, Department of Highways shall be used to determine peak runoff rates. The method of analysis must remain consistent when drainage areas are combined. The method, which applies to the largest combined drainage area should be used. The engineer may use other methods with prior approval by SD1.

The Modified Rational Method (MRM) may be used for design of storm water control facilities with a contributing drainage area to a storm water control facility of ten (10) acres or less.

### Section 503 RATIONAL METHOD

The Rational Method may only be used to calculate peak discharge rates for drainage areas of 100 acres or less. The Rational Method shall not be used to calculate the volume of storm water runoff or develop runoff hydrographs.

$$Q = CiA$$

where:

Q = peak runoff quantity in cubic feet per second;

C = runoff coefficient varying with the amount of imperviousness and other characteristics of the drainage area. Table 4 presents ranges for "C" values based on specific land use types;

i = average intensity of precipitation in inches per hour, varying with frequency of storm occurrence, duration or concentration time, and area of the tributary watershed;

A = area in acres of the tributary watershed.

Note: The rainfall intensity (i) in inches per hour, for Northern Kentucky, can be determined from NOAA Atlas 14 (Volume2, Version3) for the Covington WSO Airport (Site ID 15-1855) or by using the following formula and constants (as shown in Table 3) developed by the Kentucky Transportation Cabinet and updates based on the NOAA Atlas 14 data:

$$I_{RI} = B/(T_c + D)^E$$

where:

$I_{RI}$  = rainfall intensity in inches per hour;

B, D, and E = formula constants (as shown in Table 3);

$T_c$  = time of concentration (explained further in Section 504) in minutes.

<b>Return Interval</b>	<b>B</b>	<b>D</b>	<b>E</b>
3-month	35.000	9.000	0.8950
2-year	41.5018	7.6200	0.8000
5-year	54.0284	8.8500	0.8110
10-year	65.6903	9.8000	0.8240
25-year	43.9684	6.3300	0.7020
50-year	40.0295	5.2300	0.6590
100-year	34.3934	3.7800	0.6050

#### Section 504 TIME OF CONCENTRATION

The time of concentration is the time associated with the travel of runoff from an outer point that best represents the shape of the contributing areas. Runoff from a drainage area usually reaches a peak at the time when the entire area is contributing, in which case the time of concentration is the time for a drop of water to flow from the hydraulically most remote point in the watershed to the point of interest. Runoff may reach a peak prior to the time the entire drainage area is contributing. Sound engineering judgment should be used to determine the time of concentration. The time of concentration to any point in a storm drainage system is a combination of the sheet flow (overland), the shallow concentrated flow and the channel flow, which includes storm sewers. The minimum time of concentration for any area shall be 6 minutes.

#### Section 505 TIME OF CONCENTRATION CALCULATIONS

The Soil Conservation Service TR-55 method for calculating the time of concentration shall be used for all of pre-and post-construction runoff analyses. The overland flow method may be used to calculate the time of concentration for individual inlets with a

contributing area of one (1) acre or less.

**Section 506 RUNOFF COEFFICIENTS**

Runoff coefficients (C) for the land uses shown in Table 4 must be used unless actual impervious areas are calculated and composite (C) factors are determined and submitted. When Composite (C) factors are used, impervious areas with a C = 0.95 and all other areas with a C = 0.40 shall be used.

<b>Table 4 – Rational Method Runoff Coefficients for Composite Analysis</b>		
<b>Land Use Description</b>	<b>Average Percent Imperviousness</b>	<b>Runoff Coefficient (C)</b>
Natural and Undisturbed Areas	Varies	0.40
Single Family Residential Average Lot Size/Width	Varies (See Below for Value)	0.43 – 0.76 (See Below for Value)
3 acres/300 feet	6	0.43
2 acres/200 feet	7	0.44
1 acres/100 feet	12	0.47
1/2 acre/100 feet	23	0.53
12,500 sq. ft./80 feet	34	0.59
9,000 sq. ft./70 feet	42	0.63
7,500 sq. ft./60 feet	44	0.64
6,000 sq. ft./50 feet	48	0.66
< 6,000 sq. ft./<50 feet	65	0.76
Industrial	72	0.80
Multi-Family Residential	75	0.81
Gravel – Not Compacted	Varies	0.65-0.80
Gravel – Compacted	Varies	0.90-0.95
Commercial/Office	85	0.87
Impervious Areas Including; Pavement, Roofs, Drives, Sidewalks, etc.	100	0.95

**Section 507 SOIL CONSERVATION SERVICE METHOD**

The Soil Conservation Service (SCS) Method may be used to calculate the peak discharge rates; develop runoff hydrographs for basins and sub-basins; determine runoff volumes; and provide inflow information to determine the required storage volume for detention and retention basins. The SCS Method is the preferred method for performing hydrologic analysis. The SCS Method will utilize the formulas, constants and data as currently provided by the U.S. Natural Resources Conservation Service. The Soil Conservation Service utilizes a 24-hour storm duration, which is considered to be acceptable for Northern Kentucky. When the Soil Conservation Service methods are used, the Type II rainfall distribution shall be used. The rainfall depths for the 24-hour storm are found in the NOAA Atlas 14 (Volume 2, Version 3) for the Covington WSO Airport (Site ID 15-1855) using the upper bound of the 90% confidence interval and are included in Table 5:

<b>Table 5: 24-Hour Storm Rainfall Depths</b>	
<b>Storm Frequency</b>	<b>24-Hour Rainfall Depth (in.)</b>
3-month	1.84
2-Year	3.22
10-Year	4.47
25-Year	5.20
50-Year	5.77
100-Year	6.34

The updated 24-Hour Rainfall Depths apply to projects permitted following the effective date of these Rules and Regulations.

For detailed information, the user is referred to the following Soil Conservation Service publications:

1. National Engineering Handbook (NEH) Section 4 Hydrology, Amendment 7;
2. TR-20: Computer Program for Project Formulation, Hydrology;
3. TR-55: Urban Hydrology for Small Watersheds;
4. TP-149: A Method for Estimating Volume and Rate of Runoff in Small Watersheds.

Section 508 KENTUCKY TRANSPORTATION CABINET REGIONAL METHOD

The Regional Method of the Kentucky Transportation Cabinet, Department of Highways (Regional Method) may be used to calculate the peak discharge rates when required by regulatory agencies such as the Kentucky Division of Water. The Regional Method will utilize the formulas, constants and data from the current Drainage Guidance Manual, Kentucky Transportation Cabinet, Department of Highways.

Section 509 MODIFIED RATIONAL METHOD

The Modified Rational Method (MRM) may be used for design of storm water control facilities. The maximum contributing drainage area to a storm water control facility designed with the MRM is ten (10) acres. If the Modified Rational Method is used by computer program, the storm duration used shall be the one that produces the maximum storage. If calculating by hand, the duration shall be greater than the time of concentration.

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## SECTION 600

### DESIGN OF STORM WATER DRAINAGE SYSTEMS

#### Section 601 PURPOSE OF STORM DRAINAGE SYSTEMS

Storm drainage systems are designed to collect and convey storm water runoff from roads and other locations where the accumulation of storm water is undesirable. The objective is to remove runoff from an area fast enough to avoid unacceptable amounts of ponding damage and inconvenience.

Storm drainage systems that will be publically dedicated to local government or SD1 shall be designed using the methods previously described in Section 500 and submittals for review by SD1 shall meet the requirements identified for public systems below.

Storm drainage systems on private sites that will not be accepted for maintenance and operation by a local government or SD1 shall be designed to ensure against impacts of flooding and property losses on off-site properties and drainage facilities. Storm drainage systems on these sites shall be designed using the methods previously described in Sections 500 and submittals for review by SD1 shall meet the requirements identified for private systems below.

#### Section 602 PEAK DISCHARGE CALCULATIONS

**Public and Private:** The method of runoff calculation for determining peak discharge (Q) for a drainage area shall be the methods described in Section 500.

