

**TOWN OF ACTON**  
**Stormwater Management and Erosion & Sediment Control Regulations**  
**Adopted November 13, 2017 by the Board of Selectmen**  
**Last Amended: June 17, 2019**

**SECTION 1. GENERAL PROVISIONS**

1.1 Authority

These REGULATIONS are adopted by the Board of Selectmen as authorized by Town Meeting and Chapter X of the Acton General Bylaws.

1.2 Purpose

These REGULATIONS establish uniform procedures for the IMPLEMENTING AUTHORITY to process and administer Land Disturbance Permits and provide design standards for erosion control and stormwater management for regulated land use activities. The purpose of these REGULATIONS is to provide for the health, safety and general welfare of the citizens of the Town of Acton and the protection of surface water, groundwater, and wetlands through the regulation of land use activities that contribute to stormwater runoff.

1.3 Applicability

Any person applying for a Land Disturbance Permit under the BYLAW, whether or not governed by any other federal, state, or local laws, regulations, permits, variances, approvals, or programs, shall comply with the provisions of these REGULATIONS.

1.4 Definitions

For the purposes of these REGULATIONS, the following shall mean:

**APPLICANT:** Any person or such person's authorized representative who files an APPLICATION for a PERMIT under the BYLAW.

**APPLICATION:** All plans, forms, reports, studies or other documents which an APPLICANT submits to the IMPLEMENTING AUTHORITY under these REGULATIONS to obtain a PERMIT.

**BYLAW:** Chapter X of the Acton General Bylaws, as amended.

**COMMON PLAN OF DEVELOPMENT:** Activities which 1) occur on lots approved under the Subdivision Control Law or endorsed under Section 81P (Approval Not Required Plans); 2) require a special permit from any Board or Committee of the TOWN; 3) are by-right development resulting in multiple dwelling units or any combination of such activities

**IMPLEMENTING AUTHORITY:** The Acton Department of Public Works.

MASSACHUSETTS STORMWATER HANDBOOK: Any reference to this Handbook shall refer to the 2008 edition in use at the time these REGULATIONS were published.

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

PARTIES IN INTEREST: The APPLICANT; abutters; owners or occupiers of land directly opposite the site across any private or public street or way; and abutters to abutters if they are within one hundred feet of the site. A PARTY IN INTEREST may be located in a neighboring city or town.

PERMIT: A Land Disturbance Permit under the BYLAW, except where an Erosion Control Only PERMIT is indicated.

QUALIFIED CONSULTANT: A Registered Professional Engineer, Land Surveyor, Architect and/or Landscape Architect in Massachusetts, as appropriate.

REDEVELOPMENT: Any construction, land alteration, or improvement of impervious surfaces that does not meet the definition of NEW DEVELOPMENT.

REGULATIONS: The Stormwater Management and Erosion & Sediment Control Rules and Regulations as set forth herein.

TOWN: The Town of Acton.

Refer to the "Authority, Purpose, Definitions and Applicability" and the "Definitions" provisions in the BYLAW for additional defined terms.

## 1.5 Waiver of Regulations

Per Section 12 of the BYLAW, strict compliance with these REGULATIONS may be waived if the IMPLEMENTING AUTHORITY finds that the waiver is in the public interest, or if granting a waiver would be consistent with the intent and purpose of the BYLAW and these REGULATIONS.

1.5.1 An APPLICANT shall submit a waiver request in writing to the IMPLEMENTING AUTHORITY at the time of submission of the APPLICATION. Such requests must clearly identify the provision(s) of the REGULATIONS for which a waiver is sought and be accompanied by a statement setting forth the reasons why such a waiver would be in the public interest or why the specific information required is irrelevant to the project and why a waiver would be consistent with the intent and purpose of the BYLAW and these REGULATIONS.

## 1.6 Provision of Security

As a condition of issuance of a PERMIT and before the start of any LAND DISTURBANCE or construction activity, the IMPLEMENTING AUTHORITY may require the applicant to post a surety bond, irrevocable letter of credit, cash, or other acceptable security in an amount deemed necessary to secure the satisfactory completion of all or part of the work authorized under a PERMIT.

Satisfactory implementation of the PERMIT conditions prior to the start of any construction activity and the satisfactory completion of the work authorized shall be determined by the IMPLEMENTING AUTHORITY and the Town of Acton Conservation Agent. The IMPLEMENTING AUTHORITY reserves the right to determine the form and amount of the security however in general, the APPLICANT shall provide the following security:

Type 1 Permits: Erosion Control Only

- \$10,000 minimum surety bond, irrevocable letter of credit, cash, or other acceptable security for projects disturbing up to one acre of area or creating a minimum of 5,000 sq.ft of impervious area
- An additional \$10,000 shall be required for each additional acre of disturbance

Type 2 Permits: Stormwater Management & Erosion Control

- \$10,000 minimum surety bond, irrevocable letter of credit, cash, or other acceptable security for projects disturbing up to one acre of area or creating a minimum of 5,000 sq.ft of impervious area and:
  - \$10,000 for each additional acre of disturbance and
  - an additional amount sufficient in the opinion of the IMPLEMENTING AUTHORITY to secure performance of the construction of the stormwater management system as shown on the plan
    - A Professional Engineer (PE) licensed in the Commonwealth of Massachusetts shall provide a cost estimate, in the format provided in Appendix F, for the construction of the stormwater management system. The unit costs shall be the minimum quantity, mean cost estimate as determined by MassDOT's Construction Project Estimator for District 3 or All Districts if no estimate is available for District 3.
    - The cost estimate shall include, but not be limited to, the components for the stormwater management system as shown on the plans such as:
      - Paved areas
      - Catch Basins
      - Manholes
      - Pipes
      - Other conveyances (swales, etc)
      - Surface detention basins & outlet control structures
      - Underground detention basins
      - Roof drywells
      - Water quality structures
      - Other BMPs

Only in the event that MassDOT cost estimates for any component of the stormwater management system are not available, the latest version of RSMean, adjusted regionally for the Boston area may be used and referenced. Should no RSMean estimate be available, the Professional Engineer may use their professional judgement. Invoices or estimates from third-parties, sub-contractors or suppliers may only be used for amounts that total less than \$10,000

- Projects requiring a performance guarantee under the Town of Acton Subdivision Rules and Regulations shall meet the minimum requirements for the requirements of the Subdivision Rules & Regulations in addition to these Regulations.
- Surety bonds, irrevocable letters of credit or other non-cash forms of security shall be valid for the estimated length of the permitted project.

