1 Regulatory Requirements
1.0 Introduction

The negative impacts of unmanaged stormwater runoff present a challenge to the City of Philadelphia. Such negative impacts include increased runoff pollutant concentrations, reduced groundwater recharge, increased stream channel and bank erosion, loss of aquatic habitat, increased flood frequency, and increased quantity, frequency, and duration of combined sewer overflows. To confront these challenges, the Philadelphia Water Department (PWD) has developed the PWD Stormwater Regulations (Stormwater Regulations) to ensure the City has an up-to-date and effective stormwater management program that meets State and Federal requirements and can be coordinated with the evolving regulations being adopted by upstream municipalities. The Philadelphia Stormwater Management Guidance Manual provides detailed information on how to efficiently comply with the Stormwater Regulations for development projects and other construction projects. Through compliance with the Stormwater Regulations, each project helps to improve the health of Philadelphia’s waterways.

Chapter 1, Regulatory Requirements, provides an overview of the Stormwater Regulations and allows the applicant to determine if a project is regulated, and if so, which requirements apply to a particular project, based on the project’s characteristics. Once the Stormwater Regulations’ applicability to a project is determined, the applicant can find guidance on the necessary submission, review, and approval procedures in Chapter 2.

Section 1.1 contains guidance on the project characteristics that determine if a project is regulated, and if so, which requirements of the Stormwater Regulations apply to an applicant’s project. The three key applicability factors that determine whether and which specific aspects of the Stormwater Regulations apply to a project are the following:

- Development Type - Section 1.1.1
- Watershed - Section 1.1.2
- Earth Disturbance - Section 1.1.3
Section 1.2 provides guidance on how the Stormwater Regulations may be applicable to a project, allowing the applicant to determine the specific requirement(s) of the Stormwater Regulations to which a project would be subject. It contains an overview of the Stormwater Regulations, their objectives, and project-specific exemptions. Specific requirements and Section references within this Chapter are as follows:

- Post-Construction Stormwater Management Requirements - Section 1.2.1
  - Water Quality requirement
  - Channel Protection requirement
  - Flood Control requirement
  - Public Health and Safety Release Rate requirement

- Erosion and Sediment Control Requirement - Section 1.2.2

After determining the project’s development type, watershed, and earth disturbance area using Section 1.1, the applicant will use this information in conjunction with the requirement-specific exemptions detailed in Section 1.2 to determine which portions of the Stormwater Regulations apply to the project.
1.1 Applicability Factors

This Section contains guidance on the project factors that determine which portions of the Philadelphia Water Department (PWD) Stormwater Regulations (Stormwater Regulations) apply to an applicant’s project. PWD requires submissions for all projects in the City of Philadelphia that generate earth disturbance of 5,000 square feet or more, yet not all projects will need to comply with all requirements of the Stormwater Regulations. There are three main factors that determine which requirements of the Stormwater Regulations apply to a project:

- Development Type,
- Watershed, and
- Earth Disturbance.

These three project characteristics play an important role in determining how the Stormwater Regulations discussed in Section 1.2 are applied to a project. The applicant will use this Section to identify the project’s development type, watershed, and earth disturbance area. This information, in conjunction with the requirement-specific exemptions in Section 1.2, is necessary for determining applicability and the project’s Review Path in Chapter 2.

Of the three key applicability factors, one - earth disturbance - can change during the course of design and construction. If the earth disturbance threshold changes, the applicant must return to Section 1.1.3 to verify whether the project’s applicability determinations have changed.

1.1.1 Development Type

Development type plays a key role in determining if and how Post-Construction Stormwater Management (PCS M) Requirements (Section 1.2.1) will apply to a project.