#### Section 603 SEWER FLOW TIMES

**Public and Private:** Flow times in sewers or conduits to the point of design may be determined from the hydraulic properties of the sewers upstream of that point, assuming average flow-full velocity at the proposed sewer slopes.

#### Section 604 STORM DRAINAGE SYSTEMS DESIGN

**Public and Private:** Storm drainage systems shall be designed to carry peak flows as determined by the methods described in Section 500. For the design storm, the drainage system shall be designed as open channel (non-surcharged) flow. Sizes shall be determined by Manning's formula using a range of roughness coefficients ( $N=0.009 - 0.024$ ). If the post-development peak discharges exceed pre-development when entering an existing storm drainage system, the existing storm drainage system shall be evaluated to the most downstream point of the existing system to confirm that sufficient capacity is available for any increase in flows.

#### Section 605 SITE GRADING AND DRAINAGE

**Public and Private:** Storm water runoff from permitted sites shall not have an adverse impact on the adjacent properties.

### Section 606 MINIMUM PIPE SIZES

**Public:** The minimum diameter for public storm sewer pipe shall be 15 inches for inlet headwalls and 12 inches for systems with a catch basin at the initial point.

### Section 607 PIPE VELOCITIES

**Public:** Velocities in public storm sewer pipes, when flowing at the design flows, shall not be less than 2.0 feet per second and not greater than 25 feet per second and shall be included in the drainage calculations. Excessive velocities should be avoided to prevent hydraulic grade line (HGL) problems and the potential for erosion where the system outfalls. Velocities shall be non-erosive at the re-entrance into the receiving channel. The outlet erosion protection must be designed per SD1 Standard Drawing No. STM-21 or STM-22 or using other SD1 approved methods. Outlet velocities for all pipes and structures shall not exceed 15 feet per second, unless approved by SD1 on a case by case basis.

### Section 608 PIPE GRADES

**Public:** Sewers on 20 percent slopes or greater shall be anchored securely with concrete anchors or equal, spaced as follows:

1. Not over 36 feet center to center on grades 20 percent and up to 35 percent;
2. Not over 24 feet center to center on grades 35 percent and up to 50 percent; and
3. Not over 16 feet center to center on grades 50 percent and over.

### Section 609 HYDRAULIC GRADE LINES

**Public:** To ensure against surface ponding or street flooding, the hydraulic grade line (HGL) in any public inlet, catch basin or manhole must be a minimum of one (1) foot below the rim elevation of the structure for the 25-Year Storm. The HGL for the 25-Year Storm and outlet velocities shall be shown on all profiles of the public storm water drainage system on the plans or on storm sewer profiles, or in a graph included with the drainage calculations.

**Private:** To ensure proper conveyance of storm water runoff to the control facility on private property, the submittal must include all calculations for the 25-Year storm. For storm systems where the HGL is higher than the inlet grate or manhole reference sections 700 and 800 for further guidance.

### Section 610 REDUCTION OF PIPE SIZE

**Public:** Design of all public storm sewer appurtenances shall consider the balance of energy plus the loss due to entrance in all structures having a critical change in horizontal or vertical alignment. In no case shall storm sewer pipe sizes be reduced more than one standard increment of pipe diameter due to an increase in invert gradient after balancing the energy losses within the structure, unless otherwise approved in writing by SD1.

### Section 611 CAPACITY OF INLETS

**Public:** The capacity of on-street inlets on storm sewer systems should not be less than

the quantity of flow tributary to the inlet for the design storm. Inlets at low points or sags should have extra capacity as a safeguard for street flooding from flows overtopping the street curb. A safety channel designed for the 100-year storm shall be placed at all low points or sags. Curb openings or combination inlets should be used for overflows in the event that the grate is clogged. Special inlets may be required for streets with steep gradients to provide the extra capacity such situations require. Where avoidable, inlets should not be placed along streets where driveways and/or aprons conflict with mountable roll or depressed curbing. The 10-Year Design Storm return period shall be used to design storm water inlets. The capacity of curb inlets and gutters shall accommodate the flow from a storm with an intensity of four (4) inches per hour. Design methodology utilized should be similar to those presented in manuals produced by the Kentucky Transportation Cabinet or other manuals approved by SD1. Actual spacing of inlets and catch basins shall be based on the existing requirements in the respective subdivision regulations or the Kenton County subdivision regulations if the county or city does not specify spacing for inlets and catch basins.

Provide capacity calculations of all public on street inlets with drainage areas equal to or greater than one acre.

#### Section 612 CAPACITY OF OFF-STREET YARD DRAINS

**Public:** To improve safety at yard drains, ponding or headwater submerging such windows shall not exceed a depth of 1.0 feet above the highest opening of any window at its surface for a 10-Year Design Storm. A 25-Year Storm shall be used to further ensure against flooding and property losses. All public yard drains are to have side windows. Windows shall be provided on both sides of the catch basin in sags and on upstream side only where the channel has a continuous down grade past the catch basin.

Provide capacity calculations of all public off-street yard drains with drainage areas equal to or greater than one acre.

**Private:** Yard drains should be designed in such a manner to ensure against impacts of flooding and property losses on off-site properties and drainage facilities. A 25-Year Storm shall be used to further ensure against flooding and property losses.

#### Section 613 CAPACITY OF INLET HEADWALLS

**Public:** Inlet headwalls shall be designed such that under design storm conditions, the maximum water surface elevation is not more than two (2) times the pipe diameter above the invert. A 25-Year Storm shall be used to further ensure against flooding and property losses.

Provide capacity calculations of all public off-street inlets with drainage areas equal to or greater than one acre.

**Private:** Off-street inlets with enclosure grates or other open headwalls or culverts should be designed in such a manner to ensure against impacts of flooding and property losses on off-site properties and drainage facilities. A 25-Year Storm shall be used to further ensure against flooding and property losses.

## Section 614 STORM SEWER OUTFALLS

**Public and Private:** The storm sewer outlet must not be subject to backwater conditions. In circumstances when backwater conditions are unavoidable, the design engineer shall provide calculations to show the backwater does not negatively impact the hydraulics of the system.

Standard headwalls and/or headwalls with wingwalls including rock channel protection and aprons as erosion control, shall be constructed for all outfalls. Refer to SD1 Standard Drawing No STM-21 and STM-22 for details. Suitable baffles or other energy dissipaters shall be provided if necessary to prevent erosion.

If the outfall is constructed within the jurisdictional water, additional permits from other agencies may be required. This includes but is not limited to, permits such as the US Army Corp of Engineer's Section 404 permit, the Kentucky Division of Water's Water Quality Certification and Stream Construction Permit.

## Section 615 CHANNEL PROTECTION

Erosion shall be controlled by limiting velocities, changing the channel lining or reshaping the channel to spread the flow of runoff. Channel lining materials to control erosion in open channels include the following: (1) grass covers or sod; (2) aggregate channel lining; (3) geo-textile turf reinforcement mats (TRMs) and rolled erosion control products (RECPs); (4) reinforced concrete or pre-cast paving; and (5) bioengineering practices.

Channel linings shall meet the design criteria of the Kentucky Erosion Prevention and Sediment Control Best Management Practices Planning and Technical Specifications Manual (latest edition) to prevent channel erosion.

Consideration shall be given for the construction of other methods of lining for erosion control including plunge pools, check dams, drop structures, gabions, etc. subject to approval of SD1.

If the channel is a jurisdictional water, additional permits from other agencies may be required. This includes but is not limited to, permits such as the US Army Corp of Engineer's Section 404 permit, the Kentucky Division of Water's Water Quality Certification and Stream Construction Permit.

## Section 616 CULVERTS AND BRIDGES

**Public and Private:** Culverts and bridges shall be designed in accordance with the methods given in the Drainage Guidance Manual published by the Kentucky Transportation Cabinet, Department of Highways or other applicable Kentucky Transportation Cabinet manual if approved by SD1; except that storm water quantities to be handled by the culverts and bridges shall be determined on the basis described in these standards. The allowable headwater (AHW) shall not be greater than

$$HW/D \leq 2.0.$$

where:

HW = headwater in feet;

D = pipe diameter in feet.

