



2.2 Regulations

This section describes the regulations supporting the City's stormwater management program. It establishes the baseline requirements. More information about the policies and procedures in support of these regulations can be found in Section 3 and the appendices.

2.2.1 *Waterway Buffers*

Areas of new development and redevelopment require a 25- to 50-foot undisturbed no-build buffer zone from top of bank on both sides for the entire length of streams that are identified in the most recent USGS Quadrangle maps within the City of Shelbyville. Buffer zones are vegetated areas, including trees and shrubs which exist or are established to protect a stream system, lake, or reservoir area. These buffers also apply to other sensitive areas such as springs, wetlands and sinkholes as follows:

KYR10 requires buffer zones as described below:

For discharges to waters categorized as High Quality Waters or Impaired Waters (Non-construction related impairment) permittees are required to maintain a minimum a 25-foot buffer zone between any disturbance and all edges of the receiving water as means of providing adequate protection to receiving waters. For discharges to waters categorized as Impaired Waters (Sediment impaired, but no TMDL), permittees are required to maintain a minimum 50-foot wide buffer zone between any disturbance and all edges of the receiving water as means of providing adequate protection to receiving waters. 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 alternate practice may be employed. The SWPPP shall explain any alternate practices and how these practices are adequately protective. Such cases include but are not limited to stream crossings and dredge and fill areas. In these cases the permittee shall minimize disturbances in the buffer zones by using hand held or other low-impact equipment.

2.2.2 *Erosion Prevention and Sediment Control Requirements*

The City of Shelbyville, KY requires an Erosion Prevention and Sediment Control (EPSC) Plan for most types of construction. When preparing the EPSC Plan, the design engineer and/or developer should determine the best practices to protect the environment from the potential impacts from construction sites by selecting source control and sediment containment practices. Proper site planning and BMP selection are critical to the success of the erosion prevention and sediment control plan. The appendices contain plan submittal forms and checklists for your use.

Site characteristics such as soil types, topography, and on-site or nearby natural resources, and construction methods should be thoroughly reviewed when selecting BMPs to implement throughout the life of the project. The designer should plan for how the site will change throughout the project so that BMPs can be repaired, modified or replaced.

For more information regarding the required elements of an EPSC Plan, refer to Appendix D – EPSC Plans.

EPSC plans must incorporate the following concepts:

Minimize Disturbed Areas - Phasing

Construction planning and sequencing are the least expensive methods to reduce and control erosion and sediment. The following points should be considered to minimize disturbed areas:

- Do not disturb areas of the construction site and keep existing vegetation for as long as possible. Delay disturbing areas of the site until necessary for construction activities.
- Carefully schedule and phase construction. Avoid grading during wet months (December through May).



- Plan and implement permanent structures throughout the earlier phases of the project. This will maximize the BMP's effectiveness.
- Avoid delays and work expeditiously on any part of the site. Install landscaping and stabilize upon the completion of any sequence and prior to moving on to the next phase.

Focus on Erosion Control

- Erosion control is THE most effective practice used on a construction site. Temporary covers (mulch, temporary grains, plastic) are cost effective and should be used on any area of the construction site that has a high potential for discharging sediment off-site.
- Use temporary cover measures (seed or mulch) whenever construction ceases for 14 days.
- Phase site grading to limit the amount and time of an area is exposed. Exposed areas should be stabilized immediately following the completion of grading in that area.
- Any exposed soil is subject to erosion, even by a single rain drop. Designers and contractors should make every effort to stabilize the following highly susceptible areas at a construction site throughout construction:
 - Slopes
 - Highly erosive soils
 - Construction entrances and exits
 - Stream channels
 - Soil stockpiles

Manage Sediment

- Where erosion controls are impractical due to construction activities, sediment controls must be installed. Sediment controls are much less effective and have higher maintenance requirements than erosion control practices.
- The designer should consider sediment controls for the initial clearing and grubbing phase. Typically, these controls are perimeter controls, as follows:

Area of Concern	Site Perimeter Control
Disturbed areas or slopes that drain toward adjacent properties	Continuous berms, silt fences, sandbags
Stabilizing area after grading has been completed	Mulching, seeding, planting, emulsifiers, or a combination of two or more
Off site flows that enter the constructions site	Continuous berms, earth dikes, drainage swales and lined ditches
Concentrated flows that leave the construction site	Outlet control measures that will dissipate velocities
Construction traffic exiting onto a public right of way or other property	Construction exit to reduce mud tracking

Additional controls within the interior of construction site should supplement perimeter controls once rough grading is complete.