#### 1.7 Advice from TOWN Staff

Any advice, opinion, or information given to the APPLICANT by the IMPLEMENTING AUTHORITY or by any agency, official, or employee of the TOWN shall be considered advisory only and is not binding on the IMPLEMENTING AUTHORITY.

#### 1.8 Amendments to the REGULATIONS

The REGULATIONS may be amended by a majority vote of the Board of Selectmen after a duly noticed public hearing.

### **SECTION 2. PRELIMINARY REVIEW**

#### 2.1 Preliminary Consultations

It is strongly recommended that a prospective APPLICANT consult with the professional staff of the TOWN prior to the filing of an APPLICATION. Consultation can prevent delays in the processing of the final APPLICATION.

2.1.1 The TOWN staff may review, among other things, whether the APPLICANT'S project may be subject to the Massachusetts Wetland Protection Act (M.G.L., Chapter 131, § 40), Acton Wetland Bylaw (Chapter F of the Acton General Bylaws) and/or under any other applicable TOWN approval process.

2.1.2 No action or communication initiated by the APPLICANT prior to the filing of an APPLICATION with the Town Clerk and IMPLEMENTING AUTHORITY shall constitute an APPLICATION.

#### 2.2 Form of Consultation Request

The Applicant shall provide in hard copy and electronic PDF formats all materials for initial consultation to the IMPLEMENTING AUTHORITY along with a cover letter which includes the name, address, and phone number of a person who may be contacted concerning the review.

### 2.3 Scope of TOWN Staff Reviews

TOWN staff will review a prospective APPLICANT'S preliminary materials to help identify and resolve technical deficiencies to the extent reasonably possible before the submission of the final APPLICATION. This is intended to promote efficiency in the formal review process.

2.3.1 Staff shall limit their review of such materials to technical issues appropriate to their area of expertise and to assess whether the project adequately addresses anticipated concerns of the TOWN and the neighborhood. Except for good cause shown, staff shall complete their preliminary review within 21 days.

2.3.2 The IMPLEMENTING AUTHORITY may schedule a preliminary review meeting with other TOWN departments and the prospective APPLICANT.

2.3.3 The Applicant is solely responsible for ensuring the thoroughness, completeness, or correctness of any APPLICATION.

2.3.4 If any other TOWN permits are required for the project, the APPLICANT should discuss these permits with the staff at this time.

## **SECTION 3. APPLICATIONS**

3.1 EXEMPTIONS – Certain land disturbances are exempt from the BYLAW, including:

3.1.1 Activities that do not meet or exceed the thresholds in Section 6 of the BYLAW. The APPLICANT shall provide documentation describing how the activity does not meet or exceed the thresholds set out in the BYLAW. Otherwise, the activity shall be presumed to be regulated by the BYLAW. Such documentation by the APPLICANT shall at a minimum include a topographic survey or other similar documentation provided by a QUALIFIED CONSULTANT.

3.1.2 Activities where stormwater management has been reviewed and approved as part of an Order of Conditions from the Acton Conservation Commission, or, pursuant to Section 8.4 of the BYLAW, where the IMPLEMENTING AUTHORITY has determined that approval of the project by another TOWN entity will serve as the PERMIT. A copy of the Order of Conditions or other approval shall be provided by the APPLICANT to the IMPLEMENTING AUTHORITY

3.1.3 Normal maintenance and improvement of, or emergency repairs to, TOWN-owned public ways, drainage systems and appurtenances which do not create 5,000 square feet of impervious area and are exclusively limited to maintenance and improvement of existing TOWN-owned roadways, (including widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems, and repaving projects).

3.1.4 Activities on single family residential lots that do not meet or exceed the thresholds of the BYLAW, are not within Zones 1 and 2 of the Groundwater Protection District, and where the land disturbance is not part of a larger common plan of development

3.1.5 Normal maintenance and improvement of land in agricultural use defined by the Wetland Protection Act and its regulations. Neither the BYLAW nor these REGULATIONS shall be construed to exempt an applicant from submitting a Request for Determination of Applicability to the Acton Conservation Commission, as appropriate.

3.1.6 Maintenance or repair of an existing septic system. A copy of the approved septic repair plan shall be provided by the APPLICANT.

3.1.7 Emergency repair to existing utilities. The utility company shall provide documentation to the IMPLEMENTING AUTHORITY providing the basis for why the work qualifies as an emergency repair.

3.1.8 Normal maintenance of, or emergency repair to, any stormwater treatment facility. Normal maintenance and repair shall not include “in-kind” replacements of existing systems. Reasonable upgrades to existing systems should be considered by the APPLICANT.

3.1.9 Construction of fencing provided that neither the construction nor the fence will result in alteration of runoff or drainage characteristics.

3.1.10 Redevelopment activities that is exclusively limited to the maintenance and improvement of existing impervious areas. Said areas shall improve existing conditions where feasible.

For the purpose of complying with requirements of the TOWN’s MS4 permit, all land disturbances which require a building or demolition permit shall be documented. APPLICANTS for exempt activities which require a building or demolition permit need only apply under the exempt section of a PERMIT application and provide any documentation as required in Section 3.1 of these REGULATIONS during the building or demolition Permit application process. Otherwise, exempt APPLICANTS shall not be subject to the provisions of this BYLAW.

3.2 APPLICATION Types. Any proposed land disturbance or development shall require a PERMIT based on the following thresholds:

3.2.1 Type 1: Erosion Control Only Permit– An Erosion Control Only PERMIT shall be required for regulated activities that meet or exceed the thresholds in Section 6 of the BYLAW and require erosion control to protect resource areas given in Section 3.4.9 of these REGULATIONS or F3.18 of the Acton Wetland Bylaw, but do not result in the permanent alteration of runoff or drainage characteristics of the site.