## SECTION 700

### POST-CONSTRUCTION STORM WATER CONTROL FACILITIES IN THE SEPARATE STORM SEWER AREA

#### POST-CONSTRUCTION WATER QUALITY CONTROLS:

##### Section 701 GENERAL CRITERIA

The purpose of post-construction storm water control measures implemented in the separate storm sewer system area is to reduce the pollution associated with storm water runoff from new development and re-development projects. Post-construction storm water runoff treatment requirements are the result of KPDES Phase II Storm Water regulations that require SD1 to develop a storm water runoff quality treatment standard for all applicable new development and re-development projects.

KPDES Phase II Storm Water regulations require SD1 to develop a locally derived water quality treatment standard that requires new development projects to implement controls to manage storm water runoff produced from the area's 80<sup>th</sup> percentile precipitation event (based on historic rainfall data).

The storm water runoff quality treatment standard for new development and re-development projects requires control measures to be designed, built, and maintained to treat, filter, infiltrate, evapo-transpire, or otherwise manage, storm water runoff to improve water quality.

##### Section 702 DESIGN REQUIREMENTS AND STANDARDS

**NEW DEVELOPMENT PROJECTS:** Any new development project that disturbs greater than or equal to one (1) acre or is part of a larger common plan of development or sale is subject to the "new development" water quality treatment standard. The runoff produced from the first 0.8 inches of rainfall from the disturbed area of the project site must pass through a water quality BMP before being discharged from the site.

**RE-DEVELOPMENT PROJECTS:** Any redevelopment project that disturbs greater than or equal to one (1) acre or is part of a larger common plan of development or sale and results in a net increase in impervious area is subject to the "redevelopment" water quality treatment standard. The runoff produced from the first 0.4 inches of rainfall from the replaced impervious area must pass through a water quality BMP before being discharged from the site. The runoff produced from the first 0.8 inches of rainfall from the additional impervious area must pass through a water quality BMP before being discharged from the site.

Post-construction storm water runoff control measures include a variety of water quality best management practices (BMP). A list of pre-approved post-construction water quality controls is included in Northern Kentucky's Storm Water Best Management Practices Manual (BMP Manual). Other post-construction water quality controls may be implemented with explicit approval in writing from SD1.

## Section 703 HIGH-QUALITY WATERS

For those areas of new development and re-development that result in a new or expanded discharge to high-quality waters, the post-construction storm water control measure must be sufficient to protect existing in-stream water uses and the level of water quality necessary to protect existing uses. The BMP Manual identifies Northern Kentucky's pollutants of concern in the design parameters of each post-construction storm water control measure. Post-construction storm water control measures that are designed and implemented in accordance with the BMP Manual will be deemed sufficient to protect high-quality waters. Any variance from the BMP Manual in the design of post-construction construction storm water control measures must be explicitly approved in writing by SD1.

## Section 704 MAINTENANCE

Proper maintenance is a requirement for all storm water control measures, as outlined in Section 1000. All owners of post-construction water quality control(s) are required to enter into a standard long-term maintenance agreement with SD1 using SD1's Post-Construction Storm Water Facility Maintenance Agreement for water quality control(s) located on individual parcel(s). For water quality controls located across multiple parcels, a Storm Water Management Facilities Easement must be provided utilizing SD1's Declaration of Standard Terms and Conditions for Storm Water Management Facilities. For water quality control(s) located within a public right-of-way, a Memorandum of Understanding must be entered into with SD1 utilizing SD1's Post-Construction Storm Water Facility Maintenance Agreement Template.

Proper maintenance and inspection of post-construction storm water control measures shall be performed in accordance with Section 1000 of these Rules and Regulations and with SD1's maintenance agreement.

## **POST-CONSTRUCTION WATER QUANTITY CONTROLS:**

### Section 705 GENERAL CRITERIA

In order to minimize runoff damage to downstream properties, sediment pollution of public and private waters and hydraulic overloading of existing drainage facilities, the peak storm water discharge from a land disturbing activity or development and re-development activities after development shall not exceed the peak pre-development at any points of discharge as outlined below. Facilities may be designed for each individual site but the use of regional facilities is encouraged.

**NEW DEVELOPMENT PROJECTS:** Any new development project that disturbs greater than or equal to one (1) acre or is part of a larger common plan of development or sale is subject to "new development" water quantity controls. The amount of water to be detained from the disturbed area of the project site shall be determined by the methods described in Sections 706 - 715 using the design criteria as referenced in Section 500.

**RE-DEVELOPMENT PROJECTS:** Any re-development project that disturbs at least one (1) acre or is part of a larger common plan of development or sale and results in a net increase in impervious area is subject to "redevelopment" water quantity controls. The amount of water to be detained from the disturbed area of the project site shall be determined by the methods described in Sections 706-715 using the design criteria as

referenced in Section 500 where the pre-development runoff coefficient is determined using the site condition within the past 10-years from the time of the permit application submittal.

#### Section 706 DESIGN METHODS

An accepted method that generates an inflow/outflow hydrograph such as the Soil Conservation Service (SCS) method or Modified Rational Method (MRM) as detailed in Section 500 shall be used. It is recommended that a computer program be used to develop these hydrographs. All documentation shall be submitted for review by SD1.

#### Section 707 DISCHARGE HYDROGRAPHS

For project sites where the pre-development peak discharge has been calculated by the Rational Method, a discharge hydrograph must be calculated for the site using one of the methods allowed in Section 500. Unlike the Modified Rational Method (MRM), the SCS Method uses the Type II rainfall distribution based upon the 24-hour steady storm duration.

#### Section 708 PRE-DEVELOPMENT RUNOFF

The pre-development site runoff rate shall be calculated for the 2, 10, 25, 50, and 100-Year Storm frequency. The entire acreage contributing to the runoff shall be included in the calculations.

#### Section 709 POST-DEVELOPMENT RUNOFF CONTROL

The post-development site runoff rate shall be calculated for the ultimate development for the site based on the 2, 10, 25, 50 and 100-Year frequency storm. The entire acreage contributing to the runoff shall be included in the calculations.

For the 2-Year frequency storm event, the post-development peak runoff rate shall be equal to or less than the pre-development Critical Flow rate (Q-critical) of the receiving stream. For projects with drainage areas less than 100 acres, the design target for Q-critical can be approximated as 0.4 cfs per acre of disturbance within the pre-developed drainage area plus the 2-year peak discharge from the remaining un-disturbed pre-developed drainage area to each discharge/outlet point leaving the project site. For projects greater than 100 acres, the design target for Q-critical may be determined utilizing sediment transport modeling as approved by SD1.

For the 10, 25, 50 and 100-Year frequency storm, the post-development peak runoff rate shall be equal to or less than the pre-development peak runoff rate at any point of discharge for the ultimate development.

Post-development runoff quantity controls are waived for direct discharges to the Ohio River or Licking River.

#### Section 710 BASIN STORAGE VOLUME AND DESIGN DISCHARGE

The minimum basin storage volume shall be the difference between the post-development and pre-development 100-Year Storm inflow and outflow hydrographs or the volume necessary to sufficiently reduce post-development discharges to a rate needed to meet

the capacity of existing culverts and drainage systems immediately downstream of the site proposed for development depending upon which volume is greater. If the basin is to be located directly on a portion of the through drainage system, volume calculations must also consider the total system flow reaching the basin. If the Modified Rational Method is used by computer program, the storm duration used shall be the one that produces the maximum storage, if calculating by hand the duration shall be greater than the time of concentration.