*Development* is defined in the Stormwater Regulations as *any human-induced change to improved or unimproved real estate, whether public or private. Development encompasses, but is not limited to, New Development, Redevelopment, Demolition, and Stormwater Retrofit. It includes the entire Development Site, even when the project is performed in phases.* The development types listed below are types that PWD recognizes, and it is incumbent on the applicant to determine under which type his or her project falls. The applicant is encouraged to contact PWD Stormwater Plan Review for assistance in determining the project’s development type if they are uncertain or believe that their project may fall under more than one category.
New Development

New Development is defined in the Stormwater Regulations as development on a tract of land where structures or impervious surfaces never existed or were removed before January 1, 1970. The improved tract of land refers to the area of on-site earth disturbance.

Redevelopment

Redevelopment is defined in the Stormwater Regulations as development on a tract of land that includes, but is not limited to, the demolition or removal of existing structures or impervious surfaces and replacement with new impervious surfaces. This includes replacement of impervious surfaces that have been removed on or after January 1, 1970. The improved tract of land refers to the area of on-site earth disturbance.

Demolition

Demolition is defined in the Stormwater Regulations as a project that is limited to the razing, or destruction, whether entirely or in significant part, of a building, structure, site, or object; including the removal of a building, structure, site, or object from its site or the removal or destruction of the façade or surface.

Stormwater Retrofit

Stormwater Retrofit is defined in the Stormwater Regulations as a project that is limited to the voluntary rehabilitation and/or installation of stormwater management practices (SMPs) on a property to better manage stormwater runoff. Often, the motivation to initiate a Stormwater Retrofit project is to reduce the applicant’s monthly stormwater bill. In addition, these projects often involve stormwater grants.

In most circumstances, projects classified as Demolition or Stormwater Retrofits will be exempt from PCSM Requirements, regardless of size. However, these types of projects must still comply with the Erosion & Sediment Control (E&S) requirement. The applicant is referred to Chapter 2 for more information.

Due to historic urbanization, New Development projects are uncommon in Philadelphia and must comply with the most stringent PCSM Requirements. The vast majority of development projects in Philadelphia are classified as Redevelopment projects. The applicant can submit supporting documentation (e.g., photographs, past permits, inspection reports, etc.) to confirm a redevelopment classification. If a Redevelopment project meets certain conditions, it may be exempt from the Flood Control and Channel Protection requirements. The applicant is referred to Section 1.2 for the Stormwater Regulations as well as requirement-specific exemptions.
Waterway Encroachments

Waterway encroachments are projects that occur within streambanks or rivers with the purpose of repairing the waterway or an object within the waterway. These projects include streambank stabilization, dam removal projects, and bridge abutment repairs. Earth disturbance that occurs within the waterway will be exempt from the PCSM Requirements. However, ancillary earth disturbance that occurs outside of the waterway, such as trail improvements or other development activities, will be applicable to the PCSM Requirements.

1.1.2 Watershed

The watershed in which a project site is located plays an important role in determining how PCSM Requirements (Section 1.2.1) are applied to a project. For example, ongoing watershed-wide Pennsylvania Stormwater Management Act (Act 167) planning studies determine Flood Management Districts for controlling peak rates of runoff, and watershed locations are also used to determine the applicability of the Channel Protection requirement for Redevelopment projects. For this reason, it is important that the applicant identify the correct watershed early in the design process. Watershed Maps in Appendix D provide a basic guide as well as PWD’s "Find Your Watershed" website, but the applicant can also contact PWD to verify a site’s watershed location.

There are seven major watersheds in Philadelphia:

- Darby and Cobbs Creeks,
- Delaware Direct,
- Lower Schuylkill River,
- Pennypack Creek,
- Poquessing Creek,
- Tookany/Tacony-Frankford, and
- Wissahickon Creek.
Watershed-based regulations are evolving to address stormwater challenges within Philadelphia. While the Stormwater Regulations apply to all projects that result in earth disturbance totals of 15,000 square feet or more (Section 1.1.3), watershed-specific regulations trigger the Stormwater Regulations at a lower disturbance threshold. Project sites located in the Darby and Cobbs Creeks Watershed and in the Wissahickon Creek Watershed are subject to additional watershed-specific stormwater management requirements. The latest information about watershed-specific regulations can be found on the PWD Stormwater Plan Review website.

