



**City of Powell, Ohio  
Stormwater Design Guidance Document**

**Please note that all construction post-construction management BMPs must be designed in accordance with the current Ohio EPA General Construction Permit. \***

**Drainage Policy**

1. All developments are required to control the flow rate of stormwater discharge to that rate which existed prior to development (design criteria specified in Section 1111.053).
2. The tributary area should be delineated using natural land divides.
3. Stormwater drainage facilities within a development must be designed to have capacity and depth to permit future connections to serve the total tributary area at the design storm frequency based on the rate of single family, residential runoff.
4. Surface water drainage from a site must be conveyed to a drainage outlet with adequate capacity. The location all drainage outlets must be approved to the City Engineer.
5. It is the responsibility of the property owner to not change or alter any drainage course, ditch or drainage system on his property that will damage or cause flooding to adjacent, upstream or downstream property owners.
6. A preserved natural area must be maintained at least 120 feet wide on both sides of all streams designated as a state scenic river. No structures or improvements are permitted within this area. (Section 1111.08)

**Drainage Easements (Section 1111.052 (c))**

1. A drainage easement is required along any drainage way or conveyance, facility.
2. When it is necessary to convey stormwater off-site in order to discharge into an adequate outlet, an easement must be obtained for this off-site drainage course.
3. The developer is responsible for the maintenance of the drainage course unless the easement and/or maintenance agreement requires abutting property owners to repair and maintain the drainage course.
4. All easements must be shown on the final plat and the “final engineering and constructions plan”.

**Stormwater Runoff Quantity Design**

1. Provide a drawing showing the pre-development site with all impervious areas shaded. Provide contour lines with a maximum interval of 1-foot. Illustrate the flow route used to determine the pre-development Time of Concentration.
2. A drawing showing the post-development site with all impervious areas shaded. Provide contour lines with a maximum interval of 1-foot. Illustrate the flow route used to determine the post development Time of Concentration.
3. In tabular form, show the impervious and pervious surface areas for both pre and post-development conditions.

4. Provide composited runoff curve numbers for both pre and post development conditions.
5. Provide calculations to demonstrate that under post developed conditions that the runoff from a 100-year storm is not greater than the peak rate of runoff from a one-year storm under pre-developed conditions. Release rates may not exceed the capacity of the downstream channel or storm sewer.
6. Provide calculations used to determine both pre and post development Time of Concentration.
7. Provide calculations used to determine both pre and post development peak discharge rates.
8. Provide basin sizing calculations.
9. Provide basin volume calculations.
10. Provide orifice plate sizing calculations.

**Runoff Quality:** Stormwater runoff quality issues will be addressed according to the effective Ohio EPA General Permit OHC000003 (Effective April 21, 2008). – **(OEPA permit OHC000001 is effective April 8, 2009 and shall replace OHC000003 in watershed areas tributary to the Olentangy River).**

1. All sites that plan to disturb more than one (1) acre must submit a Notice of Intent application form (NOI) at least 21 days prior to the commencement of construction to the OEPA.
2. All sites that plan to disturb more than 1 acre of earth must include a Stormwater Pollution Prevention Plan (SWP3). The SWP3 shall be completed in accordance with the SWP3 checklist included below.
3. Sites that disturb less than 1 acre are not required to submit an NOI, but are required to practice stormwater best-management practices.
4. Sites that disturb less than 1 acre shall identify as part of their plan submittal the “best management practices” they intend to utilize to control sediment erosion.

**Please reference 1111.05 for complete stormwater management and design requirements.**

### **Storm Water Pollution Prevention Plan (SWP3) Checklist for Construction Activities**

*Operations that discharge storm water from construction activities are subject to the following requirements and the SWP3 shall include the following items:*

1. A description of the nature and type of the construction activity (e.g., low density residential, shopping mall, highway, etc.);
2. Total area of the site and the area of the site that is expected to be disturbed (i.e., grubbing, clearing, excavation, filling or grading, including off-site borrow areas);
3. An estimate of the impervious area and percent imperviousness create by the construction activity;
4. A calculation of the runoff coefficients for both the pre-construction and post construction site conditions;
5. Existing data describing the soil and, if available, the quality of any discharge from the site;
6. A description of prior land uses at the site;
7. An implementation schedule which describes the sequence of major construction operations (i.e., grubbing, excavating, grading, utilities and infrastructure installation) and the implementation of erosion, sediment and storm water management practices or facilities to be employed during each operation of the sequence;
8. The name and/or location of the immediate receiving stream or surface water(s) and the first subsequent named receiving water(s) and the areal extent and description of wetlands or other special aquatic sites at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project. For discharges to an MS4, the point of discharge to the MS4 and the location where the MS4 ultimately discharges to a stream or surface water of the State must be indicated;
9. For subdivided developments where the SWP3 does not call for a centralized sediment control capable of controlling multiple individual lots, a detail drawing of a typical individual lot showing standard individual lot erosion and sediment control practices. This does not remove the responsibility to designate specific erosion and sediment control practices in the SWP3 for critical areas such as steep slopes, stream banks, drainage ways and riparian zones.
10. Location and description of any storm water discharges associated with Dedicated asphalt and dedicated concrete plants covered by this permit and the best management practices to address pollutants in these storm water discharges;
11. A copy of the permit requirements (attaching a copy of this permit is acceptable);
12. A cover page or title identifying the name and location of the site, the name and contact information of all construction site operators, the name and contact information for the person responsible for authorizing and amending the SWP3, preparation date, and the estimated dates that construction will start and be complete;
13. A log documenting grading and stabilization activities as well as amendments to the SWP3, which occur after construction activities commence;

***A detailed site map is required by the NPDES construction stormwater general permit. The site map must include the following items:***

1. Limits of earth-disturbing activity of the site including associated off-site borrow or spoil areas that are not addressed by a separate NOI and associated SWP3;
2. Soils types should be depicted for all areas of the site, including locations of unstable or highly erodible soils;
3. Existing and proposed contours. A delineation of drainage watersheds expected during and after major grading activities as well as the size of each drainage watershed, in acres;
4. Surface water locations including springs, wetlands, streams, lakes, water wells, etc., on or within 200 feet of the site, including the boundaries of wetlands or stream channels and first subsequent named receiving water(s) the permittee intends to fill or relocate for which the permittee is seeking approval from the Army Corps of Engineers and/or Ohio EPA;
5. Existing and planned locations of buildings, roads, parking facilities and utilities;
6. The location of all erosion and sediment control practices, including the location of areas likely to require temporary stabilization during the course of site development;
7. Sediment and storm water management basins noting their sediment settling volume and contributing drainage area;
8. Permanent storm water management practices to be used to control pollutants in storm water after construction operations have been completed.
9. Areas designated for the storage or disposal of solid, sanitary and toxic wastes, including dumpster areas, areas designated for cement truck washout, and vehicle fueling;
10. The location of designated construction entrances where the vehicles will access the construction site;
11. The location of any in-stream activities including stream crossings;