



# Storm Water Management Plan Guidance Document and Plan Review Checklist

*March 2023*

Prepared By:





Under the City of Circleville's Chapter 1193.05 Ordinance Storm Water Management Plan (SWMP) is required for activities disturbing greater than or equal to one (1) acre, or less than one acre, if part of a larger common plan of development or sale.

This document is intended to provide guidance that summarizes the required elements of a SWMP submission to the City of Circleville (City). This document can be used by design engineers as a reference for complying with the City's Storm Water Management Ordinances. *The City will also utilize this document as a plan review checklist and record of completed reviews.*

SWMPs are intended to provide information on soil erosion and runoff control activities, flood control/detention, and water quality Best Management Practices (BMPs) to be used and incorporated on the site both during and after site development.

Each SWMP shall provide a site design that meets the Performance Standards presented in Section 1193.05 of the City's Storm Water Management Ordinance and provide practical treatment for both water quality and quantity of storm water from the site as appropriate.

In general, SWMP need to address:

- **Erosion and Sediment Control**: Providing measures to ensure that earth disturbing activities at the site during and after development will be managed in a manner that will not result in increased erosion and sedimentation from the site resulting in impacts to water quality and that meet the Performance Standards specified in Chapter 1193.05 of the City's Storm Water Management Ordinance.
- **Water Quantity Control**: Providing measures to ensure that the quantity of surface water runoff from the development site during and after construction will mimic the pre-development conditions and that meet the Performance Standards specified in Chapter 1193.05 of the City's Storm Water Management Ordinance.
- **Water Quality Control**: Providing measures to ensure that the water quality controls are consistent with the requirements of the latest edition of the [Ohio EPA's NPDES Construction Activity Permit](#).



**PROJECT NAME:** \_\_\_\_\_

**DEVELOPER:** \_\_\_\_\_

**DESIGN ENGINEER:** \_\_\_\_\_

**DATE SUBMITTED TO CITY:** \_\_\_\_\_

**All submittals to the City should include the following items in this order. Each item should be numbered and should meet all requirements listed herein.**

### **Erosion and Sediment Control Submittal Requirements**

Each drawing submission shall include erosion and control measures during the construction phase of the development. The submittal shall include the following:

1. An ESCP sheet detailing the required sediment and erosion control measures to be included on site. Designs shall meet the basic requirements of [Ohio EPA's NPDES Construction Activity Permit](#), and may reference the [Rainwater and Land Development: Ohio's Standards for Stormwater Management, Land Development and Urban Stream Protection](#), latest edition, developed by the Ohio Department of Natural Resources.

### **Water Quantity Control Submittal Requirements**

Each submittal shall include an evaluation of pre-development conditions and post-development conditions that quantifies the volume and peak rate of runoff from the site. The submittal shall include the following:

2. Pre-development and post-development site maps that highlight the following:
  - o The total land disturbance area.
  - o Total drainage area used for the purposes of water quantity peak flow rate calculations.
  - o The existing and proposed impervious surfaces used in the pre-development and post-development storm water calculations.
  - o Time of concentration travel paths used in pre-development and post-development storm water calculations.
3. Pre-development and post-development time of concentration calculations for sheet flow, shallow concentrated flow and channel flow consistent with methodologies described in the [City of Columbus Stormwater Drainage Manual](#) or [NRCS Technical Release 55 \(TR-55\)](#).
4. A summary of the pre-development post-development runoff curve numbers based on land use from tables available in the [City of Columbus Stormwater Drainage Manual](#) or [NRCS Technical Release 55 \(TR-55\)](#).
5. Storm water calculations using hydrologic methods in the [City of Columbus Stormwater Drainage Manual](#) or [NRCS Technical Release 55 \(TR-55\)](#) indicating the total volume of runoff from a one (1) year frequency, 24-hour storm occurring on the development area for both pre-development and post-development conditions. Based on the volume increase, utilize the below table to select the critical storm.



If the percent of increase in runoff volume is		The critical storm for peak rate control will be
equal to or greater than	and less than	
-	10	1 Year
10	20	2 Year
20	50	5 Year
50	100	10 Year
100	250	25 Year
250	500	50 Year
500	-	100 Year

6. Storm water calculations for the design of storm water management facilities that demonstrate the following for the proposed development site.
  - o The post-development peak rate of runoff from the critical storm and all more frequent storms occurring on the site does not exceed the peak rate of runoff from a one (1) year frequency, twenty-four (24) hour storm occurring on the same site under pre-development conditions.
  - o Storms of less-frequent occurrence (longer return periods) than the critical storm up to the 100-year storm shall have peak runoff rates no greater than the peak runoff rates from equivalent size storms under pre-development conditions.
7. A summary table of the stage-storage relationship provided by the storm water control that is intended for water quantity requirements.
8. Design details for the proposed storm water management facility, including plan view with proposed grading and footprint, cross sections, and details of outlet control structure configuration consistent with storm water calculations.

### Water Quality Control Submittal Requirements

Each SWMP shall include storm water BMPs to ensure that water quality controls will be in place in post-development or post-construction conditions. The submittal shall include the following:

9. Calculations for the drainage areas and percent imperviousness tributary to the proposed post-construction storm water BMPs.
10. Calculations for the water quality runoff coefficient consistent with the equation included in the [Ohio EPA Construction General Permit](#), latest edition, in the Post-Construction Storm Water Management Requirements section.
11. Calculations for the water quality volume in both acre-feet and cubic feet consistent with the equation included in the [Ohio EPA Construction General Permit](#), latest edition, in the Post-Construction Storm Water Management Requirements section.
12. A brief narrative of the post-construction storm water quality BMP selected, consistent with Table 2 of the [Ohio EPA Construction General Permit](#), latest edition, for meeting the water quality volume requirements.
13. Calculations for the drain time or drawdown time for the selected BMP consistent with the requirements described in Table 2 of the [Ohio EPA Construction General Permit](#), latest edition.
14. Design details for the proposed post-construction storm water quality BMP, including plan view with proposed grading and footprint, cross sections, and details of outlet control structure configuration consistent with storm water calculations.



15. Detailed long-term maintenance plan for the post-construction storm water quality BMP.

**Storm Water Management Plan Submission, Review and Action**

Submit a PDF of the SWMP and other supporting data consistent with this guidance document to the Director of Public Service to initiate the review process.

Upon submission of the SWMP the Director of Public Service's designee shall complete a review of the SWMP within 30 days, provided that the applicant has submitted all information required.

The Director of Public Service shall either approve the SWMP as submitted by the applicant or disapprove the SWMP and note the deficiencies. If a submittal is not approved, an updated SWMP may be prepared and submitted by the applicant to the Director of Public Service for review.

An approved NOI is required to be submitted to the City of Circleville prior to the start of construction.

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**Area below line is for City use only.**

The City of Circleville has reviewed the SWMP submittal and has determined that this SWMP is:

**APPROVED**

**NOT APPROVED**

**Review Comments If Applicable:**

**REVIEWER SIGNATURE:** \_\_\_\_\_ **Date:** \_\_\_\_\_