**Darby and Cobbs Creeks Watershed**

Projects located in the Darby and Cobbs Creeks Watershed are subject to the provisions of the Darby and Cobbs Creeks Watershed Act 167 Stormwater Management Plan. Because the Stormwater Regulations were developed to comply with the plan for the Darby and Cobbs Creeks Watershed, all projects that propose 5,000 square feet or more of earth disturbance in the Darby and Cobbs Creeks Watershed are subject to the Stormwater Regulations and their associated PCSM Requirements (Section 1.2.1).

**Wissahickon Watershed Overlay**

To help reduce flooding, erosion, siltation, and channel enlargement resulting from development within the Wissahickon Creek Watershed, additional stormwater management requirements and impervious coverage limits may apply to projects within this watershed.

Projects located in the Wissahickon Creek Watershed are subject to the Philadelphia Code §14-510 / WWO, Wissahickon Watershed Overlay District. The applicability of these requirements depends on the location of the project within the watershed and the amount of impervious cover proposed in comparison to the existing impervious condition. A map of the Wissahickon Watershed Overlay (WWO) District can be found within the Code and can also be viewed using the City of Philadelphia online zoning map.

For projects located within the WWO District, the Philadelphia City Planning Commission (PCPC) will determine if additional stormwater management requirements are applicable; however, PWD Stormwater Plan Review will be responsible for review of the Post-Construction Stormwater Management Plan (PCSMP). The applicant is referred to Section 2.6 for more information on the WWO as it relates to project-specific requirements.
1.1.3 Earth Disturbance

Earth disturbance is the primary factor that determines whether a project is subject to the Stormwater Regulations. It is also a primary factor in determining the applicability of PCSM Requirements (Section 1.2.1) and the E&S requirement (Section 1.2.2). As such, applicants must properly and accurately assess the limits of earth disturbance associated with development projects to determine applicable requirements and the level of review required.

While earth disturbance of 15,000 square feet or more triggers the PCSM Requirements in most areas of the City, earth disturbance of 5,000 square feet or more triggers the PCSM Requirements in the Darby and Cobbs Creek Watershed. Projects located in the Wissahickon Creek Watershed may also be required to comply with PCSM Requirements at even lower earth disturbance totals. The applicant is referred to Section 1.1.2 above for specific requirements regarding projects located within the Wissahickon Creek Watershed or the Darby and Cobbs Creeks Watershed.

*Earth disturbance* is defined in the Stormwater Regulations as *any construction or other activity that disturbs the surface of land*. Examples of activities that consist of, or can commonly involve, earth disturbance include, but are not limited to, the following:

- Excavation;
- Embankments;
- Land development;
- Subdivision development;
- Moving, depositing, stockpiling, or storing of soil, rock, or earth materials, except as excluded below;
- Demolition activity that results in the disturbance of the land beneath or surrounding a structure, including foundation or building slab removal;
- Development above subsurface structures where earth, such as gravel or dirt, is exposed;
- Stormwater Retrofits that include ground-level SMP installation;
- Utility connections, including work in the public rights-of-way;

**Quick Tip**

A project may have multiple boundaries, each of which is significant when determining stormwater management applicability during the development process. For example, the parcel boundary, limits of earth disturbance, and area that must be managed for stormwater may all be different. Only the limit of earth disturbance is used to determine whether or not, and which portions of, the Stormwater Regulations apply to most projects.
• Installation of new Streets;

• Street Maintenance Activities;

• New paving and full depth pavement replacement;

• Installation of E&S controls and construction-related disturbance located over existing pervious areas, such as establishment of rock construction entrances, stockpiles, silt fencing, construction vehicle paths, staging, and fill areas;

• Grading;

• Clearing and grubbing; and

• Landscaping.