The peak discharge from the detention/retention basin shall be controlled by a release outlet control structure and shall not be greater than the runoff rate described in Section 709, at that particular point where the discharge occurs. The outlet control structure (including the emergency spillway, if required) shall be sized to accommodate a flow equal to the 100-Year Storm post-development discharge. The routing of the outlet structure (including the emergency spillway, if required) shall be shown based on the 100-Year Storm frequency. Trash racks, or other techniques acceptable to SD1, shall be installed on the low flow outlet in detention basins to prevent clogging.

### Section 711 DESIGN STANDARDS

These standards apply to permanent and temporary storm water detention/retention basins formed by an embankment or excavation.

1. All basins shall be designed and built with side-slopes no greater than 3:1 (three feet horizontal per one foot vertical). Dry basins shall have a minimum 1 percent bottom drainage slope. For dry basins with bottom slopes less than 2 percent, a paved channel is required.
2. The dam crest elevation shall not be less than one (1) foot above the highest water surface elevation during the 100-Year event.
3. Discharge velocities within a pipe must be controlled to the same requirements as specified in Section 600. Erosion control linings for open channels must comply with the requirements in Section 600.
4. Stage, storage, discharge, and routing calculations for the 2, 10, 25, 50 and 100-Year discharges must be submitted for review.
5. Spillways shall be protected from erosion and shall employ energy dissipation, if necessary.
6. Traditional detention basins shall be fully discharged within 36 hours of the end of the storm event and extended detention basins shall be fully discharged between 36-48 hours of the end of the storm event. If the purpose of the proposed detention basin is to provide both water quality and flood control, then the detention basin must fully discharge the water quality volume and storms up to and including the 100-Year Storm between 36 to 48 hours of the end of the storm event (60 to 72 hours from the start of a 24-Hour Storm).
7. Fencing may be required by SD1 or local governments when the location of the detention area is not easily observed or the side slopes of the basin are steeper than 4:1 (four feet horizontal per one foot vertical).



8. The designer will be required to include anti-seep collars for retention basins.
9. Access for maintenance activities shall be provided.

As stated in Section 405, SD1's issuance of a permit shall not relieve the applicant from obtaining other permits, approvals or licenses required by federal, state, or local laws, regulations or ordinances. This includes but is not limited to permits such as the US Army Corp of Engineers Section 404 permit, the Kentucky Division of Water's Water Quality Certification and Stream Construction Permit. SD1 may, but is not required to, investigate the impact of the proposed project on any municipality, county or state agency. SD1's issuance of a permit does not warrant the design, construction or maintenance of the proposed project and SD1 shall not be responsible for hydrologic or drainage issues resulting from the construction or maintenance of the proposed project.

#### Section 712 ROUTING OF STORM HYDROGRAPH THROUGH THE FACILITY

Hydrographs for the 2, 10, 25, 50 and 100-Year Storm events shall be routed through the proposed detention/retention basin using the Modified Puls Method or another method approved by SD1. A request for approval of an alternative method should be submitted to SD1 prior to running the model and shall be reviewed on a case-by-case basis.

#### Section 713 PARKING LOT STORAGE

Parking lot storage involves shallow ponding in a specifically graded area of a parking lot. The major disadvantage is the inconvenience to users during the ponding function. Clogging of the flow control device and icy conditions can create maintenance and safety problems. This method is intended to control the runoff directly from the parking area and is not appropriate for storing large volumes. Parking lot storage shall generally be limited to those areas served by combined sewers; primarily in the extremely urbanized areas of the counties. Parking lot storage may be approved in separate sewer areas on a case-by-case basis with property owner written approval.

#### Section 714 GENERAL PARKING LOT STORAGE DESIGN REQUIREMENTS

General design requirements include:

1. Maximum water depth - 8 inches.
2. Minimum distance of ponding area from buildings - 10 feet.
3. Maximum surface slope - 5.0%
4. Minimum surface slope - 1.0%

#### Section 715 MAINTENANCE RESPONSIBILITIES

Unless dedicated to and accepted by a local government or SD1, the owner of a detention/retention basin and/or the developer of each subdivision shall be responsible for properly maintaining each basin in order for such facility to function according to its design and purpose. Maintenance responsibility and maintenance provisions for the facility shall be noted on the submittal plans, including access roads. If publicly dedicated, the facility

shall be shown on the Final Plat submitted to the appropriate local government or SD1. In residential subdivisions, all publicly dedicated facilities shall be deeded to the appropriate local government or SD1 and the area shall be shown as a Lot on the Final Plat. For any retention basin, only the appropriate inlet structures and outlet structures shall be dedicated to the appropriate local government or SD1. The area of the pond or lake shall be owned and maintained by the adjoining residents. This shall include maintaining the shoreline and removing sediment, and shall be included in the Subdivision's Restricted Covenants, if applicable.

## SECTION 800

### POST-CONSTRUCTION STORM WATER CONTROL FACILITIES IN THE COMBINED SEWER AREA

#### POST-CONSTRUCTION VOLUME REDUCTION CONTROLS:

##### Section 801 GENERAL

To manage capacity in the combined sewer system and to reduce combined sewer overflows, post-construction storm water control measures are implemented in the combined sewer system area. A reduction in storm water entering the combined sewer system results in a decrease in combined sewer overflow volume, and ultimately, an improvement in water quality.

##### Section 802 DESIGN REQUIREMENTS AND STANDARDS

**NEW DEVELOPMENT PROJECTS:** Any development project that disturbs 10,000 square feet or more of land and adds 2,500 square feet or more of impervious area is subject to the “new development” post-construction volume reduction requirements. Runoff generated from the first 0.8 inches of rainfall from the disturbed area of the project site must be passed through a volume-control BMP before being discharged from the site.

**RE-DEVELOPMENT PROJECTS:** Any development project that disturbs 10,000 square feet or more of land and adds less than 2,500 square feet of impervious area is subject to the “re-development” post-construction volume reduction requirements. Annual runoff from the site at any given point of discharge must be reduced by 15% utilizing one of the following methods:

- a. Pass the runoff generated from the first 0.8 inches of rainfall through a volume-control BMP before being discharged from the site;
- b. Reduce the existing impervious area such that annual runoff from the site is reduced by 15% (refer to the figure titled “Impervious Area Reductions to Achieve 15% Runoff Volume Reductions” within Chapter 3.2.1 of the SD1 Storm Water BMP Manual); or,
- c. A combination of (a) and (b) above to achieve 15% reduction in annual runoff from the existing site at any given point of discharge.

Post-construction storm water control measures include a variety of volume-based BMPs, such as infiltration practices and water reuse. A list of pre-approved post-construction storm water volume controls is included in Northern Kentucky’s Storm Water Best Management Practices Manual (BMP Manual). Other post-construction volume reduction controls may be implemented with explicit approval in writing from SD1.

##### Section 803 MAINTENANCE

Proper maintenance is a requirement for all storm water control measures, as outlined in Section 1000. All owners of post-construction volume reduction controls are required to enter into a standard long-term maintenance agreement with SD1 utilizing SD1’s Post-Construction Storm Water Facility Maintenance Agreement for water quality control(s) located on individual parcel(s). For water quality controls located across multiple parcels, a Storm Water Management Facilities Easement must be provided utilizing SD1’s

Declaration of Standard Terms and Conditions for Storm Water Management Facilities. For water quality control(s) located within a public right-of-way, a Memorandum of Understanding must be entered into with SD1 utilizing SD1's Post-Construction Storm Water Facility Maintenance Agreement Template. Proper maintenance and inspection of post-construction storm water control measures shall be performed in accordance with Section 1000 of these Rules and Regulations and with SD1's maintenance agreement.

## **POST-CONSTRUCTION WATER QUANTITY CONTROLS:**

### **Section 804 GENERAL CRITERIA**

In order to minimize runoff damage to downstream properties, sediment pollution of public and private waters and hydraulic overloading of existing drainage facilities, the peak storm water discharge from a land disturbing activity or development and re-development activities after development shall not exceed the peak pre-development discharges as outlined below. Facilities may be designed for each individual site but the use of regional facilities is encouraged.

