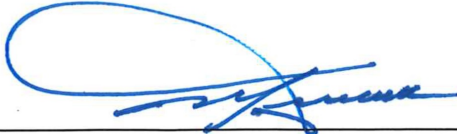
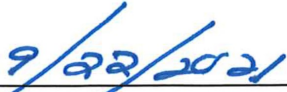


**Town of Watertown
Stormwater Management and Erosion Control Rules and Regulations**

Approved and Adopted by the Town Manager



Michael J. Driscoll, Town Manager



Date

**Town of Watertown
Rules and Regulations
for
Stormwater Management
and
Erosion Control**

1.0 Purpose

The purpose of these Rules and Regulations is to preserve, maintain, and enhance the public health, safety, environment, and general welfare of the Town of Watertown by establishing minimum requirements and procedures to control the adverse effects of erosion and sedimentation, uncontrolled stormwater runoff, decreased groundwater infiltration, and nonpoint source pollution, as more specifically addressed in the Stormwater Management and Erosion Control Ordinance (Chapter 98 of the Town Code of Ordinances).

2.0 Definitions

Agricultural Use: The cultivation and tillage of the soil; dairying; the production, cultivation, growing, and harvesting of any agricultural, aquacultural, floricultural, or horticultural commodities; the growing and harvesting of forest products upon forest land; the raising of livestock including horses; the keeping of horses as a commercial enterprise, the keeping and raising of poultry, swine, cattle, and other domesticated animals used for food and other agricultural purposes, including bees and fur-bearing animals; and any forestry or lumbering operations performed by a farmer, who is hereby defined as one engaged in agriculture or farming as herein defined, or on a farm as an incident to or in conjunction with such farming operations, including preparations for market, delivery to storage or to market or to carriers for transportation to market.

Alter or Alteration: Any activity that will change the ability of a ground surface to absorb water or will change existing surface drainage patterns. Alter may also be referred to as “alteration” and “land disturbance activities.”

Applicant: Any person who has filed a Stormwater Management and Erosion Control Permit Application in accordance with these Rules and Regulations.

Best Management Practice (BMP): A structural or nonstructural technique for managing stormwater to prevent or reduce nonpoint source pollutants from entering surface waters or groundwater. A structural stormwater Best Management Practice includes a basin, discharge outlet, swale, rain garden, filter or other stormwater treatment practice or measure either alone or in combination including without limitation any overflow pipe, conduit, weir control structure that: (a) is not naturally occurring; (b) is not designed as a wetland replication area; and (c) has been designed, constructed, and installed for the purpose of conveying, collecting, storing, discharging, recharging, or treating stormwater. Nonstructural stormwater Best Management

Practices include source control and pollution prevention measures, such as street/parking lot sweeping, catch basin cleaning, public education/outreach, etc.

Biofiltration: The process of reducing pollutant concentrations, particularly nutrients, in stormwater runoff by filtering through vegetative areas and organic media, allowing pollutants to be removed through the processes of sedimentation and biological action.

Conveyance: Any structure or device, including pipes, drains, culverts, curb breaks, paved swales and man-made swales, natural and man-made channels, and ditches designed or utilized to move or direct stormwater runoff or existing water flow; any impervious surface/sheet flow utilized to remove rainfall (for example a parking lot) which drains directly onto a vegetated surface or public road without any curbing or drainage system to intercept the flow.

Design Storm: A precipitation event of specified return frequency and duration (e.g., a storm that occurs only once every 2 years with 24-hour duration) that is used to calculate the stormwater runoff volume and peak discharge rate.

Detention: The regulation and control of stormwater runoff by slowing the rate of discharge to reduce impacts downstream.

Easement: A right in land acquired by a party to use or enter the property of another party for access, stormwater management, utilities, or other purpose.

Engineer: A registered Professional Engineer (PE) licensed to practice professional engineering in the Commonwealth of Massachusetts.

Erosion Control: The prevention or reduction of the movement of soil particles or rock fragments due to stormwater runoff.

Erosion and Sediment Control Plan: A plan that shows the location and construction detail(s) of the erosion and sediment reduction controls to be utilized during and after construction.

Floodplain: Any land area susceptible to being inundated by floodwaters from any source which will theoretically result from the statistical 100-year frequency storm. The boundary shall be that determined by reference to the Flood Insurance Rate Map (FIRM) for the Town of Watertown, published by the Federal Emergency Management Agency (FEMA). If such data is unavailable, the boundary shall be the maximum lateral extent of floodwater which has been observed or recorded.

Floodplain Contingency Plan: A plan establishing procedures for response to areas that have flooded or may be jeopardized by potential flooding.

Floodway: The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the 100-year frequency storm without cumulatively increasing the

water surface elevation more than a designated height. The boundary shall be that determined by reference to the Flood Insurance Rate Map (FIRM) for the Town of Watertown, published by the Federal Emergency Management Agency (FEMA).

Illicit Discharge: Any direct or indirect non-stormwater discharge to the storm drain system, except as exempted in the Town of Watertown Code of Ordinances Section 97.07.

Impervious Surface or Area: Any material or structure on or above the ground that prevents water from infiltrating through the underlying soil. Impervious surface is defined to include, without limitation: paved surfaces (parking lots, sidewalks, driveways, etc.), roof tops, swimming pools, and patios, as well as paved, gravel and compacted dirt surfaced roads.

Infiltration: Percolation of water into the subsurface. Also referred to as “Recharge.”

Land Disturbance Activity: Any activity that causes a change in the position or location of soil, sand, rock, gravel, or similar earth material.

Low Impact Development (LID): A site design strategy for managing stormwater by maintaining or replicating the predevelopment hydrologic functions through the use of design techniques to create a functionally equivalent hydrologic landscape.

Maintenance: Maintenance of a stormwater management system means the work necessary to keep the system functional and in good repair so that it may continue to operate as originally designed. Maintenance of a stormwater management system does not include work that (a) reduces the capacity of the system to treat stormwater, provide recharge, or attenuate peak flow; (b) increases the total or peak rate or volume of the stormwater managed by the system; (c) directs additional stormwater discharges to the system; or (d) results in reduced use of above ground stormwater Best Management Practices.

Massachusetts Stormwater Management Standards: The Standards issued by the Massachusetts Department of Environmental Protection (DEP), codified in regulations at 310 CMR 10.05(6)(k)-(q) and further defined and specified in the Massachusetts Stormwater Handbook, Volumes 1 through 3, issued by the DEP. The Standards address stormwater impacts through implementation of performance standards that reduce or prevent pollutants from reaching water bodies and control the quantity of runoff from a site.

Maximum Extent Practicable: The standard for which Applicants must demonstrate that they have made all reasonable efforts to meet applicable requirements, have made a complete evaluation of possible stormwater management measures that could be used, and have implemented the highest practicable level of stormwater management.

M.G.L.: Massachusetts General Laws.

MS4 Permit: General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts.

Municipal Separate Storm Sewer System (MS4): The system of conveyances designed or used for collecting or conveying stormwater, including any road with a drainage system, street, gutter, curb, inlet, piped storm drain, pumping facility, retention or detention basin, natural or man-made or altered drainage channel, reservoir, and other drainage structures that together comprise the storm drainage system owned or operated by the Town of Watertown.

National Pollutant Discharge Elimination System (NPDES) Discharge Permit: A permit issued by the United States Environmental Protection Agency or jointly with the Commonwealth of Massachusetts that authorizes the discharge of pollutants to waters of the United States or Commonwealth.

New Development: Any construction activities or land alteration on an area that has not previously been developed to include impervious cover.

Operation and Maintenance Plan: A plan setting up the functional, financial, and organizational mechanisms for the ongoing operation and maintenance of a stormwater management system to ensure that it continues to function as designed.

Overlay of Pavement: The placement of pavement on top of an existing impervious surface. The underlying surface is sometimes milled (partially ground down in thickness) before the overlay is placed.

Owner: A person with a legal or equitable interest in land, structures, or equipment.

Permittee: The person who is issued a permit by the Watertown Department of Public Works pursuant to these Rules and Regulations.

Person: An individual, partnership, association, firm, company, trust, corporation, agency, authority, department, or political subdivision of the Commonwealth or the federal government, to the extent permitted by law, and any officer, employee, or agent of such person.

Pollutant: Any substance, either man-made or man-induced, that alters the chemical, physical, biological, or radiological integrity of water.

Public Shade Trees: All trees within a public way or on the boundaries thereof, as defined within Massachusetts General Law Chapter 87 (Public Shade Tree Law).

Reclamation of Pavement: A procedure whereby existing pavement is broken and pounded into small fragments.

Recorded: Recorded in the Middlesex South District Registry of Deeds; if registered land is affected, filed with the recorder of the Land Court of Massachusetts.

Redevelopment: Development, replacement, rehabilitation, expansion, demolition, or phased projects that disturb the ground surface on previously developed sites.

Responsible Party: Any person or entity holding fee title to the property or acting as the Owner's representative, including any person, firm, corporation, or other entity performing services, contracted, subcontracted, or obligated by other agreement to design, implement, inspect, verify, or maintain the BMPs and other approved elements of stormwater management plans and permits.

Retention: The process of collecting and holding stormwater runoff with no conveyance or surface outflow of runoff. Retention may be achieved by infiltrating stormwater runoff into underlying soils or by storing rainwater for use (also known as rainwater harvesting).

Sediment: Mineral or organic soil material that is transported by wind or water from its origin to another location; the product of erosion processes.

Sedimentation: The process or act of depositing sediment.