Activities that are not typically classified as earth disturbance include the following:

• Interior building renovations;

• Temporary stockpiles or rock construction entrances located over existing impervious surfaces;

• Restriping of paved areas; and

• Milling and repaving of existing paved areas, as long as the pavement subbase is not exposed during the milling process. The pavement subbase is defined as the layer of aggregate material laid on the subgrade, on which the base course layer is laid.

Some earth disturbance activities and their associated areas count toward the regulatory disturbance threshold for triggering PCSM Requirements, but are not required to be managed in the post-development condition. Such activities include the following:

• Demolition, provided the surface of the land is returned to a pervious condition;

• Waterway encroachment activities occurring within streambanks, rivers, or other waterways for the purpose of repairing the waterway. This can include streambank stabilization, dam removal, bridge abutment repairs, dredging, stream restoration, and erosion stabilization activities;

• Certain water features, as determined by PWD, such as spraygrounds, swimming pools, and fountains that will be chlorinated; and

• Earth disturbance located beneath an undisturbed existing impervious superstructure, such as a highway overpass.
There are other earth disturbance areas that do not count toward the regulatory disturbance threshold for triggering PCSM Requirements and are not required to be managed in the post-development condition. When calculating the total limit of earth disturbance for a development project, the earth disturbance area associated with the following activities should not be counted toward the total disturbance value triggering the PCSM Requirements. These areas include:

- **Street Maintenance Activities** within an existing Street that do not result in increased impervious areas. Examples include sidewalk replacement, asphalt repaving, utility trenching, curb cuts, street tree planting, and installation of associated street features such as ADA ramps, light poles, signs, benches, decorative planters, and green stormwater infrastructure (GSI).

- **New sidewalk installation** along an existing paved Street.

- **Area disturbed for Stormwater Retrofit installation.**

Applicants who wish to claim exemption from PCSM Requirements as a result of these earth disturbance areas should delineate them separately on E&S Plans submitted to PWD as part of the Conceptual Review Phase.

Earth disturbance activities that are exempt from PCSM Requirements are still required to comply with all appropriate E&S submission and review requirements, which may include PWD approval of an E&S Plan. The applicant is referred to Chapter 2 for more information on submission requirements. Exemption of a project from PWD's PCSM Requirements does not necessarily imply that the project is also exempt from PCSM Requirements from other City and State agencies. The applicant is referred to Section 2.6 and Section 2.7 for more information.

**Phased Projects, Common Plans of Development, and Contiguous Areas of Earth Disturbance**

It is not uncommon for large real estate projects to be developed and permitted in phases. When phasing is proposed, PWD will look at the earth disturbance associated with the entire Development Site to determine applicable requirements under the Stormwater Regulations. The Development Site is defined in the Stormwater Regulations as the land area where any Development activities are planned, conducted, or maintained, regardless of individual parcel ownership. It includes contiguous areas of disturbance across Streets and other rights of way, or private streets and alleys, during any stage of or on any portion of a larger common plan of development or sale.
A project may be considered a ‘common plan of development’ if is broadly considered any announcement or piece of documentation (including a sign, public notice, hearing, sales pitch, advertisement, website, drawing, zoning request, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor marking, etc.) indicating construction activities may occur on a specific plot. As an example, a redevelopment of a former industrial site that lays out streets, public parks, schools, areas of commercial development, and residential lots that may be sold to another developer are all considered part of the same development site.

**Being Conservative**

PWD often observes earth disturbances that occur during construction activity that exceed initial estimates provided on plans. To avoid costly delays, PWD recommends that the applicant be conservative when estimating the disturbance area at each stage of the review process. Should a site inspection reveal that 15,000 or more square feet of earth disturbance has occurred, the site will be required to comply with the Stormwater Regulations and will be subject to the enforcement actions outlined in the Stormwater Regulations.