APPLICATIONS for an Erosion Control Only PERMIT need only include a Disturbance Description and an Erosion Control and Sedimentation Plan with the contact information for the party

responsible for said plan during construction (Section 3.4 of these REGULATIONS). APPLICANTS shall be subject to all other provisions of these REGULATIONS.

3.2.2 Type 2: Stormwater Management & Erosion Control Permit (“Stormwater PERMIT” or “PERMIT”) – All other land disturbances or developments that meet or exceed the thresholds of Section 6 of the BYLAW. Applications shall include all information required by these REGULATIONS.

### 3.3 APPLICATION Form

An APPLICANT shall file its APPLICATION pursuant to Section 4.3 of these REGULATIONS. Each APPLICATION shall include the completed APPLICATION form entitled "Land Disturbance Permit Application and Checklist" – see Appendix B to these REGULATIONS.

3.3.1 If the APPLICANT is a person other than the record owner of the property, the APPLICANT must obtain the owner's signature on this form indicating that the owner has knowledge of, and consents to, the APPLICATION.

3.3.2 If the APPLICANT is acting in the name of a trust, corporation or company, the APPLICANT shall attach a valid vote or act of the entity authorizing the APPLICATION.

### 3.4 Contents of an APPLICATION

An APPLICATION for a PERMIT which lacks information or is incomplete in any manner may be denied or delayed. It is the responsibility of the APPLICANT to assure the accuracy and completeness of all information submitted to the IMPLEMENTING AUTHORITY as part of an APPLICATION. The APPLICANT shall be responsible for providing factual support for its APPLICATION including references to methodologies used in design calculations.

Changes made during the course of the APPLICATION review process shall be submitted in the same manner as above with changes and amendments clearly identified.

A complete APPLICATION for a PERMIT shall include the following items:

3.4.1 Certified Abutters List. A list of the PARTIES IN INTEREST taken from the most recent tax list of the TOWN and certified by the Town Assessor. The APPLICANT shall pay any charges required by the Town Assessor for the list.

3.4.2 Disturbance Description. A detailed description of the existing site conditions and proposed land disturbance or development demonstrating the applicability, or lack thereof, of the BYLAW which shall include a numerical estimate of the disturbed area. If proposed land disturbance or development is part of a larger common plan of development, including but not limited to an Approval Not Required plan, a description of the larger common plan of development is required.

3.4.3 Other Permits and Variances. A list and copies of variances, permits, and other special permits previously issued for the site by other TOWN Boards or State or Federal agencies, and a list of any variances or permits required to complete the proposed work. This list should include but not be limited to any permits from the Board of Health, the Conservation Commission, the Board of Appeals, the Board of Selectmen, the Massachusetts Department of Public Works, the United States Army Corps of Engineers, and the Massachusetts Department of Environmental Protection, as well as certificates issued by the Secretary of Energy and Environmental Affairs under the Massachusetts Environmental Policy Act.

NOTE: If any other permits are required from the IMPLEMENTING AUTHORITY, the APPLICANT is strongly advised to make the applications for such additional permits concurrently with this APPLICATION.

3.4.4 Recorded Plans and Deeds. A copy of the most recently recorded plan(s) and deed(s) for the lot(s) on which the work will take place bearing the book number(s), page number(s), and date(s) of recording(s) or registration(s).

3.4.5. Drainage Calculations. Stormwater runoff calculations used for the drainage system design prepared by, and displaying the seal of, a Registered Professional Engineer of Massachusetts based on a recognized standard method (Rational Formula or Soil Conservation Service Method).

3.4.5.1 Calculations must validate the sizing of all drainage structures and pipes based on precipitation estimate (in inches) for the 24-hour, 25-year storm at Latitude 42.4861°, Longitude -71.4336° in Acton, MA as provided by the most recent version of NOAA Atlas 14, Volume 10, as amended (see Appendix E). The storm distribution shall be the SCS Type III 24-hour storm distribution.

Calculations shall be provided for the 24-hour, 2-, 25- and 100-year storms and shall demonstrate a reduction in the stormwater runoff rate from pre-development to post-development for the 2- and 25-year storm events. For the purposes of demonstrating that the system as designed will not result in serious flood hazards during the 100-year storm, the calculations shall demonstrate a reduction in runoff volume from pre-development to post-development for the 100-year storm event.

3.4.5.2 The use of computer-generated reports is required and the source of the software shall be identified

3.4.5.3 If the site plan includes a “reserve parking” area, the storm drainage system design for this area shall be included in these calculations.

3.4.5.4 If any portion of the proposed drainage system connects to a public drainage system, or if the peak rate of runoff for a 25-year storm event directed from the DEVELOPMENT towards a public drainage system is increased post-development from

the DEVELOPMENT's pre-development condition, the APPLICANT shall provide calculations that demonstrate that the existing public system has the capacity to accept such runoff. The pre- and post-development catchment areas must include the off-site areas collected by the existing public system and shall be included as part of the drainage calculations.

The APPLICANT shall comply with the Town of Acton General Bylaw Chapter U for any direct connection to a Town-owned drainage structure. Connections to drainage structures owned by MassDOT are subject to state approval and shall require an access permit from MassDOT to be provided prior to issuing a building permit.

Section 3.4.6. Standards. The APPLICANT shall demonstrate that it complies with the Standards of the Massachusetts Stormwater Handbook, as amended and the following additional standards:

3.4.6.1 Applicability – Handbook Standards shall apply to all scenarios listed within the Handbook's Exceptions if the land disturbance or development meets or exceeds the thresholds in Section 6 of the BYLAW. The BYLAW thresholds supersede the exceptions within the Handbook.

3.4.6.2 Low Impact Development. An APPLICANT shall consider Low Impact Development ("LID") and green infrastructure measures. Alternatives/environmentally sensitive designs shall be provided in the evaluation narrative. See LID Alternatives and Structural BMPs listed in Massachusetts Stormwater Handbook Volume 2 Chapter 2, as amended.