Sheet Flow: A component of stormwater runoff in the form of an unconcentrated, overland flow or downslope movement of water as a thin, continuous film over relatively smooth soil, rock, or paved surfaces.

Simplified Permit: A permit issued for an Application that meets a set of predetermined standards adopted by the Department of Public Works in accordance with Section 98.01(D) of the Stormwater Management and Erosion Control Ordinance.

Stormwater Management and Erosion Control Permit: A permit issued by the Department of Public Works, after review of an application, plans, calculations, and other supporting documents, in accordance with the provisions of the Stormwater Management and Erosion Control Ordinance.

Stormwater Management Plan: A plan submitted as part of an application for a Stormwater Management and Erosion Control Permit, in accordance with Section 7.0 of these Rules and Regulations.

Stormwater Management System: The collective system for conveying, collecting, storing, discharging, recharging, or treating stormwater on-site, including stormwater Best Management Practices and any pipes and outlets intended to transport and discharge stormwater to the groundwater, a surface water, or a municipal separate storm sewer system. Also referred to as "drainage."

Stormwater Pollution Prevention Plan (SWPPP): A site-specific document or collection of documents that identifies the potential sources of stormwater pollution, describes stormwater

control measures, such as BMPs, to reduce or eliminate the identified pollutants, and identifies procedures operators will implement to comply with specific permit conditions.

Stormwater Runoff: Flow over the ground surface resulting from precipitation or snow and ice melt or through a drainage system.

Sump Pump: A pump and associated conduits, pipes, or hoses used to remove uncontaminated groundwater that has accumulated in a basement sump basin, crawl space, or foundation sub-drain.

Surveyor: A Professional Land Surveyor registered to practice land surveying in the Commonwealth of Massachusetts.

Total Maximum Daily Load (TMDL): A regulatory plan (authorized by the Clean Water Act) that identifies the amount of a pollutant that a waterbody can assimilate without exceeding its water quality standard for that pollutant. The Final TMDLs for Nutrients in the Upper/Middle Charles River and Lower Charles River Basin establish limits on total phosphorus loading to the Charles River upstream and downstream of the Watertown Dam, respectively.

Total Phosphorus (TP): A measure of the total dissolved and particulate forms of phosphorus. Excessive phosphorus in stormwater runoff to surface waters can cause algal blooms and accelerated plant growth, which can lead to decreased dissolved oxygen availability and possibly fish kills.

Total Suspended Solids (TSS): Total suspended solids, as used in the context of the Massachusetts Stormwater Management Standards.

Utilities: Private or municipal services, including, without limitation, telecommunications, cable, light and power, gas, sanitary sewers, drainage, water mains, and appurtenances.

Zoning Enforcement Officer: The person responsible for enforcing the Town of Watertown Zoning Ordinance.

3.0 Authority

The Rules and Regulations contained herein have been adopted by the Department of Public Works in accordance with Section 98.03(C) of the Town of Watertown Stormwater Management and Erosion Control Ordinance.

4.0 Administration

The Watertown Department of Public Works shall administer, implement, and enforce these Rules and Regulations. Any powers granted to or duties imposed upon the Department of Public Works may be delegated to the Department's employees or agents.

5.0 Applicability

All activities subject to the Stormwater Management and Erosion Control Ordinance (as set forth in Section 98.01(B) of the Ordinance) must obtain a Stormwater Management and Erosion Control Permit.

6.0 Permit Procedures and Requirements

Projects requiring a Stormwater Management and Erosion Control Permit shall be required to submit the materials specified in this Section, except as stipulated in Section 12.0 for Simplified Permits.

6.1 Application Requirements

An Applicant seeking to perform a land disturbance activity subject to the Stormwater Management and Erosion Control Ordinance shall submit to the Department of Public Works a Stormwater Management and Erosion Control Permit Application on a form provided for that purpose.

Except as provided for in Section 12.0, an application must be accompanied by the following:

- a Stormwater Management Plan meeting the requirements of Section 7.0; and
- a non-refundable Application Review Fee, as provided in Section 6.4.2.

The Stormwater Management and Erosion Control Permit Application must be signed by an Engineer, who will verify that the design of all stormwater management practices meet the requirements of these Rules and Regulations. No Stormwater Management and Erosion Control Permit shall be issued until a satisfactory Stormwater Management Plan that meets the requirements of Section 7.0 and Performance Standards of Section 8.0 has been reviewed and approved by the Department of Public Works.

6.2 Application Procedure

- 6.2.1 An application for a Stormwater Management and Erosion Control Permit may be filed with the Department of Public Works on any regular business day.
- 6.2.2 Permit applications shall include two copies of the Stormwater Management Plan, including all documents required in accordance with Section 7.0 of these Rules and Regulations, and the Application Review Fee, in accordance with Section 6.4.2.
- 6.2.3 Within 45 days of the receipt of a complete permit application, including all documents as required herein, the Department of Public Works shall inform the Applicant whether the Stormwater Management and Erosion Control Permit has been approved or disapproved, in accordance with Section 6.5.
- 6.2.4 If the permit application or one or more of the required plan components is disapproved, the Applicant may make the necessary revisions and resubmit the application. The Department of Public Works shall have 45 days from the date the

additional information or revised application is received to inform the Applicant that the application and required plans are either approved or disapproved, in accordance with Section 6.5.

6.3 Right-of-Entry for Inspection

During the application process, the Department of Public Works, its employees and agents (including consultants) may conduct visits of the project to review the information presented in the application. As provided in Section 10.0 of these Rules and Regulations, inspections shall be required during the construction of the project. To the extent permitted by law, or if authorized by the owner or other party in control of the property, the Department of Public Works, its agents and employees may enter upon the property before, during, and after construction at reasonable times and in a reasonable manner for the purpose of ensuring continuing compliance with the terms and requirements of the Ordinance, these Rules and Regulations, or an approved Stormwater Management and Erosion Control Permit.

6.4 Application Review Fees and Technical Review

6.4.1 General

The Department of Public Works shall obtain with each submission an Application Review Fee established by the Department to cover expenses connected with the review of an application and issuance of a Stormwater Management and Erosion Control Permit. A Technical Review Fee, sufficient to cover professional review services for the project, may also be required in accordance with Section 6.4.3.

6.4.2 Application Review Fee

1. A non-refundable Application Review Fee of the larger of \$50.00 or \$0.0030 per square foot of land area that will be disturbed by activities authorized by the Stormwater Management and Erosion Control Permit shall be due and payable to the Town of Watertown at the time an application is filed.
2. These fees are in addition to any other local or state fees that may be charged under any other law, regulation, or local ordinance.

6.4.3 Technical Review

Some permit applications may require the Department of Public Works to engage the employment of outside consultants for specific expert services deemed necessary by the Department to come to a final decision on the application. These services may include, but are not limited to, wetland survey and delineation, hydrologic and drainage analysis, hydrogeologic analysis, stormwater quality analysis, inspections, as-built plan review, and analysis of legal issues.

1. The consultant shall be chosen by, and report only to, the Department of Public Works. The fee charged by the consultant shall be paid for by the Applicant.

2. The Department of Public Works shall give written notice to the Applicant of the selection of an outside consultant, which notice shall state the identity of the consultant and the fee to be charged. Such notice shall be deemed to have been given on the date it is mailed or hand delivered.
3. The Applicant shall provide written confirmation to the Department of Public Works that such fee shall be paid for by the Applicant. The consultant may require that a retainer be paid prior to initiating work. Failure by the Applicant to confirm acceptance of the consultant fee and pay the retainer, if required, within ten (10) business days of written notice by the Department of Public Works shall be cause for the Department to determine that the application is incomplete.
4. The services of the consultant shall be paid in full by the Applicant prior to issuance of a Stormwater Management and Erosion Control Permit.

6.5 Actions

The action of the Department of Public Works, rendered in writing, shall consist of one of the following:

1. Approval of the Stormwater Management and Erosion Control Permit Application based upon determination that the proposed plan:
 - meets the Performance Standards in Section 8.0;
 - will adequately protect the water resources of the community; and
 - is in compliance with the requirements set forth in these Rules and Regulations;
2. Approval of the Stormwater Management and Erosion Control Permit Application subject to written conditions, modifications, or restrictions required by the Department of Public Works that will ensure that the project meets the Performance Standards in Section 8.0 and adequately protects the water resources of the community, as set forth in these Rules and Regulations;
3. Disapproval of the Stormwater Management and Erosion Control Permit Application based upon a determination that the proposed plan, as submitted, is incomplete, does not meet the Application Requirements in Section 7.0 or the Performance Standards in Section 8.0, or does not adequately protect the water resources of the community, as set forth in these Rules and Regulations; or
4. Disapproval of an Application “without prejudice” where an Applicant fails to provide requested additional information that, in the opinion of the Department of Public Works, is needed to adequately describe the proposed project.

6.6 Lapse of Permit

A Stormwater Management and Erosion Control Permit granted in accordance with the provisions of these Rules and Regulations shall lapse one (1) year from the date of issuance, if land disturbance activities have not begun by such date except for good cause, as determined by the Department of Public Works.

6.7 Project Changes

The Permittee, or its agent, shall notify the Department of Public Works in writing of any change or alteration in an approved Stormwater Management Plan before any change or alteration occurs. If the Department of Public Works determines that the change or alteration is significant, based on the standards referred to in Section 8.0 and accepted construction practices, the Department of Public Works may require that an amended Stormwater Management and Erosion Control Permit Application be filed. If any change or deviation from the Stormwater Management and Erosion Control Permit occurs during a project, the Department of Public Works may require the installation of interim measures before approving the change.