**NEW DEVELOPMENT PROJECTS:** Any new development project that disturbs greater than or equal to 10,000 square feet or is part of a larger common plan of development or sale is subject to "new development" water quantity controls. The amount of water to be detained from the disturbed area of the project site shall be determined by the methods described in the Sections 805 - 814 using the design criteria as referenced in Section 500.

**RE-DEVELOPMENT PROJECTS:** Any re-development project that disturbs greater than or equal to 10,000 square feet or if part of a larger common plan of development or sale and results in a net increase in impervious area is subject to "redevelopment" water quantity controls. The amount of water to be detained from the disturbed area of the project site shall be determined by the methods described in Sections 805 - 814 using the design criteria as referenced in Section 500 where the pre-development runoff coefficient is determined using the site condition within the past 10-years from the time of the permit application submittal.

### **Section 805 DESIGN METHODS**

An accepted method that generates an inflow/outflow hydrograph such as the Soil Conservation Service (SCS) method or Modified Rational Method (MRM) as detailed in Section 500 shall be used. It is recommended that a computer program be used to develop these hydrographs. All documentation shall be submitted for review by SD1.

### **Section 806 DISCHARGE HYDROGRAPHS**

For project sites where the pre-development peak discharge has been calculated by the Rational Method, a discharge hydrograph must be calculated for the site using one of the methods allowed in Section 500. Unlike the Modified Rational Method (MRM), the SCS Method uses the Type II rainfall distribution based upon the 24-hour steady storm duration.

### **Section 807 PRE-DEVELOPMENT RUNOFF**

The pre-development site runoff rate shall be calculated for the 3-Month, 2-Year, 10-Year, 25-Year, 50-Year, and 100-Year Storm frequency. The entire acreage contributing to the

runoff shall be included in the calculations.

#### Section 808 POST-DEVELOPMENT RUNOFF CONTROL

The post-development site runoff rate shall be calculated for the ultimate development for the site based on the 3-Month, 2-Year, 10-Year, 25-Year, 50-Year and 100-Year frequency storm. The entire acreage contributing to the runoff shall be included in the calculations. The post-development runoff rate shall be equal to or less than the pre-development runoff rate at any point of discharge for the ultimate development.

#### Section 809 BASIN STORAGE VOLUME AND DESIGN DISCHARGE

The minimum basin storage volume shall be the difference between the post-development and pre-development 100-Year Storm inflow and outflow hydrographs or the volume necessary to sufficiently reduce post-development discharges to a rate needed to meet the capacity of existing culverts and drainage systems immediately downstream of the site proposed for development depending upon which volume is greater. If the basin is to be located directly on a portion of the through drainage system, volume calculations must also consider the total system flow reaching the basin. If the Modified Rational Method is used by computer program, the storm duration used shall be the one that produces the maximum storage, if calculating by hand the duration shall be greater than the time of concentration.

The peak discharge from the detention/retention basin shall be controlled by a release outlet structure and shall not be greater than a pre-developed peak runoff rate based on a 3-Month, 2-Year, 10-Year, 25-Year, 50-Year and 100-Year Storm frequency at that particular point where the discharge occurs. The outlet structure (including the emergency spillway, if required) shall be sized to accommodate a flow equal to the 100-Year Storm post-development discharge. The routing of the outlet structure (including the emergency spillway, if required) shall be shown based on the 100-Year Storm frequency. Trash racks, or other techniques acceptable to SD1, shall be installed on the low flow outlet in detention basins to prevent clogging.

#### Section 810 DESIGN STANDARDS

These standards apply to permanent and temporary detention/retention basins formed by an embankment or excavation.

1. All basins shall be designed and built with side-slopes no greater than 3:1 (three feet horizontal per one foot vertical). Dry basins shall have a minimum 1 percent bottom drainage slope. For dry basins with bottom slopes less than 2 percent, a paved channel is required.
2. The dam crest elevation shall not be less than one (1) foot above the highest water surface elevation during the 100-Year Storm Event.
3. Discharge velocities within a pipe must be controlled to the same requirements as specified in Section 606. Erosion control linings for open channels must comply with the requirements in Section 600.
4. Stage, storage, discharge, and routing calculations for the 2, 10, 25, 50, and 100-

Year discharges must be submitted for review.

5. Spillways shall be protected from erosion and shall employ energy dissipation, if necessary.
6. Traditional detention basins shall be fully discharged within 36 hours of the end of the storm event and extended detention basins shall be fully discharged between 36-48 hours of the end of the storm event. If the purpose of the proposed detention basin is to provide both water quality and flood control, then the detention basin must fully discharge the water quality volume and storms up to and including the 100-Year Storm between 36 to 48 hours of the end of the storm event (60 to 72 hours from the start of a 24-Hour Storm).
7. Fencing may be required by SD1 or local governments when the location of the detention area is not easily observed or the side slopes of the basin are steeper than 4:1 (four feet horizontal per one foot vertical).
8. The designer will be required to include anti-seep collars, for retention basins.
9. Access for maintenance activities shall be provided.

As stated in Section 405, SD1's issuance of a permit shall not relieve the applicant from obtaining other permits, approvals or licenses required by federal, state, or local laws, regulations or ordinances. This includes but is not limited to permits such as the US Army Corp of Engineers Section 404 permit, the Kentucky Division of Water's Water Quality Certification and Stream Construction Permit. SD1 may, but is not required to, investigate the impact of the proposed project on any municipality, county or state agency. SD1's issuance of a permit does not warrant the design, construction or maintenance of the proposed project and SD1 shall not be responsible for hydrologic or drainage issues resulting from the construction or maintenance of the proposed project.

#### Section 811 ROUTING OF STORM HYDROGRAPH THROUGH THE FACILITY

Hydrographs for the 3-Month, 2-Year, 10-Year, 25-Year, 50-Year, and 100-Year Storm events shall be routed through the proposed detention/retention basin using the Modified Puls Method or another method approved by SD1. A request for approval of an alternative method should be submitted to SD1 prior to running the model and shall be reviewed on a case-by-case basis.

#### Section 812 PARKING LOT STORAGE

Parking lot storage involves shallow ponding in a specifically graded area of a parking lot. The major disadvantage is the inconvenience to users during the ponding function. Clogging of the flow control device and icy conditions can create maintenance and safety problems. This method is intended to control the runoff directly from the parking area and is not appropriate for storing large volumes. Parking lot storage shall generally be limited to those areas served by combined sewers; primarily in the extremely urbanized areas of the counties. Parking lot storage may be approved in the combined sewer areas on a case-by-case basis with property owner written approval.

### Section 813 GENERAL PARKING LOT STORAGE DESIGN REQUIREMENTS

General design requirements include:

1. Maximum water depth - 8 inches.
2. Minimum distance of ponding area from buildings - 10 feet.
3. Maximum surface slope - 5.0%
4. Minimum surface slope - 1.0%

### Section 814 MAINTENANCE RESPONSIBILITIES

Unless dedicated to and accepted by a local government or SD1, the owner of a detention/retention basin and/or the developer of each subdivision shall be responsible for properly maintaining each basin in order for such facility to function according to its design and purpose. Maintenance responsibility and maintenance provisions for the facility shall be noted on the submittal plans, including access roads. If publicly dedicated, the facility shall be shown on the Final Plat submitted to the appropriate local government or SD1. In residential subdivisions, all publicly dedicated facilities shall be deeded to the appropriate local government or SD1 and the area shall be shown as a Lot on the Final Plat. For any retention basin, only the appropriate inlet structures and outlet structures shall be dedicated to the appropriate local government or SD1. The area of the pond or lake shall be owned and maintained by the adjoining residents. This shall include maintaining the shoreline and removing sediment, and shall be included in the Subdivision's Restricted Covenants, if applicable.