Should a site inspection reveal that more than one acre of earth has been disturbed, the site will be required to apply for a Pennsylvania Department of Environmental Protection (PA DEP) National Pollutant Discharge Elimination System (NPDES) Permit. The site will be subject to the enforcement actions outlined in the Stormwater Regulations until the applicant receives a NPDES Permit. The applicant is referred to Section 2.7 for more information on the interaction between PWD and PA DEP.

PWD should be contacted prior to plan submittal and before any construction activities whenever there are questions or a need for clarification regarding earth disturbance activities.
1.2 Stormwater Regulations

This Section provides an overview of the Philadelphia Water Department (PWD) Stormwater Regulations (Stormwater Regulations), their objectives, and project-specific exemptions. After determining the project’s development type, watershed, and earth disturbance area using Section 1.1, the applicant will use this information, in conjunction with the requirement-specific exemptions detailed in this Section, to determine which portions of the Stormwater Regulations apply to the project.

The Stormwater Regulations have been developed in accordance with the Philadelphia Code, §14-704(3), and they consist of four major Post-Construction Stormwater Management (PCSM) Requirements: Water Quality, Channel Protection, Flood Control, and Public Health and Safety (PHS) Release Rate. In addition, all earth disturbance activity must comply with the Erosion and Sediment Control (E&S) requirements of the Pennsylvania Department of Environmental Protection (PA DEP), as specified in 25 Pa. Code §102.4. The details of the Stormwater Regulations can be found within Chapter 6, Stormwater of PWD Regulations, which are available at the City of Philadelphia website.

1.2.1 Post-Construction Stormwater Management Requirements

PCSM Requirements regulate how stormwater runoff leaves a project site in the built or post-development condition. PCSM Requirements have four components: Water Quality, Channel Protection, Flood Control, and PHS Release Rate requirements. All projects in the City of Philadelphia that generate earth disturbance of 15,000 square feet or more, or 5,000 square feet in the Darby and Cobbs Creeks Watershed, are subject to the PCSM Requirements and will follow the Development Compliance Review Path. The applicant is referred to Section 2.1.2 for an explanation of, and further guidance regarding, Review Paths.

Water Quality

Background

The objectives of the Water Quality requirement are as follows:

1. Reduce pollution in runoff;

2. Recharge the groundwater table and increase stream base flows;

3. Restore more natural site hydrology; and

4. Reduce combined sewer overflows (CSOs) from the City’s combined sewer systems.
The Water Quality requirement focuses on the removal of pollutants from stormwater runoff and is similar to requirements in surrounding states and other major cities across the country. Water quality benefits are provided, in part, by slowing water down and allowing suspended solids to settle. Because some nutrients, metals, organics, and other contaminants are bound to these sediment particles, this basic treatment mechanism can have multiple benefits. Generally, the physical, chemical, and biological processes that take place in a system that incorporates soil, water, and plants provide the best water quality improvements.

Infiltration of stormwater runoff can significantly reduce pollutant loads reaching surface water and generally does not pose a threat to groundwater quality if there is sufficient separation from the water table. Infiltrating stormwater runoff also has a direct impact on reducing the quantity of water in the sewer system that can contribute to CSOs and pollution of receiving waters. As such, infiltration is a major focus of the Water Quality requirement.

Attenuation of stormwater flows also contributes to water quality goals. In combined sewer systems, CSOs must be reduced by maintenance of a slow release rate set to match the area-weighted wet weather treatment rate of PWD’s Water Pollution Control Plants. Therefore, when infiltration is not feasible, water quality improvement in combined sewer areas must be achieved not only by reducing runoff pollutant load concentrations, but also by managing the quantity and timing of stormwater discharge. Detention and slow release reduces peak flows in the combined sewer during wet weather events, thus reducing the frequency and magnitude of CSOs.