6.8 Project Completion

- 6.8.1 Upon completion, the Permittee is responsible for certifying that the completed project is in accordance with the approved plans and specifications by submitting As-built Plans to the Department of Public Works as described in Section 11.0.
- 6.8.2 Upon written request by the Permittee, the Department of Public Works shall assess whether the work has been completed in substantial conformance with the approved Stormwater Management Plan and any conditions of the Stormwater Management and Erosion Control Permit. Upon satisfactory completion of the work and submittal of the As-built Plans, the Department of Public Works shall issue a letter indicating that all required certifications have been submitted and all required inspections have been completed.

6.9 Maintenance Responsibility

The Responsible Party shall ensure that all components of the proposed Stormwater Management Plan are functioning according to manufacturer or design specifications. All components shall be maintained in good condition and promptly repaired, in accordance with the approved Operation and Maintenance Plan. This shall constitute a perpetual condition of any Stormwater Management and Erosion Control Permit issued under these Rules and Regulations.

7.0 Stormwater Management Plan

The Stormwater Management Plan shall contain sufficient information for the Department of Public Works to evaluate the environmental impact, effectiveness, and acceptability of the measures proposed by the Applicant for preventing adverse impacts from stormwater.

All Stormwater Management Plans submitted for consideration shall contain the following minimum components, except as stipulated in Section 12.0 for Simplified Permits:

1. Existing Conditions Plan;
2. Proposed Conditions Plan;
3. Erosion and Sediment Control Plan;
4. Construction Detail Plan;

5. Stormwater Management Report; and
6. Operation and Maintenance Plan.

More information than the minimum required herein may be required at the request of the Department of Public Works, provided such information is reasonably necessary for the proper evaluation of the Stormwater Management Plan. Additional plans, such as but not limited to utility plan, landscaping plan, etc., may be required for more complex projects.

Plans shall be prepared to fully detail and explain the intentions of the Applicant. Plans shall be prepared at a standard scale (1" = 20', 1" = 40', or 1" = 80', whichever is appropriate to the size of the proposal). All plans shall include a reasonable numbering system with an appropriate title block, North arrow, signature block, and legend identifying any representative symbols used on the sheet in question.

Design Certification: Each plan sheet shall show the seal and signature of an Engineer or a Surveyor, or both, as appropriate to the data.

7.1 Existing Conditions Plan

The Existing Conditions Plan shall contain all the necessary information to convey existing surface features and drainage patterns. It shall contain a topographical survey plan prepared by a Surveyor, including the following information:

- Name, seal, and signature of the Surveyor who performed the survey.
- Date(s) of the survey.
- Reference to all deeds, plans of record, and other information used to establish the existing property lines, the layout of all streets and ways, and public and private easements, including deed references to the abutting lots.
- Locus Plan, prepared at a scale not smaller than 1" = 1200' and a minimum extent of one mile diameter. Major streets, buildings, brooks, streams, rivers, or other landmarks should be shown on the Locus Plan with sufficient clarity to be easily discernible.
- Existing property lines, public and private easements, and road layouts with bearings and distances. All distances shall be in feet and decimals of a foot and all bearings shall be given to the nearest ten seconds. The error of closure shall not exceed one to ten thousand.
- Boundary of the entire property held in common ownership by the Applicant regardless of whether all or part is being developed at this time.
- Acreage of the property(s) to the nearest tenth of an acre.
- Existing monuments.
- Location and name of all abutters as they appear on the most recent tax list, including owners of the property on the opposite side of all streets abutting the property.
- Location, names, status (i.e., public or private), and present widths of streets and sidewalks bounding, approaching, or within reasonable proximity of the property, showing both roadway widths and right-of-way width.

- Location of all test pits, borings, percolation tests, or similar, in or adjacent to the development. Logs of observed groundwater elevations and other test data shall be included in the Stormwater Management Report.
- Location of all existing buildings and structures on the property and within reasonable proximity of the perimeter of the property.
- Location of all existing wells and septic systems that can be observed and/or are on file with the Health Department, on the property and within reasonable proximity of the perimeter of the property.
- Features within and abutting the property, including but not limited to, waterways, water bodies, drainage ditches, streams, brooks, stone walls, fences, curbing, walkways and other paths (paved or unpaved), utility and light poles, buildings and other structures, ledge outcrops, wooded areas, public shade trees and all other trees greater than six inches in caliper, and historic sites.
- Location and identification of resource areas regulated under the Massachusetts Wetlands Protection Act or the Watertown Wetlands Ordinance, as amended, including areas located within the property and areas outside of the property with buffer zones or offsets that may intersect the property. This shall include wetlands and associated offsets and buffer zones, isolated lands subject to flooding (ILSF), bordering land subject to flooding (BLSF), and riverfront protection areas. If a currently valid delineation for the property does not exist, wetland boundaries shall be delineated in the field with numbered flags by a qualified wetlands specialist, surveyed, and shown on the plan(s) with reference to the flag numbers. The date of any Resource Area Delineation, Determination of Applicability, Order of Conditions, or other applicable decision from the Watertown Conservation Commission shall be indicated on the plans.
- Location of all existing above- and below-ground utilities and all associated appurtenances within and abutting the property. All utility pipe types, sizes, lengths, and slopes shall be provided, as well as utility structure information, including rim and invert elevations.
- Existing topography within the property and within reasonable proximity of the perimeter of the property. Topography shall be provided at a minimum one-foot contour intervals. The plan survey datum shall be the National American Vertical Datum 1988 (NAVD88), and this reference shall be identified on the plans.
- Stormwater flow direction.

7.2 Proposed Conditions Plan

The Proposed Conditions Plan shall indicate all proposed land disturbance activities and improvements, including but not limited to structures, buildings, sidewalks, handicap ramps, parking areas, curb type and limits, walls, fences, landscaped areas, and the proposed location of all utilities, as described below:

- All applicable information from the Existing Conditions Plan. The proposed improvements shall be overlaid on the existing conditions and shown in a darker line weight.

- All proposed work, including but not limited to the outline or footprint of all proposed buildings, structures, parking areas, walkways, loading facilities, or significant landscaping features shall be shown.
- All means of vehicular access for ingress and egress to and from public streets. Plans should show the size and location of driveways and curb cuts.
- The location of all public shade trees and all other trees over six inches in caliper to be removed.
- The location and type of all above-ground and below-ground utilities.
- The existing and proposed above- and below-ground stormwater management system, with pipe sizes, lengths, slopes, and materials including conveyances, catch basins, manholes, culverts, headwalls, detention and/or retention basins, treatment units, infiltration systems, and outlet pipes/structures. Rim and invert elevations shall be provided for all structures and other appurtenant features.
- Proposed contours indicating the finished grades of all proposed construction. The plan shall show how the proposed grades will tie in to the existing grades within and outside of the limits of disturbance. The grades should be provided at a minimum one-foot contour intervals. Walls, curbing and any other features creating a break in grade shall be shown, including proposed top and bottom grades.
- Stormwater flow direction.

7.3 Erosion and Sediment Control Plan

The Erosion and Sediment Control Plan shall contain sufficient information to demonstrate that erosion will be minimized and sediment contained as part of a land disturbance activity, including the following:

- All applicable information from both the Existing and Proposed Conditions Plans. The proposed development information shall be shown in a darker line weight.
- Location of the proposed limit of land disturbance activity, to be lined by perimeter sediment controls in downgradient areas and along all resource areas.
- Location of anti-tracking area at each construction entrance.
- Inlet and outlet erosion and sediment controls at all existing and proposed drainage structures.
- Tree protection for all public shade trees and all other trees over six inches in caliper proposed to remain.
- Seeding, sodding, or revegetation plans and specifications for all unprotected or unvegetated areas.
- Location and design of all structural erosion and sediment control measures, such as grade stabilization practices, temporary drainage swales, dewatering devices, and temporary sedimentation basins.
- Location of all proposed construction stockpiling and staging areas with appropriate erosion and sediment control measures.
- Location of areas designated for revegetation or infiltration-based BMPs, with notes indicating that soil compaction shall be avoided in those areas.

- Notes detailing the proposed operation, maintenance, and inspection schedule for all erosion and sedimentation control measures, including proposed schedule for street sweeping of adjacent roadways and paved areas.
- Notes indicating that demolition debris, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes may not be discharged to the MS4 and must be legally disposed of.
- Where a project is proposed to be constructed in phases, requires demolition, includes significant cuts and fills, or requires excavation of contaminated soils, the Department of Public Works may require that the Erosion and Sediment Control Plan be separated into phases targeted to each activity.
- Where the limits of disturbance are located in whole or in part within the floodplain, a Floodplain Contingency Plan shall be included with the Erosion and Sediment Control Plan. The Floodplain Contingency Plan shall describe the steps necessary to stabilize the work area in the event of a possible flood. A possible flood shall be defined as the period of time that a flood watch is declared for the Charles River by the National Weather Service.
- Where a project is also subject to coverage under a National Pollutant Discharge Elimination System (NPDES) Construction General Permit issued by the EPA, submission of the Stormwater Pollution Prevention Plan (SWPPP) shall be required prior to commencement of land disturbance activities.