Internal Erosion and Drainage Design

Once the perimeter controls have been designed, the issue of internal erosion and drainage controls must be addressed for each phase or stage of construction. Internal practices are required early in the project until permanent practices can be implemented.

Some of the internal erosion and drainage design practices to be used include:

- Check dams, geotextile mats, and under extreme circumstances concrete channel lining.



- Terracing at regular intervals.
- Slope benches or ditches.
- Surface roughening or temporary seeding.
- Temporary sediment traps and basins.

Maintenance and Inspection of Measures

Constant inspection and maintenance of the BMPs is critical for successful prevention of erosion and sediment transport. Maintaining a daily or weekly checklist of practices to inspect for deficiencies is critical. All areas of the active construction site must be inspected at least once every 7 calendar days, or at least every 14 calendar days and within 24 hours after any storm event of 0.5 inch or greater. These inspections must be documented in an inspection report. When maintenance needs are identified in an inspection, they must be addressed before the next rain event or as soon as practicable.

A simple way to ensure that all practices are compliant is for the EPSC Qualified Contractor to arrange a pre-construction meeting with the City of Shelbyville's Stormwater program. This meeting should take place after the Notice to Proceed, but prior to the mobilization of equipment.

All construction site BMPs require ongoing maintenance. At a minimum, sediment should be removed from the sediment storage area when the storage area is a third full. However, the contractor should demonstrate sound judgment and maintain the structures more frequently if necessary.

An inspection and maintenance strategy should include the following:

- ✓ Verify that sediment-laden stormwater flows to temporary sediment traps, basins or other sediment control devices.
- ✓ Runoff from undisturbed areas should be directed around disturbed areas and not directed into sediment control devices.
- ✓ Protect all existing or newly installed storm drainage structures from sediment clogging by providing inlet protection for area drains and curb inlets. Stormwater inlet protection can utilize sand bags, sediment traps, or other similar devices.
- ✓ Excavate permanent stormwater detention ponds early in the project, use them as sedimentation ponds during construction, remove accumulated sediment, and landscape the ponds when the upstream drainage area is stabilized.
- ✓ Inspect temporary sediment barriers such as silt fences, rock filters, and continuous berms after every rainfall. These barriers should only be used in areas where sheet flow runoff occurs. They are ineffective if the runoff is concentrated into rill or gully flow.
- ✓ Internal outlets must also be protected to reduce scour from high velocity flows leaving pipes or other drainage facilities.
- ✓ Protect sinkholes, drywells, yard inlets and other internal drainage features from sediment with inlet protection.

2.2.3 NPDES Phase II EPSC Requirements

New requirements for small municipalities, NPDES Phase II stormwater requirements, became effective on March 10, 2003. In these requirements, certain municipalities and agencies that are owners or operators of their stormwater systems were required to apply for coverage under the Phase II permitting program enforced by the State. The City of Shelbyville is an NPDES Phase II regulated municipality and has coverage under the NPDES Phase II general stormwater permit, KYG20.

One of the requirements of the Phase II program is to develop a construction site runoff control program for new developments and redevelopments affecting one acre or more. The City's Stormwater Ordinance was developed in an effort to comply with this requirement. It parallels KDOW's stormwater general permit for construction activities, called KYR10, as well as the requirements within KYG20.



2.2.4 *Complying with KYR10 Requirements and the City of Shelbyville's Stormwater Requirements*

The City's EPSC program mirrors KYR10. Whenever a construction site disturbs 1 acre or more, coverage under KYR10 is required, and the City will not issue a Land Disturbance Permit until a Notice of Coverage for the site in question has been submitted to the City. A summary of KYR10 requirements is in Table 2.2-1.

