

City of Oberlin
Storm Water Management Program
Post-Construction Storm Water Management

Best Management Practices 3.2.5	Post-Construction Storm Water Management (This section is a summary of the post-construction storm water mgmt program) The City of Oberlin will develop and implement an ordinance and accompanying Public Works Standards which will provide for the control of storm water runoff from new development and redevelopment sites.
Permit Requirement	Develop, implement, and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into your small MS4. Your program must ensure that controls are in place that would prevent or minimize water quality impacts;
Permit Section 3.2.5.1	
Goal of BMP:	<p>Provide a description of the goal of the BMPs used to meet this requirement.</p> <p>The City's goal for the Post-Construction Storm Water Management In New Development and Redevelopment component of its SWMP is to develop and implement Best Management Practices (BMPs) for storm water runoff control that mitigate flooding, reduce pollution of the natural environment and protect the water quality of streams and receiving water bodies.</p> <p>The BMPs will establish minimum requirements and procedures to manage the impacts associated with storm water runoff to best protect, maintain, and enhance the public health, safety, and general welfare of Oberlin.</p> <p>Fulfillment of this goal is expected to result in minimizing risk of damage to public and private property, minimizing the impact of development on land and water courses, minimizing risk to stream channel erosion, reducing local flooding, and generally maintaining runoff characteristics that do not threaten public health and safety.</p>
Program Description: Develop, implement, and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into your small MS4. Your program must ensure that controls are in place that would prevent or minimize water quality impacts; The City of Oberlin expects to plan and implement the Post-Construction Storm Water Management in New Development and Redevelopment component of its SWMP as follows: 3.2.5.1.1 Development, implementation and enforcement of a program that results in management of storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre. Projects less than one acre that are part of a larger common plan of development or sale, that discharge into the city's MS4 will be included. The City's program will ensure that controls are put in place to prevent or minimize water quality impacts. 3.2.5.1.2 Strategies the City expects to develop and implement to ensure compliance with Post-Construction Storm Water Management in New Development and Redevelopment include:	

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- 3.2.5.1.2.1 The City expects to develop and adopt an ordinance that will establish its legal basis for requiring owners of newly developed or redeveloped properties to manage their respective stormwater facilities in compliance with the City's SWMP.
- 3.2.5.1.2.2 Management standards will be established concerning both quantity and quality storm water runoff discharges to the City's MS4.
- 3.2.5.1.2.3 Such ordinance may either be specific to Post-Construction Storm Water Management in New Development and Redevelopment or it may be part of a comprehensive storm water management ordinance. The City's Public Works Standards will be expanded to include its Post-Construction Storm Water Management in New Development and Redevelopment program.
- 3.2.5.1.2.4 Public Works Standards will be developed for the implementation of erosion and sedimentation control measures by Construction Site Operators.
- 3.2.5.1.2.5 The City expects to establish water quality and quantity standards for stormwater discharges to its MS4 that will not hinder its ability to meet its NPDES Requirements.
- 3.2.5.1.2.6 The City expects to establish approved structural BMPs that developers and re-developers can use to meet city requirements for stormwater runoff discharge to its MS4. Developers and redevelopers will be permitted to propose alternatives to the City standards.
- 3.2.5.1.2.7 The City expects to develop and implement procedures to handle information submitted by the public.
- 3.2.5.1.2.8 The City expects to develop and implement procedures to perform site inspection and enforcement of control measures.
- 3.2.5.1.3 The City will establish an ordinance and Public Works Standards authorizing the management and control of storm water run-off resulting from new development and redevelopment activities. Said ordinance will establish controls and sanctions to ensure compliance to the extent allowable under law.
- 3.2.5.1.3.1 The City's program for Post-Construction Storm Water Management in New Development and Redevelopment would be applied to sites of 1 acre or greater except as further noted below.
- 3.2.5.1.3.2 Projects that are less than one acre but are part of a larger common plan of development or sale that discharge into the City's MS4 are expected to be subject to the requirements of the City's SWMP.
- 3.2.5.1.4 The City expects that Developers and Re-Developers will be required to enter into development agreements which require construction, operation and maintenance of appropriate facilities to process storm water, resulting in discharge to the MS4 in quantity and quality acceptable to the city.
- 3.2.5.1.4.1 The party or parties so responsible shall be determined by such agreements.
- 3.2.5.1.4.2 The City will determine its position regarding public and/or private management of such facilities. In either scenario, adequate funding must be ensured. Public management may lead to the establishment of an enterprise utility (stormwater utility). Private management may lead to a bonding or escrow account-secured funding system. Public input will be important in this regard.