3.4.6.3 New Development areas shall:

3.4.6.3.1 Retain the volume of runoff equivalent to, or greater than, one inch multiplied by the total post-construction impervious surface area on the site in all zones of the Groundwater Protection Area or meet the requirements of sections 3.4.6.3.2 and 3.4.6.3.3

3.4.6.3.2 Remove 90% of the average annual load of Total Suspended Solids (TSS) generated from the total post-construction impervious are on the site

3.4.6.3.3 Remove 60% of the average annual load of Total Phosphorus (TP) generated from the total post-construction impervious surface area on the site. Pollutant removal shall be calculated consistent with EPA Region 1's BMP Performance Extrapolation Tool or other BMP performance evaluation tool provided by EPA Region 1 or other MassDEP approved method

3.4.6.4 Redeveloped areas shall:

3.4.6.4.1 Retain the volume of runoff equivalent to, or greater than, 0.8-inch in Zone 4 of the Groundwater Protection Area and one-inch in Zones 1-3, multiplied by the total post-construction impervious surface area on the site or meet the requirements of sections 3.4.6.4.2 and 3.4.6.4.3

3.4.6.4.2 Remove 80% of the average annual load of Total Suspended Solids (TSS) generated from the total post-construction impervious are on the site

3.4.6.4.3 Remove 50% of the average annual load of Total Phosphorus (TP) generated from the total post-construction impervious surface area on the site. Pollutant removal shall be calculated consistent with EPA Region 1's BMP Performance Extrapolation Tool or other BMP performance evaluation tool provided by EPA Region 1 or other MassDEP approved method

3.4.6.3.4 Redeveloped sites may utilize offsite mitigation within the same USGS HUC10 as the redevelopment site to meet the equivalent retention or pollution removal requirements provided the applicant has retained the rights and powers necessary to assure that the off-site stormwater drainage facilities will be properly maintained in good working order.

3.4.6.5 TSS removal. Documentation shall be provided demonstrating the required TSS removal.

The APPLICATION shall provide a MassDEP TARP or STEP rating and TSS removal efficiency for any proprietary stormwater BMPs, or, if a STEP/TARP rating is unavailable, the APPLICATION shall provide documentation regarding the TSS removal efficiency of the BMP and a certification statement by a Professional Engineer certifying that the BMP as designed operates within similar conditions as the performance testing conducted by the proprietary BMP manufacturer.

3.4.7 Water Balance Calculations. Documents demonstrating compliance with applicable portions of Section 4.3 of the Acton Zoning Bylaw. An APPLICANT shall use both the methodology of Standard 3 of the Massachusetts Stormwater Handbook and the following standards to demonstrate compliance:

- Construction of Single Family homes only are exempt from the water balance requirement of the Zoning bylaw but shall be required to meet Standard 3 of the Stormwater Handbook if the project meets the threshold standards of the Handbook (greater than a 4-lot subdivision, etc)
- Where impervious areas are proposed, the Required Groundwater Recharge Volume shall be determined based on the Required Recharge Volume methodology of the Massachusetts Stormwater Handbook.
- Groundwater recharge shall be evaluated within all sub-watersheds of the project site where impervious areas are proposed, as required by Standard 3.

- For the purposes of the Water Balance requirement only, all sub-watersheds within a project site presumptively contribute to the TOWN's groundwater.
- Groundwater recharge shall be evaluated for effects on Wetland Resource Areas, as required by Standard 3. Acton Groundwater Protection Zones 1, 2 and 3 shall be considered a resource area subject to the same evaluation. Non-stormwater sources of groundwater recharge including but not limited to Title 5 septic flow or potable water shall not be considered as contributing towards the required recharge volume.
- Project sites that have poor soils (C and D Hydrologic Groups) or that are considered "redevelopment projects" under Standard 7 of the Massachusetts Stormwater Handbook must provide the required groundwater recharge volume where impervious areas are proposed. Title 5 Perc tests will not be accepted as a determination for the infiltration rate of the proposed recharge per Standard 3. A soil evaluation within the soil layer of the proposed recharge location shall be used to select the proper Rawls Rate unless the Competent Soils Professional provides an alternative testing method detailed in Standard 3.

Applicants may provide an alternative water balancing method to demonstrate compliance. Alternative methods shall provide a hydrologic water balance analysis for the pre- and post-development conditions and shall quantify the annual volume of stormwater evapotranspiration, runoff and groundwater recharge of the project site. Any proposed alternative method, such as the Thornthwaite method, shall be one that was developed by MassDEP or other state or federal agency and must first be approved by the IMPLEMENTING AUTHORITY.

3.4.8 Earth Removal Calculations. Calculations for determining the amount of earth to be removed or the amount of fill to be brought to the site. These calculations shall be prepared by, and show the seal of, a Registered Professional Engineer.

3.4.9 Massachusetts Stormwater Checklist. A completed Massachusetts Stormwater Report Checklist, latest revision.

3.4.10 Erosion Control and Sedimentation Plan. An Erosion Control and Sedimentation Plan ("Plan") which conforms to the Massachusetts Stormwater Handbook Standards and the following additional standards:

3.4.10.1 Said Plan shall at least meet the standards in Section 3 of the Acton Wetland Protection Bylaw Rules and Regulations, as amended and shall:

- Minimize the amount of disturbed area and protect natural resources
- Stabilize sites when projects are complete or operations have temporarily ceased
- Protect slopes on the construction site

- Protect all storm drain inlets and armor all newly constructed outlets
- Use perimeter controls at the site
- Stabilize construction site entrances and exits to prevent off-site tracking
- Provide inspection for stormwater controls at consistent intervals

3.4.10.2 The limit of disturbance shall be clearly noted on the Plan.

3.4.10.3 The erosion and sediment control shall control sedimentation that may impact resource areas, abutting property, public and private storm sewer systems and roadways in the TOWN.

3.4.10.4 The plan must note that the party responsible for erosion and sediment control shall control for other construction wastes such as demolition debris, litter and sanitary wastes. No construction waste shall be discharged to the sanitary or storm sewer systems.