7.4 Construction Details Plan

The Construction Details Plan should provide information regarding the component parts of the construction, illustrating how they fit together. The plan shall show the following:

- Typical construction details of all proposed stormwater management system devices, including but not limited to conveyances, catch basins, manholes, headwalls, sub-drains, detention and retention systems, and other stormwater management system structures.
- Landscaping details including, but not limited to, tree plantings, shrubs, perennials, fences, walls, guard rails, street furniture, and other specialty items, if applicable.
- Construction details for all hard surfaces, including but not limited to, roadways, sidewalks, driveways, loading docks, handicap ramps, permeable pavers, and curbing.
- Erosion and sediment control details that implement the Erosion and Sediment Control Plan.
- Where constraints or differing conditions require work that deviates from “typical details,” specific construction details shall be provided.
- All proposed work within the public right-of-way shall conform to Town of Watertown and/or MassDOT Standard Details, where applicable.

7.5 Stormwater Management Report

A separate Stormwater Management Report shall be submitted with the Stormwater Management and Erosion Control Permit Application. It shall be prepared and stamped by an Engineer, and shall contain the following information:

- Narrative describing the existing and proposed soil conditions (including Hydrologic Soils Group [HSG] classification published by the National Resources Conservation Service [NRCS]), land use, surface cover, estimated high groundwater elevations, design points, drainage patterns, and proposed stormwater management practices.
- Narrative describing the existing and proposed stormwater management system, including all proposed LID techniques and BMPs incorporated in the project design.
- Description of all soil testing conducted in the study area, including sieve analyses, tests for saturated hydraulic conductivity, test pits, or soil borings. Soils information shall be based on field investigations by a Soil Evaluator approved by the Commonwealth of Massachusetts, or by an Engineer. Testing shall be performed in accordance with Volume 3 of the Massachusetts Stormwater Handbook (dated February 2008, as amended) and these Rules and Regulations. Raw test data shall be provided in an appendix to the report.
- Narrative describing the methodology used to conduct the hydrologic and hydraulic analyses, estimates of the existing and proposed stormwater runoff peak rates and volumes, and the design of the proposed stormwater management system.
- Tables comparing existing and proposed impervious areas, peak stormwater runoff rates, and total stormwater runoff volumes for each design point and for the 2-, 10-, 25-, and 100-year design storms.
- Narrative and calculations demonstrating compliance with the Massachusetts Stormwater Management Standards, including:
 - Estimates of annual required recharge volume and recharge volume provided.
 - Narrative describing the Erosion and Sediment Control Plan, including a detailed construction sequence plan, source control and pollution prevention measures, description of BMPs provided to address soil erosion and sedimentation, stabilization measures, inspection and maintenance requirements, and record keeping.
 - Narrative describing the Operations and Maintenance Plan, as described in Section 7.6.
- Narrative and calculations demonstrating compliance with the requirements of Section 8.1, including estimated existing and proposed annual average load of total phosphorus (TP) and the proposed annual average loading reductions of total suspended solids (TSS) and TP. Calculations shall be completed using the Environmental Protection Agency (EPA) Region 1's BMP Accounting and Tracking Tool (2016), the Massachusetts NPDES MS4 Permit Appendix F Attachment 3 methodology, or other BMP performance evaluation tools provided by the Department of Public Works.
- Description of any impacts to the floodplain and floodway and a summary of compensatory flood storage calculations, if appropriate.
- Description of existing and proposed groundwater recharge, including quantitative summary of existing and proposed recharge volumes, and summary of groundwater mounding analysis, if applicable.
- Plans showing existing and proposed development drainage areas, including any off-site contributions, and time of concentration travel flow-paths. Study design points should be indicated on the plan.
- If applicable, a map showing the location of the site overlaid on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) for the Town of

Watertown, or other appropriate information pertaining to location of the floodplain and floodway boundaries in relation to the site.

- Appendix containing all drainage calculations for existing and proposed conditions, including hydrologic analyses, hydraulic analysis of the proposed drainage system, and calculations supporting the design of all BMPs that will control stormwater runoff peak rates and total volumes.

7.6 Operation and Maintenance Plan

An Operation and Maintenance (O&M) Plan, in accordance with the Massachusetts Stormwater Management Standards, shall be included with the Stormwater Management Plan. The purpose of the plan is to identify the actions necessary to ensure that stormwater management systems and BMPs function as designed, in perpetuity.

7.6.1 Minimum Requirements

At a minimum, the O&M Plan shall contain:

- A plan that is prepared to scale and shows the location of all stormwater management system components and all discharge points.
- A description of all BMPs, including proper operating parameters and how the Owner will determine if a BMP is not functioning properly.
- A description of long-term source control and pollution prevention measures.
- An inspection log and a description of all inspection and maintenance procedures, responsibilities, and frequencies.
- Minimum qualifications for personnel that will perform inspections and maintenance.
- Snow storage procedures and locations in accordance with the MassDEP Snow Disposal Guidance, dated December 11, 2020, as amended. Snow shall not be stored or disposed of in any proposed stormwater BMP.
- The name(s) of the Owner of all components of the system, and the name(s) and address(es) of the Responsible Party for O&M of each component, if different from the Owner.
- A list of easements held to access any BMPs.
- A copy of the As-built Plan prepared in accordance with Section 11.0, upon project completion.
- An estimated O&M budget.

7.6.2 Record Keeping

Parties responsible for the O&M of the stormwater management system and BMPs shall keep records of all inspections, maintenance, and repairs and shall retain the records for at least five (5) years. These records shall be made available to the Department of Public Works during inspection of the stormwater management structure or system and at other reasonable times upon request.

The Town reserves the right to request written records, including receipts of inspection or cleaning services, documenting the maintenance of the system, and/or to physically inspect the systems to ensure that the proper maintenance has been carried out. The failure of the Responsible Party or Owner to maintain the stormwater management system in reasonable order and condition, in conformance with the approved Operation and Maintenance Plan, shall be considered a violation of these Rules and Regulations and subject to enforcement action in accordance with Section 6.0 of the Ordinance.

7.6.3 Changes to Ownership and/or Operation and Maintenance Plans

The Owner(s) of the stormwater management system must notify the Department of Public Works of changes in ownership or assignment of financial responsibility for O&M of the stormwater infrastructure and management system or any changes to the Operation and Maintenance Plan. The Owner(s) shall also be responsible to inform prospective new owners of the requirements of the existing Operation and Maintenance Plan. This shall be an on-going requirement of any Stormwater Management and Erosion Control Permit issued.

8.0 Performance Standards

At a minimum, all projects shall comply with the performance standards of the Massachusetts Stormwater Management Standards, except as hereafter amended in these Rules and Regulations. New development shall meet the performance standards in Section 8.1 and Section 8.2. Redevelopment shall meet the performance standards in Section 8.1 and Section 8.3. Projects eligible for Simplified Permits, as provided in Section 12.0, are not required to meet Section 8.0 Performance Standards except as specified within the applicable Simplified Permit category.

8.1 Water Quality Standard

- 8.1.1 All projects shall implement Low Impact Development (LID) planning and design strategies, unless such practices are infeasible. LID practices shall include, but not be limited to, soil decompaction and amendments, grading to direct runoff toward pervious surfaces, and minimizing impervious surfaces. Additional guidance on LID practices is provided in the Massachusetts Stormwater Handbook.
- 8.1.2 All projects shall provide for removal of 90% of the proposed average annual load of TSS AND 60% of the proposed average annual load of TP generated from the total proposed impervious surface area.
- 8.1.3 In no instance shall there be an increase in the estimated annual average load of TP from existing to proposed conditions.
- 8.1.4 To support compliance with the Charles River Watershed phosphorus TMDL and the Town's MS4 permit, all BMPs shall be optimized for the removal of phosphorus. Guidance on BMP phosphorus-removal performance may be found in the MS4 Permit Appendix F Attachment 3.

8.2 Retention Standard for New Development Projects

For all new development projects, stormwater management systems shall be designed to provide retention of stormwater runoff for all storm events up to and including the 100-year, 24-hour storm. Retention may be achieved by infiltrating stormwater runoff into underlying soils or by storing rainwater for use (also known as rainwater harvesting).

8.3 Retention Standard for Redevelopment Projects

For all redevelopment projects, stormwater management systems shall be designed to provide, to the Maximum Extent Practicable, retention of stormwater runoff for all storm events up to and including the 100-year, 24-hour storm. Retention may be achieved by infiltrating stormwater runoff into underlying soils or by storing rainwater for use (also known as rainwater harvesting). For redevelopment projects with conditions that preclude infiltration (as specified in Section 8.3.1), the storage volume for filtration practices (e.g., biofiltration) may count toward meeting the Retention Standard. If the Retention Standard cannot be fully met, Applicants shall meet the Maximum Extent Practicable standards specified in Section 8.3.1 and provide off-site compliance as specified in Section 8.3.2.

8.3.1 Maximum Extent Practicable

1. Factors Affecting Retention Potential

The Town recognizes that constraints may make it difficult to retain all stormwater runoff on site. These constraints include, but may not be limited to:

- Lack of space: The ability to provide infiltration BMPs or rainwater harvesting may be limited on small parcels or in densely developed areas. Sites may be located in areas of high land costs, where full compliance would result in a significant loss of development value. In some zoning districts, the Town's desire to encourage density development may conflict with the goal of retaining all stormwater. In densely developed areas, infiltration BMPs may also have a negative impact on groundwater elevations on adjacent properties.
- Uses for stored rainwater: Runoff collected from roofs is appropriate for non-potable uses, such as landscape irrigation. A lack of landscaped open space may limit the use of rainwater for landscape irrigation.
- Soils: The presence of bedrock, clay, or other soils with low infiltration capacity can limit the effectiveness of infiltration BMPs.
- Groundwater: Depth to high groundwater may also limit the effectiveness of infiltration BMPs.
- Prior contamination: Many redevelopment sites have a history of documented environmental contamination that limits the type of infiltration BMPs that may be employed. Infiltration BMPs may be limited at sites that have been classified as contaminated and have been determined to be unsuitable for infiltration by a Licensed Site Professional (LSP); where contamination has been capped in place; where an Activity and Use Limitation (AUL) precludes introducing runoff to the groundwater

pursuant to Massachusetts General Law, Chapter 21E and the Massachusetts Contingency Plan, 310 CMR 40; that contain a solid waste landfill as defined in 310 CMR 19; or where groundwater from the recharge area flows directly toward a solid waste landfill or 21E site.