Table 2.2-1 Summary of Major KYR10 Components

<p>Land disturbing activities affecting 1 acre or more are required to obtain coverage under KYR10. For common plans of development, contiguous construction activities that cumulatively equal one or more acres of disturbance must have coverage. Non-contiguous activities (activities that are separated by 0.25 miles or more) that disturb one or more acres are considered separate activities. An applicant is required to submit a Notice of Intent for Stormwater Construction Activities (NOI-SWCA) for coverage under KYR10 and wait for a Notice of Coverage prior to beginning construction.</p> <p>The KPDES permit also requires permittees to develop and maintain stormwater pollution prevention plans (SWPPPs) for each permitted site. These plans do not have to be submitted with the NOI-SWCA. However, they must be made available to State and City inspectors during site inspections or as otherwise requested.</p> <p>EPSC measures must be designed, installed and maintained to effectively minimize discharges up to and including the 2-yr, 24-hr storm event. EPSC maintenance must be completed before the next storm event.</p> <p>Inspections must be performed by knowledgeable and qualified inspectors, either At least once every seven (7) calendar days OR At least every fourteen (14) calendar days and within 24 hours after any storm event of 0.5 inch or greater.</p> <p>All inspections must be documented and inspection reports kept with the SWPPP. Areas where construction has temporarily or permanently ceased must be stabilized within fourteen (14) days of the cessation of construction activities. EPSC measures must be implemented on disturbed critical areas within 24 hrs after completion of grading/disturbance.</p> <p>A 25-foot buffer zone must be maintained between construction activities and the edge of high quality and impaired streams. For sediment impaired streams, a minimum 50 foot buffer must be maintained.</p>

The following sections provide detailed information regarding The City of Shelbyville's stormwater management program. These sections describe how the City's stormwater program meets the requirements of KYR10 and the City's Municipal Separate Stormwater System (MS4) Phase II permit, KYG20.

2.2.5 *EPSC Plan Requirements*

Different levels of EPSC plans are required for different types of developments. Simple Plot Plans, for example, that do not include sinkholes or other sensitive features can address EPSC by completing the form found in Appendix D, Standard EPSC Plan for Plot Plan. Larger, more complex sites, such as non-residential buildings and subdivisions, are required to submit detailed EPSC plans.

The level of detail shown on the drawings depends on the size and complexity of the project. For single lots, a sketch may be all that is required to show the inspector. However for larger developments, such as a shopping center or industrial park, a plan sheet (or several) at an appropriate scale shall be submitted to the City for review.



Shelbyville, KY Stormwater Best Management Practices

January 2013

This is a list of required notes that must be added to every EPSC plan, large and small.

- ✓ As a minimum, all erosion prevention and sediment control practices will be constructed and maintained according to the standards located in the City of Shelbyville's Stormwater BMP Manual, Stormwater Ordinances, and as required by state and federal laws.
- ✓ A copy of the approved Erosion Prevention and Sediment Control Plan shall be maintained at the project site at all times or shall be made available to the City upon request.
- ✓ Prior to commencing land-disturbing activities in any area not on the approved erosion prevention and sediment control plan, the contractor shall submit a supplementary erosion control plan to the City of Shelbyville for review and approval.
- ✓ All erosion prevention and sediment control measures are to be placed prior to or as the first step in clearing and grading. The contractor is responsible for any additional erosion control measures necessary to prevent erosion and sedimentation.
- ✓ During dewatering operations water must be pumped through an appropriate filtering device. The City of Shelbyville may suspend dewatering operations if pollution is observed.
- ✓ The contractor shall inspect all erosion and sediment control devices at least once a week or at least once every fourteen calendar days and within 24 hours after any storm event 0.5 inch or greater. The contractor shall perform any repairs or maintenance prior to the next storm event or as soon as practicable in order to ensure effective erosion and sediment control.
- ✓ The contractor shall maintain a record of all inspections and maintenance activities. This record shall be made available to the City of Shelbyville upon request.
- ✓ Runoff sediment and construction waste from construction sites and parking areas shall not leave the site.
- ✓ Any sediments or other materials which are tracked off the site shall be removed immediately.