3.4.10.5 In no event shall straw hay bales be proposed or utilized for erosion and sediment control. Approved equal products such as erosion control straw wattles are required and shall be approved by the IMPLEMENTING AUTHORITY prior to installation

3.4.11 Operation and Maintenance Plan. An Operation and Maintenance Plan which conforms to the Massachusetts Stormwater Handbook Standards and provides a guide for the regular inspection, per section 3.5, and maintenance of the stormwater management system both during and after construction.

3.4.11.1 The Plan shall provide the contact information of the parties responsible for the Operation and Maintenance Plan both during and after construction.

3.4.11.2 After construction has been completed, the TOWN maintains the right to determine the appropriate procedures to ensure adequate long-term operation and maintenance of the stormwater management system constructed. The IMPLEMENTING AUTHORITY shall consider procedures such as, but not limited to:

- Accept ownership of the private stormwater system by the Town
- Require a maintenance contract between the owner of the stormwater system and the TOWN or a third-party
- Require annual certification documenting maintenance of the stormwater system by the owner

The procedure shall be determined by the IMPLEMENTING AUTHORITY prior to issuing a PERMIT.

3.4.11.3 Ownership - For Type 2 Permits and all activities requiring stormwater management approval, the owner of the property on which work has been done pursuant to these Regulations, or any other person or agent in control of such property,

shall maintain in good condition and promptly repair and restore all stormwater management Facilities. Such repairs or restoration and maintenance shall be in accordance with approved O&M plan.

The Town of Acton will not accept ownership of stormwater infrastructure located outside of street rights of way, and the maintenance of such facilities shall remain the permanent responsibility of the Applicant or his successors and/or assigns. The owner of the property on which work has done pursuant to these regulations for private Stormwater Management Facilities, or any other person or agent in control of such property, shall maintain in good condition and promptly repair and restore all Stormwater Management Facilities in accordance with the O&M Plan and all other applicable approved plans, and all applicable laws.

3.4.11.4 Maintenance Records - Property owners responsible for the operation and maintenance of stormwater management facilities shall prepare records of the installation and of all inspections, maintenance, repairs, replacement, and disposal activities, and shall retain the records for at least five years. These records shall be made available to the IMPLEMENTING AUTHORITY during inspection of the facility and upon request. For disposal, the record must indicate the type of material, quantity of material, and disposal location.

3.4.11.5 Failure to Maintain - After notification is provided to the signatories to the Maintenance Agreement of any deficiencies discovered from an inspection of a Stormwater Management System, the owner of the property shall have 30 days (which time may be extended by the IMPLEMENTING AUTHORITY) to correct the deficiency. The IMPLEMENTING AUTHORITY shall then conduct a subsequent inspection to ensure completion of repairs.

3.4.12 Construction General Permit. Projects subject to the National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Construction Activities ("Construction General Permit") shall also submit the following with their application unless otherwise waived under 40 CFR § 122.26(b)(15)(i):

3.4.12.1 Copy of the Notice of Intent to comply with the Construction General Permit; and

3.4.12.2 A Copy of receipt of EPA Authorization letter and tracking number.

3.4.13 Site Plans. A site plan with the form and contents as set forth below. A site plan shall:

- be submitted in electronic PDF and scalable CADD formats and registered to the Massachusetts State Plane Coordinate System, plus 2 full size plans printed on 24" x 36" sheets
- be legibly drawn to fully detail and explain the intentions of the APPLICANT;

- be drawn at a standard scale (e.g., 1 inch = 20, 40, or 50 feet);
- include a reasonable numbering system for lots, buildings and dwelling units;
- feature a North arrow; and
- show a legend identifying all symbols used and an appropriate title block in the lower right hand corner.

A site plan shall also include the following:

3.4.13.1 Design Certifications - Each plan sheet shall show the seal of a Registered Professional Engineer, Registered Land Surveyor, Registered Landscape Architect, Registered Professional Architect, or some combination of these as appropriate to the data on the sheet.

3.4.13.2 Locus Plan - A Locus Plan showing an area within a one-half mile radius of the site. The scale shall be 1" = 1200'. Major streets, buildings, brooks, streams, rivers and other landmarks should be shown clearly on the locus plan.

3.4.13.3 General Site Characteristics:

- All lot lines and boundaries of the site.
- Abutting property owner information.
- Access and utility easements.
- Boundaries of the flood plain and Groundwater Protection Districts, if applicable.

3.4.13.4 Natural Site Characteristics: Site features including, but not limited to, flood plains, waterways, drainage courses, and ledge outcroppings.

- Existing and proposed contours of land shown at one (1) foot intervals unless otherwise required by the Floodplain Bylaw. Topography and all elevations shall be referenced to the NAVD88 vertical datum with the location and elevation of the starting bench mark plus at least two additional temporary bench marks on the site.
- The Horizontal datum used shall be the Massachusetts State Plane Coordinate System, Mainland Zone 2001 (US Survey Foot) and with the state plane coordinates shown for the starting and temporary bench marks (3 total).
- The horizontal and vertical datums used shall not be assumed and shall be clearly referenced on the plan.
- Location and results of any field tests to determine the maximum groundwater elevation and depth to bedrock if applicable along with associated logs of the

soil evaluation conducted by a Competent Soils Professional in compliance with Standard 3 of the Massachusetts Stormwater Handbook at the proposed recharge location.

- All wetlands and wetland buffer area boundaries. Wetlands and wetland buffer areas are defined as those areas subject to regulation under either the Wetland Protection Act or the Acton Wetland Bylaw.