- Underground utilities: The presence of underground utilities can greatly reduce the amount of land available for stormwater management controls.

2. Criteria for Determining Maximum Extent Practicable

The Department of Public Works shall determine that the Retention Standard has been met to the Maximum Extent Practicable when the following criteria have been met:

- Applicants have demonstrated that they have made a complete evaluation of possible stormwater management measures that could be used and that they have made all reasonable efforts to fully meet the Retention Standard.
- Factors affecting retention potential, as described in Section 8.3.1.1. of these Rules and Regulations, have been identified and preclude the ability to fully meet the Retention Standard.
- Appropriate measures to reduce stormwater runoff have been provided through better design practices, such as removing extraneous parking, reconfiguring required parking, minimizing the use of impervious materials, and providing enhanced vegetation.
- Appropriate measures have been taken to disconnect roof runoff from direct discharge to the drainage system.
- Appropriate measures have been taken to disconnect other existing paved areas from direct discharge to the drainage system, allowing controlled flow over pervious areas or through BMPs providing at least partial recharge.
- Appropriate measures have been taken to apply LID techniques for runoff reduction. Measures such as, but not limited to, porous pavement, green roofs, rain gardens, bioretention areas, and rainwater harvesting and reuse have been considered.
- There shall be a documented reduction in the rate and volume of runoff. In no instance shall there be an increase in the rate or volume of runoff.
- All Massachusetts Stormwater Management Standards have been met.

3. Documentation of Maximum Extent Practicable

It shall be the responsibility of the Applicant to demonstrate that stormwater management control measures have been provided to meet the Retention Standard to the Maximum Extent Practicable according to the above criteria. Additional information shall be provided in the form of both a narrative and supporting documentation, to be included in the Stormwater Management Report:

- A description of the specific conditions that affect the ability to retain stormwater runoff;
- An alternatives analysis of all LID techniques and BMPs considered to reduce and manage stormwater runoff;

- Hydrologic and hydraulic estimates of stormwater runoff peak rates and total volumes for the 2-, 10-, 25-, and 100-year design storms, demonstrating compliance with the peak rate and volume criteria in Section 8.3.1.2. A narrative explaining the degree to which stormwater runoff will be retained shall accompany the estimates.

8.3.2 Off-site Compliance

If the Retention Standard cannot be fully met and the Applicant has demonstrated compliance with the Maximum Extent Practicable standards in Section 8.3.1, the Department may permit off-site compliance to address the remainder of the Retention Standard. For off-site compliance, the Applicant must provide either stormwater retention equivalent to the difference between the Retention Standard and the volume of runoff proposed to be retained or filtered on site, or an equivalent public benefit as determined by the Department of Public Works.

The Department may, at its discretion, allow an Applicant to meet the Retention Standard using one or more of the following options:

1. Implementation of BMPs on private property. The Applicant shall obtain a separate *Stormwater Management and Erosion Control Permit* for all BMPs in accordance with these Rules and Regulations, unless otherwise directed by the Department of Public Works. If the proposed BMP is located on property that is not owned by the Applicant, the Applicant must submit an agreement signed by the property owner indicating approval of BMP implementation on the property.
2. Implementation of BMPs on Town property. The Department may allow the Applicant to implement BMPs at a location on Town property. The Department has discretion to approve or disapprove BMP locations and practices based on maintenance needs, pollutant removal, aesthetics, and other Town objectives.
3. Payment of an in-lieu fee. The Department shall determine an appropriate fee based on the typical cost to implement BMPs to fully meet the Retention Standard. The Department may allocate funds collected through these fees at its discretion to fund the Town's stormwater management program.

9.0 Stormwater Management and Erosion Control – Technical Requirements

Stormwater management systems shall be designed in accordance with the Massachusetts Stormwater Management Standards (except as stricter regulations outlined herein apply), regardless of the size of the development and whether or not it falls within the jurisdiction of the Massachusetts Wetlands Protection Act.

- 9.1 Precipitation Data: Unless specified, all design storms shall have a 24-hour duration and Type III distribution. All drainage analyses shall use the precipitation depths listed below, or precipitation depths as required by the Massachusetts Stormwater Handbook if more stringent. The following precipitation depths are adapted from the web tool "Extreme

Precipitation in New York and New England” developed jointly by the Northeast Regional Climate Center (NRCC) at Cornell University and the Natural Resources Conservation Service (NRCS), as available at <http://precip.eas.cornell.edu/> for the Town of Watertown centered at Department of Public Works, 124 Orchard Street, as accessed on July 15, 2014:

Design Storm	24-Hour Precipitation (Inches)
2-year	3.2
10-year	4.9
25-year	6.2
100-year	8.9

9.2 Hydrologic Analysis Methodology: Existing and proposed stormwater runoff peak rates and total volumes shall be estimated using the methods described in Technical Release No. 20 (TR-20) and Technical Release No. 55 (TR-55), where applicable, published by the National Resources Conservation Service (NRCS), United States Department of Agriculture (USDA).

9.2.1 Common design point(s) shall be used for comparison between existing and proposed conditions.

9.2.2 The total length of “sheet flow” in the calculation of Time of Concentration for a subcatchment shall be limited to 100 feet or less for existing conditions, and 50 feet or less for proposed conditions. The minimum permissible Time of Concentration is 5.0 minutes.

9.2.3 The surface of all ponds, rivers, detention/retention ponds, and other waterbodies shall be assumed to be impervious for the purpose of calculating ground cover.

9.2.4 For purposes of computing runoff, all existing pervious lands shall be assumed to be in good condition regardless of conditions existing at the time of computation.

9.2.5 Stormwater analyses shall be performed using an NRCS (formerly Soil Conservation Service – SCS) Type III 24-hour rainfall distribution. The use of computer modeling techniques, such as HydroCAD, is strongly preferred.

9.2.6 For computer models that have the ability to adjust the time period of the storm analysis, the storm shall be analyzed from time 0.0 (the start of the storm) to at least 30 hours after the start of the storm event. The time increment between analysis points shall be a maximum 0.02 hours.

9.2.7 The size of the overall drainage area analyzed in the existing and proposed development analyses shall be the same.

9.3 Closed Drainage System: LID practices are encouraged when feasible. Where closed drainage networks are proposed, calculations shall be provided in accordance with the following requirements:

9.3.1 Design Storms: The proposed drainage system shall be designed to accommodate a 25-year design storm. Bridges and culverts shall be designed for a 50-year design storm, with consideration being given to avoiding damage during a 100-year design storm. Stormwater BMPs for peak rate and volume control shall be designed for 2-, 10-, 25-, and 100-year design storms, in accordance with the

Performance Standards of Section 8.0. The effects of bypass (i.e., stormwater flow which bypasses a catch basin when the inflow capacity of the catch basin is exceeded) and tailwater shall be accounted for in the design of these BMPs.

- 9.3.2 Design Methodology: The Rational Method shall be used to determine peak flows of runoff for the design of the closed drainage system. The Rational Method cannot be used to determine runoff volumes. The Manning Formula shall be used for the sizing of drain pipe and other drainage conveyance swales. A worksheet similar to that provided in Exhibit 8-49 of the Massachusetts Highway Department (MHD) Project Development and Design Guide (2006 edition) shall be provided for the design of each closed drainage network. The effect of tailwater conditions at the end of the drainage system shall be taken into account. Documentation shall be provided to show how tailwater elevations were obtained for the respective design storms.
- 9.3.3 Catch Basins: In general, catch basins shall be required on both sides of roadways at intervals of not more than 300 feet, at all low points in grade, near the corners of roadways at intersecting streets, and at all other locations as required by the Department of Public Works. Catch basins are not allowed in front of driveway openings. Catch basin-to-catch basin connections are not allowed (including landscape area drain-to-catch basin connections). Each catch basin shall be connected to a manhole. All catch basins shall have a minimum four-foot sump and a floatable control hood on the outlet pipe. All grate openings shall be of a design and placement that will not trap or divert bicycle wheels. Catch basins shall be designed such that the grate capacity of each is not exceeded; double catch basin grates and curb inlets may be used as needed. No catch basin which collects runoff from roadways shall be designed to infiltrate stormwater runoff without providing pre-treatment in accordance with the Massachusetts Stormwater Management Standards.
- 9.3.4 Drain Pipe: All drain pipes shall be laid in a straight line and grade. A manhole shall be provided at every change in pipe size, material, direction, and/or grade. In no case shall drain manholes be spaced at a distance greater than 300 feet. Pipes shall be designed to operate without building up hydraulic pressure head under design flow conditions. The minimum allowable full flow pipe velocity shall be 3 feet per second (fps) when flowing at a depth of approximately one-third of the pipe diameter. The maximum allowable full flow pipe velocity shall be 10 fps.
- 9.3.5 Drain Pipe Materials: Drain pipes shall be either reinforced concrete pipe (RCP), Standard Dimension Ratio (SDR) 35 polyvinyl chloride (PVC), or high-density polyethylene pipe (HDPE). Ductile iron pipe shall be used in areas with less than two feet of cover.
- 9.3.6 Outfall Protection: Pipe inlets or outfalls with a diameter of 15 inches or greater shall be fitted with a protective barrier, suitable in the opinion of the Department of Public Works, to prevent access by children. Said barrier shall be removable for maintenance purposes. Masonry headwalls and flared end-sections shall be installed, as approved by the Department of Public Works, to prevent erosion. Ground surfaces at all drainage outfalls shall be stabilized with rip-rap or other means to prevent erosion from stormwater flows up to the design capacity of the discharging conveyance. Design calculations for rip-rap splash pads or other

proposed outfall protection may be required at the discretion of the Department of Public Works.