1. The EPSC plan shall include the following:

- a) A natural resources map identifying
 - soil types,
 - forest cover,
 - topography (1' contours), existing and proposed grades
 - receiving stream and other natural features of concern on the property or immediately adjacent to the property
 - location of any sinkholes within the property or immediately adjacent to the property

This map should be to scale equivalent to balance of submittal.

- b) A construction schedule for the development site, including stripping and clearing, rough grading, construction of utilities, infrastructure, final grading and landscaping. Sequencing shall identify the expected date on which clearing will begin, the estimated duration of exposure of cleared areas, areas of clearing, installation of temporary EPSC measures and establishment of permanent vegetation.
- a) All EPSC measures necessary shall be shown on the plan by location and referred to by a legend for all phases of construction. Depending upon the complexity of the project, the drafting of intermediate plans may be required for the close of winter season. Multiple EPSC plan sheets may be necessary to best convey requirements for each phase. Supporting calculations for the measures must be provided.



- b) Seeding mixtures and rates, types of sod, method of seedbed preparation, expected seeding dates, type and rate of lime and fertilizer application, and type and quantity of mulching for both temporary and permanent vegetative control measures.
 - c) Provisions for maintenance of control facilities, including easements and estimates of the cost of maintenance.
2. Modifications to the plan shall be processed and accepted or denied in the same manner as the review and issuance of the original permit application and may be authorized by the City of Shelbyville by written authorization to the permittee, and shall include:
- a) Major amendments of the EPSC plan require an engineer's signature and shall be submitted to the City of Shelbyville for acceptance prior to completion.
 - b) Field modifications of a minor nature shall require an engineer's signature and shall be noted and dated on the EPSC record drawings and available for review and acceptance by the City of Shelbyville within 14 calendar days after changes have been made in the field.

EPSC plans must be reviewed and approved prior to any land disturbing activity on the site.

2.3 Inspections by EPSC Qualified Contractor

An EPSC qualified contractor shall be responsible for overseeing the implementation and maintenance of all aspects of the plan and performing inspections. Whenever an Erosion Control Plan is required, a qualified contractor must be identified in the permit application package. The following information must be submitted with the application:

- ✓ Qualified Contractor's name, company name, address, phone number, and certification number.
- ✓ A statement signed by the contractor certifying that he/she will be the person responsible for the installation, inspection and maintenance of EPSC measures at the site and will be the point of contact for the City regarding EPSC questions or concerns for the permitted site.

On projects where numerous grading or site contractors are likely to be working, a representative of the contractor responsible for overseeing the initial grading and installation of initial EPSC practices must be identified as the Qualified Contractor when the Stormwater Pollution Prevention Plan is submitted to the City for review and approval. However, prior to obtaining any permits, the applicant must identify any new Qualified Contractor for the individual lot or certify that the overall Stormwater Pollution Prevention Plan (which includes the EPSC Plan) for the development will be followed and that the Qualified Contractor for the overall development will also serve as the Qualified Contractor for the individual lot.

Qualified Contractors are responsible for the following within the City of Shelbyville's jurisdiction:

1. Understand when an Erosion Prevention and Sediment Control Plan as required by the City and inform developers prior to beginning land-disturbing activities of the requirement for a plan.
2. Install or oversee the installation of erosion prevention practices (EPP), sediment management practices (SMP) and good housekeeping practices (GHP) before land disturbing activities begin.
3. Inspect EPP, SMP and GHP controls every 7 calendar days or every 14 days and within 24 hrs after a storm event of 0.5 inch or greater. Document the findings of the site inspections, inform the developer of the findings, and maintain inspection documentation for the permitted site.
4. Maintain EPP, SMP and GHP controls for the duration of the construction activities. Maintenance of controls must be conducted in accordance with the requirements identified in the City's *Best Management Practices Manual*.