#### 3.4.13.5 Site Improvements:

- Tabulations - A table showing the existing site conditions and proposed site conditions, including: individual lot area and lot area of common development, if applicable (*i.e.* total ANR subdivision area), impervious area, pervious area, total area of disturbance including areas of repaving or regrading, area of disturbance on a slope of 10% or greater including areas of repaving or regrading, minimum distance to groundwater, pre- and post-development runoff rates and groundwater recharge (annual volume).
- Setbacks – A table listing the applicable setbacks recommended for Infiltration Structures as shown in Table 2.3 of Chapter 1 of Volume 2 of the Massachusetts Stormwater Handbook, as amended. Per the Handbook, those setbacks are:

Soil Absorption Systems for Title 5 systems: 50 feet  
Private wells: 100 feet  
Public wells: Outside Zone I (As defined by MassDEP)  
Public reservoirs, etc.: Outside Zone A (As defined by MassDEP)  
Other surface waters: 50 feet  
Property lines: 10 feet  
Building foundations: >10 to 100 feet (See setbacks in Chapter 2 of Volume 2)  
Additional Setbacks for specific BMPs in Chapter 2 of Volume 2.

- Outline or footprint of any existing or proposed building or structure with identification and its finished floor elevation. The final disposition of any existing building or structure, whether it is to remain, be removed, or be altered, shall be noted. The limit of disturbance shall be clearly noted on the Plan.
- Paved parking lots, driveways, sidewalks and other impervious surfaces including existing surfaces that are intended to be repaved, with a note on the construction materials to be used.
- Areas of the site to be utilized for snow storage. Areas must be chosen that will allow snow melt to be treated by the proposed on-site stormwater treatment system prior to reaching any impaired waterway, MS4, roadway or any combination of offsite locations.
- Erosion and sedimentation control measures with a brief written description of the methods used. In most cases, compost mulch filter socks or approved equal

will be required. Silt fences may or may not be required. Hay bales shall not be used.

3.4.13.6 Phasing - If the project is to be built in phases, a plan or series of plans showing specific limits of construction for each phase and detailing the work to be accomplished in each phase shall be provided. Interim curbing and landscaping shall be shown as needed between phases.

#### 3.4.13.7 Site Utilities

- Location and type of stormwater drainage facilities, including notes on the construction materials of any pipes, culverts, catch basins or any other system component. Sufficient information relating to placement of the drainage system components (rim and invert elevations, pipe slopes, amount of cover, etc.) shall be shown so that the operation of the system can be evaluated. Any drainage ponds intended to be constructed shall be shown fully dimensioned. If a "Reserve Parking" area is proposed, the plan shall show the stormwater drainage structures intended to service the proposed reserved parking area.
- Location of any underground storage tanks for fuel or other chemical storage, including the tank types, capacities, and their condition.
- Location and type of existing and proposed water services to serve the facility (including abandoned wells). If the site is to utilize an on-site well, the site plan shall show its proposed location as well as setbacks from any building, structure, or sewage disposal system. If public water services are to be utilized, then the water main which will service the site must be shown and identified.
- The location and type of any other underground utilities including but not limited to electric, gas, telephone, or cable television services. Any emergency power facilities should also be shown.

#### 3.3.13.8 Construction Details

- Typical detail of a proposed drainage components including but not limited to: catch basins, diversion boxes, emergency slidegates, manholes, headwalls, retaining walls, walkways, subdrains, waterways, leaching basins, drainage ponds, and other similar structures. In Groundwater Protection Zones 1, 2, and 3, catch basins must be precast concrete with gas traps (Lebaron I-219, Neenah 3705, or equivalent). Precast catch basins must show gas traps and construction joints sealed with a minimum of 1" butyl-rubber gastight sealant or equivalent caulking material.

#### 3.4.13.9 Plan Notes - Plan Notes shall be provided that:

- forbid the use of fill containing hazardous materials as required by Chapter I of the Town of Acton Bylaws;

- require the marking of the limits of work in the field prior to the start of construction or site clearing;
- require the cleaning of catch basin sumps and storm water basins following construction and annually thereafter;
- restrict the hauling of earth to or from the site to the hours between 9 a.m. and 4 p.m. on weekdays;
- describe the materials to be used in the construction of impermeable surfaces such as sidewalks and driveways (a minimum 12" of gravel and 3" of bituminous concrete paving laid in two courses is required).
- list the name, phone number and mailing address of the party responsible for the Erosion Control and Sedimentation Plan during construction.

#### 3.4.14 Additional Information

The APPLICATION may contain whatever additional information the APPLICANT believes necessary to properly inform the IMPLEMENTING AUTHORITY about the development including legal opinions, copies of deeds, historical data, studies, and reports.

The IMPLEMENTING AUTHORITY may require the APPLICANT to supply additional information if it finds that such information is necessary to properly act upon the APPLICATION in question.

### Section 3.5 Inspections

Construction Site inspections shall be conducted by the APPLICANT in accordance with the approved PERMIT. Noncompliance issues discovered during inspections are the responsibility of the construction Site operator to resolve in a timely manner.

#### 3.5.1 Construction Commencement:

3.5.1.1 The APPLICANT shall notify the IMPLEMENTING AUTHORITY seven (7) workdays prior to the commencement of construction to arrange for an on-Site, pre-construction meeting. The APPLICANT's QUALIFIED CONSULTANT, the party responsible for erosion and sedimentation control (i.e. general contractor), or any other person with authority to make changes to the project, shall meet with the IMPLEMENTING AUTHORITY or its representative to review construction sequencing and the permitted plans and their implementation.

3.5.1.2 The APPLICANT shall maintain a copy of the approved and signed plans and permits for a PERMIT, and documentation demonstrating that conditions of approval have been met, including a copy of the approved Erosion and Sediment Control Plan and, if applicable, an EPA Authorization for a NPDES General Permit for Storm Water Discharges from Construction Activities (Construction General Permit) on the construction Site at all times.

#### 3.5.2 Inspections by APPLICANT:

3.5.2.1 To ensure erosion control practices are in accord with the filed Erosion and Sediment Control Plan, the APPLICANT or an authorized party responsible for erosion control will conduct erosion and sediment control inspections at least once every fourteen (14) calendar days, and within 24 hours of the end of a storm event of 0.25 inches or greater, from the start of construction until the Site is permanently stabilized.