**Requirement**

The Water Quality requirement stipulates infiltration of the first 1.5 inches of runoff from all directly connected impervious area (DCIA) within the limits of earth disturbance. This volume of stormwater runoff is referred to as the Water Quality Volume (WQv). If infiltration is feasible on the project site, the Water Quality requirement must be met by infiltrating 100% of the WQv through stormwater management practices (SMPs).

One strategy to address the Water Quality requirement is to minimize the amount of DCIA, which reduces the WQv that must be treated on-site. DCIA can be reduced through the use of disconnected impervious cover (DIC), which includes green roofs, porous pavement, and rooftop, pavement, and tree disconnections, which are outlined in greater detail in Section 3.2. Projects that propose to disconnect 95% or more of their post-development impervious area qualify for an expedited Disconnection Green Review as described in Section 2.4.

Guidance for calculating the WQv and design requirements for DIC and SMPs can be found in Chapter 3.
If infiltration is infeasible, or where it can be demonstrated that infiltration would cause property or environmental damage, the method of compliance with the Water Quality requirement differs based on the type of sewershed in which a project is located. The applicant is referred to the sewershed maps in Appendix D to determine the type of sewershed in which their project is located. These maps are approximations of sewershed boundaries. The applicant must refer to their project’s point of stormwater discharge when determining which requirements apply to their project.

If the applicant believes that infiltration is not feasible, a waiver from the infiltration requirement must be submitted to PWD Stormwater Plan Review for approval. The applicant is referred to Section 3.3 for guidance on determining and documenting infiltration feasibility. For projects in which greater than one acre of earth is disturbed and an Infiltration Waiver Request Form is submitted due to soil or groundwater contamination, PA DEP must evaluate the waiver request concurrently with PWD.

**Non-Infiltrating Projects Located in Combined Sewer Areas**

For all areas served by a combined sewer and for which infiltration is infeasible for all or a portion of the WQv, 100% of the WQv that is not infiltrated must be routed through an acceptable pollutant-reducing practice and detained in each SMP for no more than 72 hours. 100% of the WQv that is not infiltrated must also be released from the site at a maximum rate of 0.05 cubic feet per second (cfs) per acre of associated DCIA.

**Non-Infiltrating Projects NOT Located in Combined Sewer Areas**

For all areas not served by a combined sewer — including separate sewer areas, direct discharge projects, and un-sewered areas — for which infiltration is infeasible for all or a portion of the WQv, 100% of the WQv that is not infiltrated must be routed through an acceptable pollutant-reducing practice and detained in each SMP for no more than 72 hours. Acceptable non-infiltrating pollutant-reducing practices are listed in Table 3.2-2.
### Infiltration Feasible

<table>
<thead>
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<th>PROJECT LOCATION</th>
<th>REQUIREMENTS</th>
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<td>All</td>
<td>Infiltrate 100% of the WQv</td>
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### Infiltration NOT Feasible

<table>
<thead>
<tr>
<th>PROJECT LOCATION</th>
<th>REQUIREMENTS</th>
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<tbody>
<tr>
<td>In Combined Sewer Area</td>
<td>100% of the WQv that is not infiltrated must be:</td>
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<tr>
<td></td>
<td>• Routed through an acceptable pollutant-reducing practice AND</td>
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<td>• Detained in each SMP for no more than 72 hours AND</td>
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<td>• Released from the site at a maximum rate of 0.05 cfs per acre of associated DCIA</td>
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| Not In Combined Sewer Area | 100% of the WQv that is not infiltrated must be: |
|                           | • Routed through an acceptable pollutant-reducing practice AND |
|                           | • Detained in each SMP for no more than 72 hours |

The applicant is referred to Section 3.4.1 for detailed information on how to demonstrate a project’s compliance with the Water Quality requirement.

There are no exemptions from the Water Quality requirement.

### Channel Protection

#### Background

In addition to having an effect on the quality of stormwater runoff, the rate and frequency of stormwater discharge also poses a threat to the downstream environment and infrastructure. Management of peak rates from smaller storm events is referred to as Channel Protection because one of its benefits is to reduce erosive flows in downstream channels.