9.4 Stormwater Infiltration System Design and Calculations: All stormwater infiltration systems shall be designed in accordance with the design standards listed in Volumes 2 and 3 of the Massachusetts Stormwater Management Standards, except as modified herein:

- 9.4.1 Documentation of Soil Conditions and Estimated Seasonal High Groundwater:
For all projects proposing infiltration BMPs, the Applicant shall provide documentation of the soil conditions and seasonal high groundwater conditions at the proposed location of the infiltration facility or facilities. At a minimum, existing Estimated Seasonal High Groundwater (ESHGW) elevation shall be documented at each location where an infiltration-type stormwater management practice is proposed. The soils shall be classified according to the NRCS Hydrologic Soil Groups (HSG), and a soil textural analysis consistent with USDA methodologies shall be conducted where the HSG classification is inconclusive. Seasonal high groundwater shall be estimated based on redoximorphic features in the soil or, ideally, based on monitoring well observations taken in April or May, when groundwater is typically at its highest levels.
- 9.4.2 In the event that the actual soil conditions vary from those assumed during engineering design of the infiltration system, the Applicant shall redesign the system to account for the observed soil conditions. The redesign shall be reviewed and approved by the Department prior to installation.
- 9.4.3 Storage Volume Sizing:
1. The static, simple dynamic, or dynamic field methods shall be used to estimate sizing. The use of the Rational Method to size infiltration systems is strictly prohibited.
 2. If a sump pump will discharge into the infiltration system, the infiltration system shall be sized to infiltrate sump pump discharge.
- 9.4.4 Infiltration Rates: When the static or simple dynamic methods are used, the infiltration rate for each system shall be estimated based on the rates specified by Rawls et al. 1982. For the “dynamic field” method, saturated hydraulic conductivity rates shall be determined at the actual location and soil layer (i.e., elevation) where infiltration is proposed. A Title 5 percolation test does not provide an acceptable estimate of the infiltration rate using any of the three design methods. The Applicant also shall identify the depth to bedrock or other restrictive layer in the vicinity of proposed infiltration systems. Compaction of soils in designated infiltration areas shall be minimized during and after construction.
- 9.4.5 Groundwater Separation:
1. The bottom of stormwater infiltration systems shall be a minimum of 2 feet above the estimated seasonal high groundwater elevation.

2. Where a project proposes to attenuate the peak discharge from a 10-year, 24-hour design storm or higher, the bottom of the infiltration system shall be a minimum of 4 feet above the estimated seasonal high groundwater elevation.
3. A groundwater mounding analysis may be required, at the discretion of the Department of Public Works, to ensure that the infiltration system will not cause groundwater to break out above land surface, seep into basements of nearby buildings, or cause other problems. All infiltration systems shall be designed to drain within 72 hours.
4. At the discretion of the Department of Public Works, these requirements may be waived.

- 9.5 Detention Basins and Wet Basins: Detention basins and wet basins shall be designed to have a minimum of 1 foot of freeboard during the 100-year design storm. The volume of sediment forebays (if applicable) shall not be counted towards the storage volume of the detention/wet basin. For design purposes, it shall be assumed that there will be no infiltration of stormwater within the drainage basin unless the basin is designed as an infiltration basin in accordance with the Massachusetts Stormwater Management Standards. Detention/wet basins and associated forebays shall be required to drain within 72 hours. Basins shall be designed with an emergency overflow device, such as a weir, to safely pass the 100-year design storm to prevent overtopping and potential erosion of the berm, assuming the primary outlet is not functioning. The bottom of any sediment forebay shall be constructed of concrete or grass that may be mowed, for ease of maintenance; a rip-rap base shall not be allowed. Depending on the depth and size of the basin, the Department of Public Works may require fencing or other effective measures to be installed to prevent unauthorized persons and vehicles from entering the basin. The Department of Public Works also may require landscaping in the area surrounding the basin as a method of screening.
- 9.6 Maintenance Access: Adequate access shall be provided to all BMPs. Where such facilities are not located on property under ownership of the Permittee, an easement shall be obtained to provide adequate access to the BMP. A maintenance access driveway of 10 feet minimum width and 12 percent maximum slope shall be provided to any outlet control structure. Subsurface BMPs must be provided with easily accessible clean-outs and inspection ports. All BMPs located on commercial or industrial land shall incorporate designs that allow for shutdown and containment to isolate the drainage system in the event of an emergency spill or other unexpected event.
- 9.7 Routing of Overflows: The proposed topography shall be designed to ensure that all stormwater runoff up to the maximum design storm for the particular structure or BMP will actually enter the control structure. For example, the control structure may be designed for the 100-year design storm, while the closed drainage system connecting to that structure may be designed to convey only the 25-year design storm, with larger events flooding the system and traveling overland. This overland flow, or overflow, must be directed into the peak control structure; any bypass flow shall be accounted for in the hydraulic estimates for the project.

- 9.8 Connection to the MS4: Direct connections to the MS4 should be avoided. If such a connection is proposed, the Applicant must provide an analysis to demonstrate that the closed drainage system can accept the proposed stormwater runoff (both peak rate and volume). If the capacity of the MS4 is not adequate to accommodate the entire proposed amount, then only that portion thereof which can be adequately accommodated shall be connected and/or the Applicant shall be required to improve the downstream system to provide adequate capacity. Connections to the MS4 shall occur at a manhole. If no manhole exists at the point of connection, one shall be installed.
- 9.9 Drainage Easements: It shall be the responsibility of the Applicant to make any necessary agreements/easements with any abutter(s) where any aspect of the proposed stormwater management system is to be conveyed beyond the boundaries of the property. Such agreements/easements shall be presented to the Department of Public Works, in recordable form, prior to issuance of the Stormwater Management and Erosion Control Permit. The Applicant is responsible for recording the easements.
- 9.10 Water Quality: The use of retention or biofiltration shall be the preferred method of water quality treatment for the purpose of meeting Standard 4 of the Massachusetts Stormwater Management Policy. If proprietary manufactured stormwater treatment separators are proposed, the Standard Method shall be used to estimate the required water quality volume, in accordance with the policy published by Massachusetts Department of Environmental Protection (MassDEP), dated September 10, 2013, as amended. For subsurface infiltration chambers, isolator rows shall not be acceptable as pre-treatment.
- 9.11 Erosion and Sediment Control: The *Erosion and Sediment Control Guidelines for Urban and Suburban Areas*, published by the MassDEP, originally dated March 1997, as amended, shall be used as the technical reference guide for the implementation of plans to control construction-related impacts, including erosion, sedimentation, and other pollutant sources during construction and land disturbance activities. The following erosion and sediment control performance standards shall be met.
- 9.11.1 Natural Resource Protection: Before commencing land disturbance activities, the limits of permitted disturbance areas shall be marked with high-visibility flagging, fencing, and/or signage. Areas designated for revegetation and/or infiltration-based stormwater practices shall be marked with flagging, fencing, and/or signage to restrict use of heavy vehicles and equipment in these areas to avoid soil compaction. Tree protection shall be installed around the dripline for all trees to be preserved. Buffers and other restricted areas shall be maintained as required in a wetlands protection authorization from the Watertown Conservation Commission or Massachusetts Department of Environmental Protection.
- 9.11.2 Area of Disturbance: Clearing and grading shall only be performed within areas needed to build the project, including structures, utilities, roads, recreational amenities, post-construction stormwater management facilities, and related infrastructure. Construction activities shall be phased to minimize the area of disturbed soil at any one time.