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## **SECTION 900**

### **SOIL EROSION, SEDIMENT AND SLOPE CONTROL**

#### **Section 901 GENERAL REQUIREMENTS**

Land disturbing activities that disturb an area greater than or equal to one (1) acre or are part of a larger planned common plan of development or sale (e.g. several clustered individual building lots cumulatively totaling 1 acre or greater) shall obtain coverage under and comply with the Kentucky Pollutant Discharge Elimination System (KPDES) General Permit for Storm Water Discharges Associated with Construction Activities (KYR10).

The owner or authorized representative responsible for the land disturbing activity shall notify SD1 at least seventy-two (72) hours before initiation of such activity. All disturbed areas are to be maintained to prevent erosion and excessive runoff.

If current erosion and sediment control measures are not adequately protecting site or if drainage paths have changed that cause runoff to bypass existing protections, additional erosion and sediment control measures may be required during the period of the land disturbing activity to meet the requirements in these regulations.

#### **Section 902 DISTURBANCE PRIOR TO ISSUANCE OF SD1 PERMIT**

No permit will be issued where the site has been cleared, graded, stripped, excavated, de-vegetated or otherwise disturbed so that slipping, erosion and/or water pollution has or may reasonably be expected to occur until such conditions are corrected to the satisfaction of SD1.

#### **Section 903 STORM WATER POLLUTION PREVENTION PLAN**

A Storm Water Pollution Prevention Plan (SWPPP) shall be prepared and implemented in accordance with KYR10. All construction site operators working on site shall comply with requirements of the SWPPP and KYR10.

The SWPPP shall be made available to the U.S. EPA, Kentucky Division of Water (KDOW), SD1, and other government agencies and officials for review during on-site inspections or upon request.

#### **Section 904 DESIGN REQUIREMENTS**

For land disturbing activities, the following requirements shall be followed:

1. All erosion and sediment control best management practices shall be designed and implemented, at a minimum, in accordance with KYR10.
2. Final stabilization is required on those portions of the project where construction activities have permanently ceased and should begin within fourteen (14) days of the date of cessation of construction activities in accordance with KYR10.

Temporary stabilization is required on those portions of the project where construction activities have temporarily ceased and should begin within fourteen (14) of the date of

cessation of construction activities in accordance with KYR10. When snow cover causes delays, stabilization shall begin as soon as possible. Stabilization practices include seeding, mulching, placing sod, planting trees or shrubs, and using geotextile fabrics and other appropriate measures. Seeding rates, dates, and materials may be obtained from the local Natural Resources Conservation Service Field Office.

3. Sediment basins (debris basins, desilting basins, or sediment traps) shall meet the design criteria of the Kentucky Erosion Prevention and Sediment Control Best Management Practices Planning and Technical Specifications Manual (latest edition).
4. Sediment basins (debris basins, desilting basins, or sediment traps) shall be installed during initial grading at locations that will provide the best protection from off-site damages.
5. Concentrated flow areas, including storm sewer inlets, will need proper water control barriers to slow the runoff and control sediment to meet the design criteria of the Kentucky Erosion Prevention and Sediment Control Best Management Practices Planning and Technical Specifications Manual (latest edition).
6. Storm drains within public right-of-ways should have non-blinding sediment control barriers such as inserts. If blinding barriers are used, the permittee is responsible for any flooding and/or property damage resulting from the blockage of the storm drain.
7. Site perimeter controls are required and shall be installed to prevent the deposit of soil and debris from graded surfaces onto public streets, into drainage channels or sewers, or onto adjoining land.
8. For individual building sites, erosion prevention and sediment controls shall be installed and maintained to prevent the deposit of soil and debris from graded surfaces onto public streets, into drainage channels or sewers, or onto adjoining land.

#### Section 905 BUFFER ZONES

In accordance with provisions of KYR10:

Where sites discharge to waters categorized as High Quality Waters or Impaired Waters (non-construction related impairment), as designated by the Kentucky Division of Water, a minimum 25-foot buffer zone between any disturbance and all edges of the receiving water as means of providing adequate protection to receiving waters must be maintained.

For discharges to waters categorized as Impaired Waters (sediment impaired, but no TMDL), a minimum 50-foot buffer zone between any disturbance and all edges of the receiving water as means of providing adequate protection to receiving waters must be maintained.

If the buffer zone between any disturbance and the edge of the receiving water on all edges of the water body cannot be maintained, an adequately protective alternative practice must be employed. Alternative practices shall be shown on the submitted plans as part of the erosion and sediment control plan.

#### Section 906 EROSION PREVENTION

Until SD1 approves the Notice of Termination and the applicable Permit is closed, the person responsible shall take such measures as are necessary to prevent erosion of graded surfaces and to prevent the deposit of soil and debris from graded surfaces onto public streets, into drainage channels or sewers, or onto adjoining land.

#### Section 907 PERIODIC EROSION AND SEDIMENT CONTROL INSPECTIONS

The owner or authorized representative shall inspect all construction site runoff control measures in accordance with the inspection requirements outlined in the KYR10.

SD1 will conduct periodic maintenance inspections to verify compliance with Section 1000.

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## **SECTION 1000**

### **INSPECTION AND MAINTENANCE REQUIREMENTS FOR POST CONSTRUCTION**

#### **Section 1001 PERIODIC MAINTENANCE INSPECTIONS**

The owner or authorized representative responsible for maintenance shall perform or cause to be performed preventive maintenance of all completed storm water management practices to ensure proper functioning.

#### **Section 1002 SD1 MAINTENANCE INSPECTIONS**

SD1 may conduct periodic maintenance inspections of all storm water management practices to verify compliance with this section.

#### **Section 1003 MAINTENANCE REQUIREMENTS**

Once installed and after SD1 issues a Notice of Termination (NOT), storm water control measures for new developments and re-developments shall be maintained in the following manner:

The owner shall provide adequate access to permit SD1 to inspect and, if necessary, to take corrective action. If the owner or any other person in control of such property fails to maintain properly the facilities for which he is responsible under the provisions of these Rules and Regulations, SD1 shall give such owner, person or agent in control written notice specifically describing the deficiency. If the owner or person in control fails to take or commence corrective action, such owner, person or agent shall be subject to the penalties found in Section 1300 of these regulations.

#### **Section 1004 MAINTENANCE OF POST-CONSTRUCTION WATER QUALITY AND VOLUME-REDUCTION CONTROLS**

The KPDES Phase II Storm Water Regulations require SD1 to develop a long-term maintenance for post-construction water quality and volume reduction storm water control measures as described in Sections 700 and 800 of these regulations. All owners of post-construction water quality control(s) are required to enter into a standard long-term maintenance agreement with SD1 using SD1's Post-Construction Storm Water Facility Maintenance Agreement for water quality control(s) located on individual parcel(s). For water quality controls located across multiple parcels, a Storm Water Management Facilities Easement must be provided utilizing SD1's Declaration of Standard Terms and Conditions for Storm Water Management Facilities. For water quality control(s) located within a public right-of-way, a Memorandum of Understanding must be entered into with SD1 utilizing SD1's Post-Construction Storm Water Facility Maintenance Agreement Template. The following is required by KDOW's KYG20 permit and maintenance agreement:

1. SD1 shall inspect a representative number of post-construction water quality and volume-reduction controls on an annual basis to ensure the controls are operating correctly and properly maintained;

2. If deficiencies are discovered during an inspection, SD1 shall notify the property owner of the deficiencies and provide a timeframe for appropriate repairs to be performed;
3. SD1 will perform subsequent inspections to ensure completion of the required repairs;
4. If repairs are not made, SD1 shall take administrative enforcement action(s) listed in Section 1300 of these regulations.

#### 1005 INSTALLATION CERTIFICATIONS

Record Drawings: The owner or authorized representative responsible for the land disturbing activity shall submit record drawings to SD1 in accordance with SD1's Record Drawing Requirements document. Record drawings furnished upon completion of construction shall be signed and sealed by a Kentucky Licensed Professional Engineer certifying that the storm sewer system and storm water control facilities were generally constructed according to the approved design on file with SD1.