The objectives of the Channel Protection requirement are as follows:

1. Protect the quality of stream channels and banks, fish habitat, and man-made infrastructure from the influence of the erosive forces and downstream sedimentation due to high stream velocities; and

2. Reduce the quantity, frequency, and duration of CSOs.
Requirement

The Channel Protection requirement stipulates the detention and release of runoff from the one-year, 24-hour Natural Resources Conservation Service Type II design storm event for all DCIA within the limits of earth disturbance at a maximum rate of 0.24 cfs per acre of associated DCIA in no more than 72 hours.

This requirement applies equally to rivers, streams, and sites discharging to drainage ditches, natural or man-made ponds, and sewers that ultimately discharge to receiving waters, even if this discharge is indirect.

The applicant is referred to Section 3.4.1 for detailed information on how to demonstrate a project’s compliance with the Channel Protection requirement.

Exemptions

Projects meeting the following characteristics are exempt from the Channel Protection requirement:

- Redevelopment projects with less than one acre of earth disturbance.

- Redevelopment projects which reduce impervious area within the limits of earth disturbance (excluding public right-of-way) by at least 20%, based on a comparison of predevelopment impervious area to post-development DCIA.

- Redevelopment projects located in the Delaware Direct or Lower Schuylkill Watersheds.

- Development of new Streets and Street Maintenance Activities.

For the purposes of calculating impervious area reduction, the predevelopment impervious area is determined by the dominant land use for the ten years preceding the date of the project’s Existing Resources and Site Analysis (ERSA) Application (Section 2.1) submission. To claim a predominant land use which differs from the existing condition, the applicant must submit a predominant land use plan, in addition to an Existing Conditions Plan, to PWD Stormwater Plan Review.
Flood Control

Background

Uncontrolled large storm events have the potential to overwhelm the capacity of sewer infrastructure and receiving streams, particularly in areas that already experience high flows or have capacity limitations.

The objectives of the Flood Control requirement are as follows:

1. Reduce or prevent the occurrence of flooding in areas downstream of the development site, as may be caused by inadequate sewer capacity or stream bank overflow; and

2. Reduce the frequency, duration, and quantity of CSOs.

The Flood Control requirement is based upon the ongoing watershed-wide Pennsylvania Stormwater Management Act (Act 167) planning studies determining Flood Management Districts for controlling peak rates of runoff.
Requirement

The Flood Control requirement stipulates that a development project meet or reduce peak rates of runoff, as determined by its Flood Management District, from predevelopment to post-development conditions during certain storm events.

The applicant is referred to Table 3.4-1 for a listing of Flood Management Districts and their associated rate reductions by storm event. Detailed information on how to demonstrate a project’s compliance with the Flood Control requirement can also be found in the Section.

Exemptions

Projects meeting the following characteristics are exempt from the Flood Control requirement:

- Redevelopment projects that reduce impervious area within the limits of earth disturbance (excluding public right-of-way) by at least 20%, based on a comparison of predevelopment impervious area to post-development DCIA.

- Redevelopment projects located in Flood Management District C (see Appendix D) that discharge directly to the Delaware Direct or Lower Schuylkill main channels without the use of City infrastructure. Location within the District C boundary does not automatically exempt a project from this requirement. To apply for this exemption, the applicant must provide sufficient documentation regarding the proposed point of discharge as part of their application to PWD.

- Redevelopment projects located in District C-1 that discharge directly to the Tookany/Tacony-Frankford main channel or major tributaries without the use of City infrastructure. This exemption applies only to peak rates of runoff for storm events greater than the five-year storm. Location within the District C-1 boundary does not automatically exempt a project from this requirement. To apply for this exemption, the applicant must provide sufficient documentation regarding the proposed point of discharge as part of his or her application to PWD.