- 9.11.3 Soil Stabilization: The time that soil is exposed shall be minimized by stabilizing dormant areas as work progresses. Exposed areas shall be vegetated, hydromulched, protected with erosion control blankets, or otherwise stabilized within 14 days after land disturbance activities have permanently ceased or will be temporarily inactive for 14 or more days. Vegetative cover shall be prepared in the fall to ensure that exposed areas have cover before the first freeze.
- 9.11.4 Stockpiles: Materials shall not be stored or stockpiled near a storm drain or a wetland resource area. Stockpiled materials that will be unused for 14 or more days shall be covered with roof, tarp, or temporary seeding (of soil stockpiles). Perimeter controls shall be installed around stockpile and staging areas.
- 9.11.5 Perimeter Controls: Perimeter sediment controls, such as silt fencing and filter tubes, shall be installed around downgradient boundaries, along all resource areas, and around stockpile and staging areas. Compost socks and straw bale shall be free of invasive species. Perimeter controls shall not be removed until the drainage areas have been permanently stabilized.
- 9.11.6 Stabilized Construction Entrance: Track-out controls (e.g., gravel apron) shall be installed at each construction entrance to remove sediment from vehicles and prevent tracking onto public roads. Where sediment has been tracked-out from the site, paved roads, sidewalks, or other paved areas shall be swept or vacuumed at the end of the workday. Sediment shall not be swept or hosed into any stormwater conveyance, storm drain inlet, or waterbody.
- 9.11.7 Inlet Protection: Filter bags, filter tubes, or other inlet protection controls shall be installed to prevent sediment from entering downgradient storm drains. Inlet controls shall not be removed until the drainage areas have been permanently stabilized.
- 9.11.8 Runoff Diversion: Runoff shall be intercepted and diverted away from disturbed areas with berms, swales, or pipes toward stabilized outlets. Conveyances shall be stabilized with vegetation, erosion control blankets, check dams, or similar practices to slow velocities and prevent erosion.
- 9.11.9 Sediment Removal: Sediment traps and basins shall be used to remove suspended solids from runoff before it discharges from the site. Traps and basins shall be designed to use baffles, multiple cells, and other practices to maximize the flow path and settling time. Sediment controls shall not be removed until the drainage areas have been permanently stabilized.
- 9.11.10 Dewatering: Dewatering activities shall use tanks, filter bags, or other practices to remove sediment before discharge. Water shall not be discharged in a manner that causes erosion or flooding.

- 9.11.11 Outlet Protection: Pipe outlets shall have stone aprons, level spreaders, or other energy dissipation practices installed to prevent erosion.
- 9.11.12 Construction Waste Management: Trash, debris, and sanitary wastes shall be removed on a regular basis. Dumpsters shall be covered at the end of every workday and before rain events. Concrete mixers shall be washed out only in designated areas with liners. Demolition debris, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes may not be discharged to the MS4 and shall be legally disposed of.
- 9.11.13 Post-Construction BMPs: Stormwater management facilities to be used after construction shall not be used as BMPs during construction unless otherwise approved by the Department of Public Works. Many technologies are not designed to handle the high concentrations of sediments typically found in construction runoff, and thus must be protected from construction-related sediment loadings.
- 9.11.14 Dust Control: Dust control shall be used during grading operations. Dust control methods may consist of grading fine soils on calm days only or dampening the ground with water.
- 9.11.15 Inspection and Maintenance: Erosion and sediment controls shall be inspected as needed and at a minimum before and after rain events. Accumulated sediments shall be removed, and erosion and sediment controls shall be repaired or replaced as needed to ensure they perform as intended.
- 9.12 Illicit Discharges: In accordance with Section 97.07 of the Town of Watertown Code of Ordinances and Standard 10 of the Massachusetts Stormwater Handbook, illicit discharges to the MS4 are prohibited. Where existing sewer or drain connections are proposed to be reused, the Applicant shall confirm that no existing or potential illicit discharges are present through methods such as dye testing, television inspection of pipes, or other methods as determined by the Department of Public Works.

10.0 Construction Inspections

10.1 Notice of Construction Commencement

The Permittee must notify the Department of Public Works at least 14 days prior to the commencement of construction. In addition, the Permittee must notify the Department of Public Works a minimum of 14 days in advance of construction of critical components of any stormwater management facility or BMP.

10.2 The Department of Public Works shall perform inspections at the following stages, at a minimum:

1. Initial inspection: prior to approval of any plan;
2. Erosion control inspection: An inspection to ensure that erosion control practices are in accordance with the approved Erosion and Sediment Control Plan. Such inspection must be made prior to commencement of any earth moving activity;
3. Completion of clearing;
4. Close of the construction season;
5. Stormwater management system inspection: An inspection will be made of the completed stormwater management system, prior to backfilling of any underground drainage or stormwater conveyance structures; and
6. Final inspection: After completion of all work and stabilization of all soils, the Department of Public Works or an authorized agent shall perform an inspection of the system to determine if all work allowed under the Stormwater Management and Erosion Control Permit has been completed satisfactorily.

10.3 Inadequacy of System

- 10.3.1 If any component of the erosion and sediment control measures or stormwater management system is found to be inadequate by virtue of physical evidence of operational failure, including evidence of erosion or sedimentation on adjacent properties, rights-of-ways, the MS4, wetland, or watercourse, even if it was built in accordance with the approved Stormwater Management Plan, it shall be corrected by the Permittee. Failure of the Permittee to take corrective action shall be considered a violation of these Rules and Regulations and subject to enforcement action in accordance with Section 98.06 of the Ordinance.
- 10.3.2 Any activity that fails to comply with the conditions of the approved Erosion and Sediment Control Plan shall be considered a violation of these Rules and Regulations and subject to enforcement action in accordance with Section 6.0 of the Ordinance.

11.0 As-built Plan Requirements

- 11.1 No later than one year following completion of work, the Permittee, or its agent, shall submit to the Department of Public Works a final As-built Plan showing the actual as-built location and profile of all streets, ways, and utilities, including those installed by others, such as the gas, electric, telephone, and cable companies. The final plan must, at a minimum, contain the following information. The Department of Public Works may require the inclusion of additional information not set forth herein when deemed reasonably necessary. At a minimum, the following shall be included:

- Name, seal, and signature of the Surveyor who performed the survey;
- Date(s) of the survey;
- Reference to the approved site plan, if any, including information regarding whether the plan is on record at the Middlesex South County Registry of Deeds or Land Court;
- All streets, ways, and utilities, including those installed by others;
- Rim elevation, location, size, length, slope type, and inverts for all drainage and sewer structures and pipes, including roof drains;
- Location, size, and type of all structural BMPs, including, where applicable, the number and bottom elevation of infiltration units or stormwater storage chambers; the bottom elevation depth, length, and width of crushed stone surrounding underground infiltration systems; location of all clean-outs; the actual dimensions of any inlet/outlet control structures, and the invert elevation, size, slope, and type of all orifices, weirs, inlet and outlet pipes, structures, and headwalls;
- Final, stabilized topography, at a minimum of one-foot contour intervals.
- Location and topography at one-foot contour intervals for all surface retention/detention basins, drainage swales, or other stormwater management facilities. Additional spot grades should be provided as appropriate to confirm that the systems are constructed as designed. The invert elevation, size, and type of all orifices, weirs, inlet and outlet pipes, headwall structures, and emergency spillways also shall be provided, as well as the actual dimensions for any inlet/outlet control structures;
- Location of all buildings, structures, pervious and impervious surfaces, roads, driveways, sidewalks, patios, walls, fences, trees, and other significant landscaping features;
- Curbing type; and
- Any other features that are deemed required to ensure compliance with any conditions imposed by the Department of Public Works.

11.2 Certification: All As-built Plans shall contain the following statement: “I certify, based on field verification, that this set of as-built plans accurately reflects the conditions as they exist on the property. I further certify that the development has been constructed substantially in accordance with the approved Stormwater Management Plan and meets the requirements of the Stormwater Management and Erosion Control Permit.” This certification shall be accompanied by the signature and stamp of an Engineer and a Surveyor.

11.3 Electronic file of the stormwater system as-builts that is readable by GIS systems. This shall be in a shapefile (.shp, .dbf, .shx, .prj, and .sbx) or .dwg or .dxf.

12.0 Simplified Permits

In accordance with Section 98.01(D) of the Stormwater Management and Erosion Control Ordinance, the following activities (if subject to permitting requirements under Section 98.01(B) of the Ordinance) shall be eligible for Simplified Permits. The Simplified Permit Application

procedure shall be in accordance with Section 6.0 of these Rules and Regulations, except as modified below.

12.1 Additions and Modifications to Existing Single- and Two-Family Residential Properties

12.1.1 Eligibility

1. Any combination or series of the following activities that, over a two-year period, will result in a net increase in impervious area on the property by more than 500 square feet and less than 2,000 square feet and that will result in land disturbances of less than 5,000 square feet:
 - i. Additions and modifications to existing single- or two-family residential structures (excluding demolition and replacement of residential structures).
 - ii. Construction or expansion of impervious surfaces on existing single- or two-family residential properties, including but not limited to accessory structures, driveways, walkways, swimming pools, raised decks, and patios.
2. Proposed work is not located in a resource area protected by the Massachusetts Wetlands Protection Act or the Watertown Wetlands Ordinance;
3. For new driveways, the location has been approved by the Zoning Enforcement Officer; and
4. No direct connections to the MS4 are proposed or modified.

12.1.2 Performance Standards

1. LID practices including soil decompaction and amendments, grading to direct runoff toward pervious surfaces, and removal of excess pavement shall be employed to minimize stormwater runoff, unless infeasible.
2. Stormwater BMPs shall be provided on the property to retain a volume equivalent to two (2) inches of runoff from the proposed new impervious surface area. Retention may be achieved by infiltrating stormwater runoff into underlying soils on the property or by storing rainwater for use on the property (also known as rainwater harvesting). BMPs may be designed to retain stormwater runoff from new impervious surfaces and/or from existing impervious surfaces elsewhere on the same property. BMP designs shall meet the technical requirements specified in Section 9.0.
3. Proposed raised decks may be excluded from the calculation of new impervious area if:
 - i. The ground area beneath the proposed deck is presently bare ground or landscaped, including lawn, and is proposed to remain pervious,
 - ii. There will not be a roof constructed over the proposed deck, and
 - iii. The proposed deck will be constructed in such a manner to allow rainfall to pass through to the ground below. An example of this is the typical wooden deck with expansion spaces between the boards that form the deck surface.
4. Driveways

- i. Sand shall not be used as a de-icing material on driveways.
 - ii. Stormwater runoff must flow evenly off the edge(s) of the driveway unless driveway runoff is discharging to a stabilized conveyance or stormwater BMP.
5. Patios
- i. Patios shall be constructed of brick, stone, or other materials with open joints that sufficiently allow infiltration of rainfall to the soil below.
 - ii. The patio surface shall not create a concentrated runoff discharge point for stormwater that is not infiltrated through the surface. Stormwater runoff must flow evenly off the edge(s) of the patio unless patio runoff is discharging to a stabilized conveyance or stormwater BMP.
6. Swimming Pools
- i. Prior to draining, the pool water shall be dechlorinated in accordance with the Town of Watertown Code of Ordinances Section 97.07(A)(2)(a).
7. Appropriate erosion and sediment controls shall be provided, as specified in Section 9.11.