Submittals of record drawings shall be submitted in the following formats:

- a. An electronic PDF of the record drawings;
- b. One full-size hard copy of the record drawings;
- c. GIS shapefile or personal geodatabase in the KY HARN NAD 83 coordinate system, tied to USGS Survey Monumentation, of the record drawings or another specified coordinate system;
- d. If a GIS file cannot be submitted, an electronic CAD file shall be submitted in standard format (.dwg, .dxf, .dgn). The electronic file shall contain survey information on the structures in the KY HARN NAD 83 coordinate system, tied to USGS Survey Monumentation or another specified coordinate system.

## **SECTION 1100**

### **STORM WATER DRAINAGE SYSTEM**

#### **Section 1101 MUNICIPAL SEPARATE STORM SEWER SYSTEM RESTRICTIONS**

No unauthorized person shall maliciously, willfully or negligently break, damage, destroy, deface, cover or tamper with any component of the storm water drainage system which is a part of the municipal separate storm sewer system within the Storm Water Service Area as defined in Section 104. It shall be unlawful, without prior written authorization from SD1, to alter in any way any part of the municipal separate storm sewer system. This includes, but is not limited to, rerouting, removing, deepening, widening, enlarging, filling or obstructing any part of the municipal separate storm sewer system.

Any person that willfully causes damage, obstruction, or any other impairment to any part of the municipal separate storm sewer system, may be subject to enforcement action(s) as defined in Section 1300.

#### **Section 1102 STORM WATER DRAINAGE SYSTEM EASEMENTS**

For properties where SD1 has an express or implied easement for any component of the municipal separate storm sewer system, including but not limited to storm sewers and storm water control measures:

1. SD1 has the right of ingress and egress in and over existing ways and lanes to the extent suitable, and other reasonable routes to and upon and along its express or implied easements as may reasonably be necessary for the construction, maintenance and/or reconstruction of the municipal separate storm sewer system.
2. The property owner shall not interfere in any way with SD1's use of the easement or interfere with the construction, operation, maintenance, repair and/or reconstruction of, the storm water drainage system.

#### **Section 1103 PUBLIC STORM WATER DRAINAGE ACCEPTANCE**

1. SD1 shall accept newly constructed public storm sewers in accordance with SD1's Storm Sewer Ownership Criteria for New Construction.
2. SD1 shall accept newly constructed public detention basins in accordance with SD1's Detention Basin Acceptance Criteria.

#### **Section 1104 WATERCOURSE AND ASSET PROTECTION**

Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, and other pollutants that could impact or contaminate the watercourse. No one shall interfere with the flow of any watercourse in a way that could affect, impede or cause damage to SD1's infrastructure or operations.

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## **SECTION 1200**

### **ILLICIT DISCHARGES AND CONNECTIONS**

#### **Section 1201 PURPOSE**

The purpose of this regulation is to provide for the public health, safety and welfare of the community served by SD1 by preventing the introduction of potentially harmful materials into the storm drainage system and receiving waters in compliance with the requirements of the Kentucky Pollutant Discharge Elimination System (KPDES) permit process. The objectives of this regulation are:

1. To prohibit non-storm water discharges to the Municipal Separate Storm Sewer System (MS4) and require the removal of illicit connections thereto;
2. To prevent improper disposal of chemicals and other materials into the MS4 that degrade water quality;
3. To establish inspection, sampling, and monitoring provisions to detect pollutants such as those associated with illicit discharges, improper disposal, and activities on industrial, commercial, residential, and construction sites; and
4. To provide the necessary enforcement mechanisms pertaining specifically to illicit discharges, illicit connections, spills, and dumping into the MS4.

#### **Section 1202 PROHIBITION OF ILLICIT DISCHARGES**

No person shall discharge or cause to be discharged into the MS4 any materials, including but not limited to pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than storm water. Illicit discharges include the discharge of spills and the dumping or disposal of materials other than storm water (including, but not limited to, industrial and commercial and residential wastes) into the MS4.

#### **Section 1203 ALLOWABLE NON-STORM WATER DISCHARGES**

The commencement, conduct or continuance of any illicit discharge to the MS4 is prohibited except as described as follows:

1. landscape irrigation;
2. discharges from potable water sources;
3. diverted stream flows;
4. ground water infiltration (per 40 CFR 35.2005(20)) to separate storm sewers;
5. springs;
6. flows from riparian habitats and wetlands;

7. foundation and footing drains;
8. air conditioning condensation;
9. water from sump pumps;
10. non-commercial car washing;
11. street wash waters;
12. discharge from fire fighting activities;
13. water line flushing;
14. discharges associated with emergency removal and treatment activities for hazardous materials, authorized by the federal, state, or local government on-scene coordinator;
15. flushing and cleaning of storm water conveyances (i.e., drainage systems) with unmodified potable water;
16. wash water from the cleaning of the exterior of buildings, including gutters, provided that the discharge does not pose an environmental or health threat;
17. dechlorinated swimming pool discharges (filter backwash water or discharge from salt water pools is not considered allowable);
18. discharges associated with dye testing, but requires a verbal notification to SD1 prior to the time of the test; and
19. discharges specified in writing by SD1 as being necessary to protect the public health and safety.

If any of the above non-storm water exceptions are found to be polluted and thus cause a negative impact on the quality of the waters of the Commonwealth, said situation or occurrence shall be deemed a violation of this section and the offender shall not be permitted to discharge to the MS4. SD1 will determine these conditions and such situations or occurrences shall be considered an illicit discharge or illicit connection as defined in these regulations.

#### Section 1204 PROHIBITION OF ILLICIT CONNECTIONS

The construction, use, maintenance or continued existence of illicit connections to the MS4 is prohibited. This provision expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection. A person is considered to be in violation of this regulation if the person connects a line conveying wastewater to the MS4, or allows such a connection to continue.

## Section 1205 KPDES PERMITTED ACTIVITY DISCHARGES

Any person subject to a KPDES storm water discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to SD1 prior to the allowance of discharges to the MS4.

If a valid KPDES Storm Water Discharge Permit has been approved and issued by the Kentucky Division of Water additional storm water discharge permits from SD1 are not required in order to discharge into the MS4, provided that the discharge is in compliance with the terms of the KPDES permit and is not subject to Section 400 of the Rules and Regulations.

## Section 1206 BEST MANAGEMENT PRACTICES

SD1 may adopt requirements identifying Best Management Practices for any activity, operation, or facility which may cause or contribute to pollution or contamination discharging to the MS4. Further, any person responsible for a property or premise, which is, or may be, the source of an illicit discharge, may be required to implement, at said person's expense, additional structural and non-structural BMPs to prevent the further discharge of pollutants to the MS4. Compliance with all the terms and conditions of a valid KPDES permit authorizing the discharge of storm water associated with industrial activity, to the extent practicable, shall be deemed compliance with the provisions of this section. These BMPs shall be part of a storm water pollution prevention plan (SWPPP) as necessary for compliance with the requirements of the KPDES permit.

## Section 1207 NOTIFICATION OF SPILLS

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation, has information of any known or suspected release of materials which are resulting or may result in discharges of pollutants into the MS4, said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials, said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services.