- Redevelopment projects located in the Delaware Direct Watershed or Lower Schuylkill Watershed, but situated outside of District C, that can discharge directly to the Delaware Direct or Lower Schuylkill main channels without the use of City infrastructure. Location within the Delaware Direct Watershed or Lower Schuylkill Watershed does not automatically exempt a project from this requirement. To apply for this exemption, the applicant must provide sufficient documentation regarding the proposed point of discharge as part of their application to PWD.

Quick Tip

One common tool used by the development community to meet the 20% reduction in impervious area exemption condition is installing a green roof. Green roofs help with reducing annual energy costs, typically last twice as long as conventional roofs, and increase rental values. The applicant is referred to Section 4.3 for more information on green roofs.
• Development of new Streets and Street Maintenance Activities.

For the purposes of calculating impervious area reduction, the predevelopment impervious area is determined by the dominant land use for the ten years preceding the date of a project’s ERSA Application (Section 2.1) submission. To claim a predominant land use which differs from the existing condition, the applicant must submit a predominant land use plan, in addition to an Existing Conditions Plan, to PWD Stormwater Plan Review.
Public Health and Safety Release Rate

Background

In some areas, sewer capacity limitations have the potential to impact public health and safety. To address this, peak flow control beyond the requirements of the Channel Protection and Flood Control requirements is necessary in accordance with the PHS Release Rate requirement.
Requirement

Sites located in certain combined sewer areas of the Delaware Direct and Lower Schuylkill River Watersheds where known flooding has occurred due to constraints in the sewer network are required to comply with a maximum release rate (cfs per acre) for the one-year through ten-year storm events. This rate is determined by PWD based upon analysis of available pipe capacity for the project within the sewershed and will differ depending on the location of the project’s sewer connection(s). If a PHS release rate is required for the site, it will be noted by PWD during the Conceptual Review Phase for projects in the Development Compliance Review Path. PHS rates will not be applied to projects in other Review Paths. The applicant is referred to Section 2.2 and Section 2.3 for information on Review Paths and Review Phases, respectively. A PHS Release Rate requirement applies to all areas within a project’s limit of earth disturbance, pervious and impervious alike.

An applicant with a project believed to be located within a designated PHS boundary, or wishing to learn more about whether a PHS Release Rate applies to the project, is advised to contact PWD Stormwater Plan Review prior to submittal.

1.2.2 Erosion and Sediment Control Requirement

Background

While the four previously discussed Stormwater Regulations relate to PCSM Requirements, effective stormwater management is also critical during the construction process. Clearing, grading, and other site development activities expose soil surfaces, leaving them vulnerable to erosion. Soil erosion and sediment loss not only affect the development site, but can also block downstream inlets and sewers, causing localized flooding, and carry sediment and associated pollutants to the City’s Water Pollution Control Plants or receiving waters. These impacts can contribute to flooding, maintenance concerns, and significant environmental issues.

Quick Tip

A handy Erosion & Sediment FAQ is available for contractors and applicants alike, covering such topics as the importance of E&S controls, typical E&S control measures, E&S requirements based on earth disturbance, and failure to install and maintain E&S controls.
**Requirement**

The owner of a development site is responsible for ensuring that active construction activities are not in violation of 25 Pa. Code Chapters 92 and/or 102 or the Clean Streams Law, the act of June 22, 1937, P.L. 1987, 35 P.S. §691.1 et seq. At minimum, all earth disturbance must comply with the E&S requirements of the PA DEP as specified in 25 Pa. Code §102.4.

Specific submittal preparation requirements vary depending on the limit of earth disturbance and project location. All E&S Plans must be prepared in accordance with PA DEP guidelines as laid out in the latest edition of the *PA DEP Erosion and Sediment Pollution Control Program Manual*.

The applicant is referred to Section 2.3 for more information on E&S Plan preparation and review requirements. At minimum, all projects, regardless of size, must install E&S controls which are appropriate given the site layout, neighboring features, and proposed disturbance activities.