12.1.3 Permitting Requirements

Applications shall meet the requirements of Sections 7.0, 10.0, and 11.0, as modified below.

1. Soils Evaluation:
 - i. Documentation of soil conditions and estimated seasonal high groundwater shall be performed prior to submission of the permit application.
 - ii. The Department of Public Works may, at its discretion, waive documentation of soil conditions and estimated seasonal high groundwater prior to permit application submission provided such documentation is obtained in conjunction with other initial land disturbance activities.
2. In place of Section 7.5 requirements, submit an Abbreviated Stormwater Management Report containing the following information:
 - i. Narrative describing existing and proposed surface cover and land uses.
 - ii. Narrative describing the proposed stormwater management system, including all proposed LID practices and BMPs.
 - iii. Description of soil conditions and seasonal high groundwater, including Hydrologic Soils Group (HSG) classification published by the National Resources Conservation Service (NRCS).
 - iv. Calculations for runoff volume equivalent to 2 inches of runoff from proposed new impervious area.
 - v. Sizing calculations for stormwater BMPs, demonstrating retention of the equivalent of 2 inches of runoff from the proposed new impervious area.
 - vi. Estimated percent removal of annual average load of TSS and TP from proposed post-construction impervious surface area.
 - vii. Narrative describing the Erosion and Sediment Control Plan, including a detailed construction sequence plan, source control and pollution

prevention measures, description of BMPs provided to address soil erosion and sedimentation, stabilization measures, inspection and maintenance requirements, and record keeping.

- viii. Narrative describing the Operations and Maintenance Plan, as described in Section 7.6.
3. Operation and Maintenance Plan shall be provided as specified in Section 7.6.
4. Construction inspections shall be provided as specified in Section 10.0.
5. As-Built Plans shall be provided as specified in Section 11.0.

12.1.4 Off-site Compliance

The Department of Public Works may permit Applicants to provide off-site compliance, in accordance with Section 8.3.2, to meet the retention requirement in Section 12.1.2.2.

12.2 Residential Sump Pump Direct Connections to the MS4

12.2.1 Eligibility

1. Construction of a direct connection to the MS4 from an existing single-family or two-family residential property by means of any conduit(s), pipe(s), or hose(s) from any sump pump, crawl space pump, or sub-drain (collectively a “Sump Pump”).
2. Discharge of uncontaminated pumped groundwater to the MS4 from a residential property that does not have a feasible alternative to otherwise protect the structure from rising groundwater or to infiltrate pumped groundwater on the property without creating nuisance conditions or impacting neighboring properties.

12.2.2 Performance Standards

1. The connection shall not cause any illicit discharge or discharge of pollutants to the MS4. The Applicant shall take measures to limit the potential for discharging pollutants to the MS4.
2. Any illicit discharge will be in violation of Section 97.07 of the Town of Watertown Code of Ordinances and may result in enforcement action in accordance with the Section 97.13 of the Town of Watertown Code of Ordinances.
3. The sump pump shall first connect to a drywell or other infiltration BMP on the property.
4. All connections to the MS4 shall be by gravity.
5. At its discretion, the Town may require installation of a new manhole for connection to the MS4, if no manhole exists at the proposed point of connection.

12.2.3 Permitting Requirements

Applications shall meet the requirements of Sections 7.0, 10.0, and 11.0 as modified below.

1. In place of Section 7.0 components, submit the following:
 - i. Sketch Plan showing the proposed location and type of connection to the MS4.
 - ii. Narrative description demonstrating that the eligibility requirements in Section 12.2.1 are met.
 - iii. Narrative description of the proposed non-stormwater discharge and measures to be taken to limit the future potential for discharging pollutants to the MS4.
 - iv. A schedule and checklist for inspections to verify that the sump pump continues to only discharge clean groundwater to the MS4.
2. The Department of Public Works may require the Applicant to provide an evaluation of alternatives to connecting to the MS4 by an Engineer.
3. Construction inspections shall be provided as specified in Section 10.0.
4. The Applicant shall sign the Drainage Release Form provided in Appendix A. The Drainage Release Form shall be recorded by the Applicant with the Registry of Deeds.

12.3 Land Disturbance of Pervious Cover

12.3.1 Eligibility

1. Land disturbance activities that will not redevelop nor increase the area of impervious surfaces.
2. Proposed work will not be located in a resource area protected by the Massachusetts Wetlands Protection Act or the Watertown Wetlands Ordinance; and
3. No direct connections to the MS4 are proposed.

12.3.2 Performance Standards

1. Erosion and sediment control practices shall meet the technical requirements specified in Section 9.11.

12.3.3 Permitting Requirements

Applications shall meet the requirements of Sections 7.0, 10.0, and 11.0 as modified below.

1. The Stormwater Management Plan shall include an Erosion and Sediment Control Plan, as described in Section 7.3. Other components of the Stormwater Management Plan described in Section 7.0 are not required.
2. Construction inspections shall be provided as specified in Section 10.0.
3. As-Built Plans per Section 11.0 are not required.

12.4 Pavement Reclamation

12.4.1 Eligibility

1. Reclamation and replacement of existing pavement disturbing less than 1 acre of land only, except as exempted in the Ordinance.
2. No increase in impervious area or modification to the drainage system, except if required to meet the performance standards of the Simplified Permit.

12.4.2 Performance Standards

1. The project shall provide for removal of 90% of the proposed average annual load of TSS AND 60% of the proposed average annual load of TP generated from the total proposed impervious surface area. If the existing drainage system does not meet the performance standard, then additional water quality controls shall be installed to meet the standard.
2. Appropriate erosion and sediment controls shall be provided, as specified in Section 9.11.

12.4.3 Permitting Requirements

1. An As-built Plan shall be submitted demonstrating compliance with the performance standards.
2. If additional work is required to meet the TSS and TP removal performance standard, then documentation of proposed work, including TSS and TP removal calculations, shall be provided.
3. Proposed erosion controls shall be noted on plan or narrative.
4. An Operations and Maintenance Plan, if not already in place, shall be implemented.

12.4.4 Off-site Compliance

The Department of Public Works may permit Applicants to provide off-site compliance, in accordance with Section 8.3.2, to meet the pollutant-removal performance standards in Section 12.4.2.

13.0 Waivers

The Department of Public Works may waive strict compliance with any requirement of these Rules and Regulations where:

- Such action is allowed by federal, state, and other local statutes and/or regulations;
- Such action is in the public interest;

- Such action is not inconsistent with the purpose and intent of these Rules and Regulations and the Stormwater Management and Erosion Control Ordinance; and
- Meeting the minimum stormwater management requirements is not feasible due to the natural or existing physical characteristics of a site.

Any Applicant may submit a written request to be granted such a waiver. Such a request shall be accompanied by an explanation or documentation supporting the waiver request and demonstrating that strict application of the Stormwater Management and Erosion Control Ordinance and these Rules and Regulations does not further the purposes or objectives of the Ordinance and these Rules and Regulations. The Department of Public Works will provide a written statement of its findings and the reasons for granting or denying a waiver.

14.0 CERTIFICATE OF COMPLIANCE OF WORK

- 14.1 The Applicant shall request a Certificate of Compliance of Work from the Department of Public Works no later than one year from completion of the work. An as-built plan meeting the requirements of Section 11.1 shall accompany the request. The request shall include the following certification: “I hereby certify that all construction, development, and/or re-development has been completed in accordance with the project application and Town requirements and all information is truthful to the best of my knowledge. The DPW or its authorized agent may conduct inspections whenever necessary to determine compliance with the provisions of the Stormwater Management and Erosion and Sediment Control Permit, all applicable requirements of the Stormwater Management and Erosion Control Ordinance and the Rules and Regulations for Stormwater Management and Erosion Control. Furthermore, I acknowledge that I am now responsible for the long-term operation and maintenance of all stormwater management facilities. During a transfer of ownership, I am responsible for informing prospective new owner(s) of the requirements of the Operations and Maintenance Plan.”
- 14.2 Upon satisfactory review and acceptance of the as-built, the final site inspection shall be scheduled, in accordance with Section 10.2.
- 14.3 Upon satisfactory final site inspection, the Department of Public Works shall issue a letter certifying compliance of the work.
- 14.4 After issuance of the Certificate of Compliance, the Department of Public Works may periodically review ongoing compliance with Stormwater Permit conditions, including long-term operation and maintenance. If it finds that permit conditions have been violated, the Department may revoke the Stormwater Permit and Certificate of Compliance and take enforcement action in accordance with Section 98.06 of the Ordinance.

15.0 Severability

The invalidity of any section, provision, paragraph, sentence, or clause of these Rules and Regulations shall not invalidate any other section, provision, paragraph, sentence, or clause thereof, nor shall it invalidate any permit determination that has been previously issued.

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