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Implementation Schedule: (Year by year description of program)	
2003	<p>Provide a description of what BMPs you propose to do in 2003.</p> <p>Develop Public Works Standards for Post-Construction Site Erosion Control. These standards will be based on the Critical Storm procedure for stormwater retention/detention basin design. These standards will become the basis for the local ordinance. Review model ordinances. Draft local ordinance. Adopt and implement local ordinance based on the Public Works standards and legal authority.</p> <p>Adopt revised Comprehensive Land Use Plan.</p> <p>Review Public Works Standards and local ordinance with Developers, Builders, Architects and Engineers as necessary.</p>
2004	<p>Provide a description of what BMPs you propose to do in 2004.</p> <p>Develop model riparian corridor maintenance/restoration plan which would establish setback controls along waterways within the City. Adopt Public Works standards and/or a local ordinance as necessary and appropriate.</p> <p>Amend local planning, zoning and building regulations as necessary to implement the Comprehensive Plan.</p> <p>Review Public Works Standards and local ordinance with Developers, Builders, Architects and Engineers as necessary.</p> <p>Train inspectors; document inspection activities.</p>
2005	<p>Provide a description of what BMPs you propose to do in 2005.</p> <p>Disseminate model riparian corridor maintenance/restoration plan.</p> <p>Review Public Works Standards and local ordinance with Developers, Builders, Architects and Engineers as necessary.</p> <p>Document inspection activities.</p>
2006	<p>Provide a description of what BMPs you propose to do in 2006.</p> <p>Review Public Works Standards and local ordinance with Developers, Builders, Architects and Engineers as necessary.</p> <p>Train inspectors; document inspection activities.</p>
2007	<p>Provide a description of what BMPs you propose to do in 2007.</p> <p>Review model riparian corridor maintenance/restoration plan.</p> <p>Review Public Works Standards and local ordinance with Developers, Builders, Architects and Engineers as necessary.</p> <p>Document inspection activities.</p>

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Measurable Goals: (Section 3.2.5.2.8)	
Provide a description of the measurable goals of each BMP used to meet this requirement.	
By December, 2003, the City of Oberlin will adopt the necessary ordinance to fully implement the Best Management Practices outlined herein.	
Decision Process:	You must document your decision process for the development of a post-construction SWMP. Your rationale statement must address both your overall post-construction SWMP and the individual BMPs, measurable goals, and responsible persons for your program. The rational statement must include the following information, at a minimum:
Permit Section 3.2.5.2	
Provide a description of the decision process used to develop the necessary Post-Construction SWMP BMPs.	
3.2.5.2.1 An Ordinance and accompanying Public Works Standards which require erosion and sedimentation controls on new development and redevelopment sites will be adopted based on consideration of the following:	
3.2.5.2.1.1 Runoff control is expected to be more cost effective than removing sediment and restoring damaged receiving waters.	
3.2.5.2.1.2 Stormwater runoff from development sites is considered to be detrimental to both water volume and water quality issues. Controlling concentrated flows from unmanaged runoff will mitigate negative impacts.	
3.2.5.2.1.3 The practice of installing, operating and maintaining structural controls is not always completely effective. Thus, it is important to develop appropriate enforcement mechanisms.	
3.2.5.2.2 The City of Oberlin will develop its SWMP in consideration of various local conditions including water quality, types of soils, development pressures, etc.	
3.2.5.2.3 The City of Oberlin will incorporate the following BMPs into its SWMP:	
3.2.5.2.3.1 The City of Oberlin is in the process of updated its Comprehensive Land Use Plan. The updated Plan will provide guidance to direct future growth to identified areas and away from sensitive areas. This Plan is being developed in full consideration of Open Space issues relative to the City of Oberlin. It is anticipated that the Plan will ultimately include recommendation for dedicated funding sources to mitigate the various impacts of new development. As part of its SWMP, the City of Oberlin proposes to develop a model riparian corridor maintenance/restoration plan.	
3.2.5.2.3.2 The City of Oberlin actively encourages in-fill development, residential, commercial and industrial. The Comprehensive Land Use Plan is anticipated to further explore the positive benefits of in-fill development while denoting those areas in which future, continued in-fill development may be most applicable. The Comprehensive Land Use Plan is considering the availability of the various utilities, including the MS4 in its recommendations about future land use development.	
3.2.5.2.3.3 Please see Section 3.2.1, Public Education & Outreach and Section 3.2.2 Public Involvement/Participation of this SWMP.	

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3.2.5.2.3.4 Other measures designed to minimize the effects of development will be incorporated into the proposed ordinance and the Public Works Standards as referenced above. Please review Section 3.2.6, Pollution Prevention/Good Housekeeping for Municipal Operations.

3.2.5.2.4 Structural BMPs are expected to include:

3.2.5.2.4.1 Stormwater Ponds/Wetlands

Stormwater ponds can be a combination of extended detention pools or a shallow wetland with a permanent pool. Stormwater ponds are used to treat both quality and quantity of runoff. Runoff is captured and treated in the pond until the next precipitation event displaces it. The natural biotic system removes pollutants through sedimentation and plant uptake. Examples of stormwater ponds include: a micropool extended detention pond, wet pond, wet extended detention pond, multiple pond system, and pocket pond. These pools generally differ by size, arrangement, and runoff detention time, and are designed for the specific environmental area in which they will be constructed and the predicted rainfall in their respective region.