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## SECTION 1300

### ENFORCEMENT

#### Section 1301 ADMINISTRATIVE ENFORCEMENT

The Executive Director, or his designee, may issue enforcement to a Person who is in violation to these Rules and Regulations or a permit issued under these Rules and Regulations. The enforcement provision will be evaluated and delivered in the manner provided in the Enforcement Response Plan and Section 1303. SD1 may exercise any or all of the following enforcement provisions:

1. **Verbal Notice.** A verbal notice is an informal type of enforcement from SD1. The verbal notification may be used at the discretion of SD1 for minor violations and non-compliance issues or to document correction made prior to enforcement. Verbal notifications should be used for informational purposes to inform the owner of non-compliant issues before the formal enforcement process begins.
2. **Correction Notice.** A Correction Notice (CN) is an official written communication from SD1 to the noncompliant Person, which informs the Person that a violation has occurred. The CN is issued for minor violations of the Rules and Regulations and may serve as the initial response prior to escalating enforcement measures.
3. **Notice of Violation.** A Notice of Violation (NOV) is an official written communication from SD1 to the noncompliant Person, which informs the Person that a violation has occurred. The NOV is issued for moderate severity violations and/or as the next enforcement mechanism after a CN has gone unaddressed. The NOV may also serve as the initial response prior to issuing additional enforcement.
4. **Cease and Desist Order.** A Cease and Desist Order is an official written communication from SD1 to the noncompliant Person, which directs the Person to cease or terminate illegal or unauthorized discharges immediately upon receipt. The Cease and Desist Order is issued where the discharge could create an emergency situation or in non-emergency situations when violations are recurring and other enforcement measures have proven to be ineffective. The Cease and Desist Order shall remain in effect until removed by written order of the Executive Director, or his designee.
5. **Stop Work Order.** A Stop Work Order is an official written communication from SD1 to the noncompliant Person, which directs the Person to cease all construction activity associated with a land disturbance permit's common plan of development until the site is fully in compliance with all rules and regulations and all fines are paid. The stop work order is not limited to land disturbance activities, but includes all construction related activities.
6. **Emergency Suspensions.** The Executive Director, or his designee, may suspend any permit issued under these Rules and Regulations whenever suspension is necessary in order to stop an actual or a threatened violation presenting or causing an imminent or substantial endangerment to the health or welfare of the public, SD1 facilities or the environment. Any Person notified of a suspension of a permit issued under these Rules and Regulations shall immediately stop or eliminate such activity. In the event that the Person fails to immediately comply with the Emergency Suspension Order, the Executive

Director, or his designee, shall take such steps as are necessary to prevent or minimize the damage to the health or welfare of the public, SD1 facilities or the environment.

7. **Consent Orders.** A consent order is a negotiated settlement between SD1 and a noncompliant Person when long-term commitments are required to resolve violations. The consent order requires signatures of both SD1 and the Person. The consent order may also contain a compliance schedule for achieving deadlines and possibly fines or remedial actions. A consent order may be entered into at any time upon the mutual agreement of the Executive Director, or his designee and the person who has allegedly violated these Rules and Regulations or a permit issued under these Rules and Regulations. A consent order may be entered into at any time upon the mutual agreement of the Executive Director, or his designee and the person who has allegedly violated these Rules and Regulations or a permit issued under these Rules and Regulations.
8. **Compliance Meetings.** A compliance meeting may be required by SD1 at which the noncompliant Person must show cause as to why a proposed enforcement action should not be taken. Compliance meetings may be included as a term of another administration action. Immediate enforcement action may be pursued, regardless of whether or not a duly notified noncompliant Person appears.
9. **Performance Bonds.** SD1 may decline to re-issue a permit pursuant to these Rules and Regulations to any noncompliant Person unless such Person deposits a satisfactory bond, payable to SD1, in an amount not to exceed a value reasonably determined by SD1 to be necessary to achieve consistent compliance.
10. **Administrative Fines.** An administrative fine is a monetary penalty that may be imposed for violations of these Rules and Regulations or permits issued under these Rules and Regulations pursuant to KRS 220.320 and the Enforcement Response Plan. Each day of noncompliance with these Rules and Regulations will be deemed a separate and distinct violation.
11. **Termination of Service.** Termination of storm water service is the revocation of a Person's privilege to discharge into SD1's storm sewer system. Termination may be accomplished by physical plugging or severance of the noncompliant Person's connection to the storm sewer system, by issuance of an administrative order that compels the user to terminate its discharge, or by a court injunction.
12. **Injunctive Relief.** Injunctions are court orders and can be temporary or permanent in nature. In those cases where an administrative action does not achieve compliance, the injunction will be utilized. It will also be used where immediate action is required to prevent potential harm to human health, the storm water system or the environment.
13. **Suspension/Denial.** Suspension/Denial is used as a final recourse in the enforcement process. If the noncompliant Person fails to address all continuous and repeated violations as identified in previous enforcement demands, SD1 may suspend or deny any permits, participation in programs, or any other requested actions. The suspension or denial shall remain in effect until person becomes compliant.
14. **Recover by Civil Action.** SD1 may recover, by civil action or any other available remedy, all administrative fines, costs or any other damages suffered as a result of any violation of

these Rules and Regulations or a permit issued under these Rules and Regulations and any resulting enforcement for said violation.

#### Section 1302 RIGHT OF ENTRY

Whenever it shall be necessary for the purposes of these Rules and Regulations or a permit issued under these Rules and Regulations; and upon presentation of proper credentials and identification, SD1 personnel shall be permitted to enter upon any property of a Person subject to these Rules and Regulations or a holder of a permit issued under these Rules and Regulations at reasonable times.

#### Section 1303 NOTICE

When any notice is required to be given by the Executive Director, or his designee under Section 1300 of these Rules and Regulations it will be conducted in the manner outlined in the Enforcement Response Plan.

#### Section 1304 REQUEST FOR RECONSIDERATION

Any aggrieved party may challenge the enforcement or applicability of these regulations pursuant to the process set forth in Section 1400.

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## SECTION 1400

### REQUEST FOR RECONSIDERATION / APPEALS

#### Section 1401 APPEALS

1. Notice of Appeal. An aggrieved party by any order or final determination of SD1 may appeal said order or determination to the Board and have said order or determination reviewed by a committee of three Board members organized pursuant to the Board's Bylaws and chaired by the Board President or his designee pursuant to the provisions of this Section. A written notice of appeal shall be delivered to SD1 to the attention of the Board President by hand delivery or ordinary United States mail within thirty (30) days of receipt of the final decision, permit or order of the district. Said notice shall set forth the grounds for appeal and the relief being sought by the person filing said appeal.

Unless the order or determination involves a threat to public health and safety or a billing dispute, SD1 may suspend the operation of the appealed order or determination until such time as the Board Committee has acted upon the appeal.

2. Scheduling of Hearing. The Board Committee will schedule a hearing at SD1's office to consider the matter appealed. All parties will be given at least thirty (30) days written notice of the scheduled hearing date. Thirty (30) days' notice will not be required if both parties and the Board Committee agree to an earlier hearing date. Hearings will be open to the public.
3. Administrative Hearing. Upon reviewing all the evidence presented, the Board Committee shall adjourn and make a recommendation to the full Board on whether or not to affirm the order or determination which is the subject matter of the appeal, within seventy-five (75) days at a regularly scheduled board meeting.
4. Parties. Any party to a hearing may represent themselves or be represented by counsel, may make oral or written argument, offer testimony or take any combination of such actions. The Board Committee President or his designee will preside at the hearing in accordance with reasonable administrative practice.
5. Recordation. It will be within the Board Committee's discretion to require official transcripts or to set up other procedures of taking evidence. However, the hearing body will employ the use of mechanical recording devices for recording the testimony. The parties may jointly or independently provide further recording by court reporter.
6. Evidence. Since the proceedings are administrative and not judicial in nature, the hearing body is not bound by the rules of evidence prescribed for judicial tribunals. Any oral or written matter, including hearsay, deemed relevant and material, may be considered without regard to technical rules of admissibility; for fixing dates, places, persons, and events definitely and accurately. Evidence will be given the weight warranted by the circumstances. The President will rule in open session on any question of admissibility. When a party or member of the hearing body objects to a ruling, a majority vote of the members present will determine whether the evidence will be admitted. When a hearing will be expedited and the interest of the parties will not be prejudiced substantially, any part of the evidence may be received in written form.

7. Circuit Court Appeal. Any party aggrieved by the SD1 Board's final order shall appeal the final determination to the Circuit Court of applicable venue within 30 business days of issuance of the final order of the Board.

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