Inspection frequency may be reduced to once a month if the Site is temporarily stabilized, Runoff is unlikely due to winter conditions (e.g., Site is covered with snow, ice, or the ground is frozen), or, if construction is occurring during seasonal dry periods. The APPLICANT shall obtain approval from the IMPLEMENTING AUTHORITY for any change in inspection frequency, including termination of inspections due to Site stabilization.

3.5.2.2 Erosion and sediment control inspections must include all areas of the Site disturbed by construction activity and areas used for storage of materials that are exposed to precipitation. The individual conducting the inspection must look for evidence of, or the potential for, pollutants entering the storm water conveyance system.

Sedimentation and erosion control measures identified in the Erosion and Sediment Control Plan must be observed to ensure proper operation. Discharge locations must be inspected to ascertain whether Erosion Control measures are effective in preventing significant impacts to waters of the Commonwealth of Massachusetts and United States, where accessible. Where discharge locations are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable. Locations where vehicles enter or exit the Site must be inspected for evidence of off-Site sediment tracking.

3.5.2.3 For each Erosion and Sediment Control Inspection, an inspection report must be completed within 24 hours of the inspection by the Site owner or an authorized representative. The inspection report shall be consistent with construction inspection reporting outlined in the Construction General Permit and shall include the following information, as a minimum:

- a) Name, date, and signature of Qualified Inspector;
- b) Weather information and a description of any discharges occurring at the time of the inspection;
- c) Weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;

- d) Location(s) of discharges of sediment or other pollutants from the Site;
- e) Location(s) of Best Management Practices (BMPS) that need to be maintained and a description of the need for maintenance;
- f) Location(s) of BMPS that failed to operate as designed or proved inadequate for a particular location, and/or location(s) where additional BMPS are needed that did not exist at prior inspection; and
- g) Corrective action required including any changes to the Stormwater Management
- h) Plan necessary and implementation dates.

3.5.2.4 A Stormwater Management Facility inspection by the APPLICANT's QUALIFIED CONSULTANT, shall be made during construction of the stormwater management system.

3.5.2.5 The APPLICANT shall conduct a final inspection near project completion to ensure temporary controls have been removed, stabilization is complete, and final conditions adhere to approved PERMIT.

3.5.2.6 A record of each inspection and of any actions taken must be retained by the APPLICANT for at least three (3) years. The inspection reports must identify any incidents of non-compliance with the permit conditions. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the construction project or Site is in compliance with this PERMIT.

3.5.2.7 If a project requires a SWPPP per the NPDES Construction General Permit, the APPLICANT must submit all inspection reports completed under that SWPPP to the IMPLEMENTING AUTHORITY.

### 3.5.3 Inspections by IMPLEMENTING AUTHORITY

3.5.3.1 At their discretion, the IMPLEMENTING AUTHORITY (or their assigns) may conduct periodic inspections of the project, to ensure compliance with the conditions of the PERMIT.

3.5.3.2 All inspection reports conducted by the APPLICANT shall be made available during the IMPLEMENTING AUTHORITY inspections.

3.5.3.3 Additional inspections may be conducted as needed if chronic deficiencies are identified.

### 3.5.4 Inadequacy of the System

3.5.4.1 The IMPLEMENTING AUTHORITY reserves the right to require corrections or improvements to the erosion control and a stormwater management system after issuance of any PERMIT based on the system's performance under actual storm conditions. If the stormwater management system is found by the IMPLEMENTING AUTHORITY to be inadequate by virtue of physical evidence of operational failure, even though it was built in accordance with the PERMIT, it shall be corrected by the APPLICANT before a Certificate of Completion or occupancy permit is released. If the APPLICANT fails to act, the IMPLEMENTING AUTHORITY may use the surety bond required pursuant to Section 1.6

3.5.4.2 If the IMPLEMENTING AUTHORITY determines that there is a failure to comply with the plan, the property owner shall be notified in writing of the nature of the violation and the required corrective actions. A Stop Work Order shall be issued until any violations are corrected and all work previously completed has received approval by the IMPLEMENTING AUTHORITY.

#### **SECTION 4. FILING PROCEDURES**

##### **4.1 Who may file an APPLICATION?**

Anyone may file an APPLICATION for a PERMIT provided that the property owner of record has signed the APPLICATION form thereby granting his/her consent to the filing of the APPLICATION.

##### **4.2 Filing Fees**

An APPLICATION shall be accompanied by check made payable to the "Town of Acton". The filing fee shall be the amount established by the Board of Selectmen in accordance with M.G.L., Chapter 40, § 22F. The fee schedule is at Appendix A of these REGULATIONS. The filing fee is not refundable.

4.2.1 Additional Review Fee Deposits - So that the IMPLEMENTING AUTHORITY may make the findings required under the BYLAW and insure that the public safety will be protected, the IMPLEMENTING AUTHORITY may select and hire qualified engineering, hydrogeological, legal, or land use consultants to review an APPLICATION and advise the IMPLEMENTING AUTHORITY. To cover the cost of these consulting services, the IMPLEMENTING AUTHORITY shall seek approval from the Board of Selectmen to require the APPLICANT to submit a review fee deposit at any time during or after the review process. If the IMPLEMENTING AUTHORITY determines that an APPLICATION requires additional fees to cover further study of significant impacts from the project, the IMPLEMENTING AUTHORITY shall seek approval from the Board of Selectmen to require the APPLICANT pay such a fee. As the scope of study and review will vary according to the size of a particular project, the APPLICANT is hereby strongly advised to consult the Engineering Department concerning the scope and cost of any such studies during the preliminary review. Failure to do so could result in delays in the processing of the APPLICATION.

In accordance with M.G.L. Ch. 44, § 53G, any amount of such deposits remaining after the issuance of building permits for the proposed construction, plus any remaining accrued interest, will be repaid to the APPLICANT or the APPLICANT'S successor in interest.

4.2.2 Appeal from the Selection of the Consultants - The APPLICANT may appeal from the selection of an outside review consultant to the IMPLEMENTING AUTHORITY. The grounds for such an appeal shall be limited to claims that the consultant selected has a conflict of interest or does not possess the minimum required qualifications of an educational degree in or related to the field at issue or three or more years of practice in the field at issue or a related field. The APPLICANT must specify the specific grounds which the APPLICANT claims constitute a conflict of interest or a failure to meet minimum professional requirements.