Stormwater wetlands are shallow wetland or marsh areas that often incorporate small permanent pools or extended detention storage to achieve treatment of the runoff. Wetlands can be classified into three types: incidental—caused by predevelopment or prior human development, natural – existing on its own in nature, or constructed – built for the purpose of treating stormwater or wastewater. Constructed or incidental wetlands can be designed to treat specific stormwater pollutants. In addition to treating runoff for quality and quantity, constructed wetlands can increase the vegetation and animal habitat in the immediate area. Examples of stormwater wetlands include: shallow wetlands, extended detention (ED) shallow wetlands, pond & wetlands system, and pocket wetlands. These systems differ by configuration, size, and biological life in the area.

3.2.5.2.4.2 Filtration Practices

Stormwater filtration systems capture and temporarily store runoff and then pass it through a filter bed of sands, organic materials such as vegetation, soils, or other media. Filtered runoff may be collected and returned to the surface water or allowed to infiltrate into the soil. Most filtration practices require a drainage area of less than ten acres surrounded by a dense vegetative cover; filters are primarily used to treat for runoff quality. Stormwater filtration systems include such practices as: surface sand filters, underground sand filters, perimeter sand filters, organic filters, pocket sand filters, and bioretention.

Bioretention filtration systems are relatively new designs. This practice consists of a grass buffer strip that collects runoff and then passes through a sand bed, a ponding area, an organic layer or mulch layer, planting soil, and then finally plants. The water is treated as it passes through these layers and exfiltrates through the surrounding soil. This practice typically treats stormwater that has been collected over impervious surfaces in urban zones. Bioretention may be used in stabilized drainage areas to minimize sediment loading on the local waterways. Quality of runoff is increased through use of bioretention and the quantity of the runoff can be reduced.

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Open channels are types of flow diversion structures designed to capture and treat stormwater runoff within dry, wet, or vegetated cells formed by check dams or other means. The systems can be either natural or manmade, and treat both quality and quantity of stormwater runoff. Dry swales may be used for low-density residential projects or areas with very small impervious cover. Wet swales may be used to treat highway runoff in low lying or flat terrain areas. However, open channel systems are not very effective in wet or poorly draining soils nor are they desired in very flat or very hilly regions. Optimal performance of these systems is obtained when these practices are regularly maintained. Dry swales, wet swales, grass lined swales, vegetated filter strips, and biofilters are all classified as open channel systems.

3.2.5.2.4.3 Infiltration

Infiltration practices capture and temporarily store runoff while the water slowly infiltrates into the soil. These practices can be used to remove, for example, some soluble forms of nutrients and bacteria, suspended solids, coliform bacteria, and organics, with relatively high efficiencies. Infiltration devices are restricted to soils with low clay content and a great distance between the ground surface and bedrock. In the Oberlin area, the predominant soil types are clay; thus, infiltration may not be a viable alternative.

Permit Section
3.2.5.2.5

What are the mechanisms (ordinance or other regulatory mechanisms) you will use to address post-construction runoff from new developments and redevelopments and why you chose that mechanism. If you need to develop a mechanism, describe your plan and a schedule to do so. If you ordinance or regulatory mechanism is already developed, include a copy of the relevant sections with your program.

3.2.5.2.5 The City of Oberlin will develop and implement an ordinance and accompanying Public Works Standards which provide for the control of storm water runoff from new development and redevelopment sites. The rationale for this mechanism and the schedule for its implementation are more fully described above.

Permit Section
3.2.5.2.6

How you will ensure the long term operation and maintenance (O & M) of your selected BMPS. Options to help ensure that future O & M responsibilities are clearly identified include an agreement between you and another party such as the post-development landowners or regional authorities.

3.2.5.2.6 Please review Section 3.2.5.1.4 for the City's proposed approach to ensure the long term O & M of the selected BMPs.

Supporting Information:

Provide any supporting documentation necessary – such as training manuals, program standards, contracts with service providers or examples of available information/public education brochures.

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<i>Reporting Mechanism:</i>	
<p style="color: blue; font-size: small;">Provide a description of the documentation anticipated to be included in the permit-required Annual Report. Examples of documentation may include description of work performed, storm sewer maps, investigation reports, measurable goals data and any recommended revisions to the SWMP.</p> <p>The City of Oberlin will provide a copy of the relevant Public Works Standards, its Storm Water Control ordinance, training and inspection records and other appropriate materials as part of its annual report.</p>	
<i>Best Management Practices</i>	<i>Post-Construction Storm Water Management in New Development and Redevelopment</i>
<i>Responsible Party – Contact Information: (Section 3.2.5.2.7)</i>	
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