#### 4.3 Submission to the Town Clerk and the IMPLEMENTING AUTHORITY

An APPLICANT shall file three (3) complete copies of the APPLICATION. One copy shall go to the office of the Acton Town Clerk. The Clerk shall certify the date and time of filing. The remaining APPLICATION copies, together with the required filing fee, shall then be filed forthwith by the APPLICANT with the IMPLEMENTING AUTHORITY during normal business hours. The APPLICANT may request, and shall be entitled to, a written receipt for the materials submitted.

Each copy of the APPLICATION shall be accompanied by an electronic copy on a CD-ROM, DVD, or USB drive.

#### 4.4 Initial Review of APPLICATION

The IMPLEMENTING AUTHORITY may transmit a copy of an APPLICATION to other TOWN departments, committees, agencies, or independent consultants to ensure full and qualified review of the APPLICATION. Each reviewing party shall provide comments on an APPLICATION within twenty-one (21) days after the IMPLEMENTING AUTHORITY receives the APPLICATION. This time may be extended if the APPLICANT and the IMPLEMENTING AUTHORITY under Section 5.3.1.1 of these REGULATIONS decide, or if the IMPLEMENTING AUTHORITY under 5.3.1.2 decides, to extend the review period. Failure to timely submit comments on the APPLICATION shall be deemed an unqualified approval by the reviewing party.

The IMPLEMENTING AUTHORITY will make available to the APPLICANT upon request a copy of any comments or recommendations received.

### **SECTION 5. PUBLIC COMMENT PERIOD AND FINAL DETERMINATIONS**

#### 5.1 Public Notice

Upon submitting an APPLICATION, the APPLICANT shall notify the public that it has submitted an APPLICATION and that the IMPLEMENTING AUTHORITY is accepting comments on the APPLICATION.

The APPLICANT shall do so according to the following procedures:

5.1.1 The APPLICANT shall cause written notice to be mailed by certified mail to all PARTIES IN INTEREST, as follows:

5.1.1.1 At least five (5) business days before publishing the newspaper notice required by Section 5.1.3, the APPLICANT shall submit to the IMPLEMENTING AUTHORITY letters containing a notice addressed to each PARTY IN INTEREST, sender shown as the Town of Acton Engineering Department, 472 Main Street, Acton, MA 01720. The envelopes shall be sealed, with postage paid, and ready to mail. The letters shall be accompanied by one copy of the notice for the IMPLEMENTING AUTHORITY's record.

5.1.1.2 The notice shall provide the APPLICANT'S contact information, inform the PARTIES IN INTEREST that the APPLICANT has filed an APPLICATION for a PERMIT with the IMPLEMENTING AUTHORITY, inform the PARTIES IN INTEREST about when and where they can inspect the APPLICATION and submit comments, and inform the PARTIES IN INTEREST of the deadline for doing so (within five (5) business days of publication of the newspaper notice, as required by this section).

5.1.2 The APPLICANT shall provide a copy of the notice to the Town Clerk to be posted on the official TOWN website.

5.1.3 Once the APPLICANT files its APPLICATION, the APPLICANT shall cause a notice to be published in a newspaper of general circulation in the TOWN to inform the public that the APPLICATION is available for inspection and comment during normal business hours for five business days from the date of publication. The five-day public comment period begins on the date of publication.

5.1.3.1 The APPLICANT shall submit to the IMPLEMENTING AUTHORITY, no more than five business days after publication, a copy of the newspaper notice.

5.1.4 Failure to properly notify PARTIES IN INTEREST and to publish a notice of the comment period may invalidate the public comment period and may delay the processing of the APPLICATION.

## 5.2 Withdrawal of APPLICATION

Any APPLICATION for a PERMIT submitted hereunder may be withdrawn without prejudice at any time by notifying the IMPLEMENTING AUTHORITY in writing. No refund of fees will be provided if an APPLICATION is withdrawn.

## 5.3 Time Period for Review

The IMPLEMENTING AUTHORITY shall take final action on each APPLICATION for a PERMIT within thirty (30) days after the close of the public comment period, unless such APPLICATION has been withdrawn from consideration as set forth in Section 5.2 above, and except as provided in this subsection.

5.3.1 Continuation and Extension - The period within which final action shall be taken may be extended for a defined period by written agreement between the IMPLEMENTING AUTHORITY and the APPLICANT.

5.3.1.1 If the APPLICANT wishes to include significant information that was not included in the original APPLICATION, the APPLICANT shall request from the IMPLEMENTING AUTHORITY a written agreement for continuation and extension under Section 5.3.1. Additional materials shall be submitted to the IMPLEMENTING AUTHORITY in the same manner and form as the original APPLICATION.

5.3.1.2 In the event that the IMPLEMENTING AUTHORITY determines that the APPLICATION contains insufficient information upon which to make a finding, the IMPLEMENTING AUTHORITY may, in its discretion, continue the public comment period to a later date to allow the APPLICANT to submit a revised APPLICATION. Such a continuation shall automatically extend the 30-day period within which final action shall be taken by the IMPLEMENTING AUTHORITY.

#### 5.4 PERMIT Approval

If both the IMPLEMENTING AUTHORITY and the TOWN Department of Public Works finds that an APPLICATION meets the standards set forth in Section 8.10 of the BYLAW, they shall approve the APPLICATION and issue a PERMIT to the APPLICANT. The TOWN DPW must approve all final PERMIT decisions.

5.4.1 The IMPLEMENTING AUTHORITY shall file the PERMIT with the Town Clerk and send a copy to the APPLICANT by certified mail. The IMPLEMENTING AUTHORITY may also send a copy of the PERMIT to the property owner, to other TOWN departments, to PARTIES IN INTEREST, and to those who requested such notice during the public comment period.

#### 5.4.2 Submission of Final Approved Site Plans

Prior to applying for a building or demolition permit, the APPLICANT shall submit the approved Site Plan as amended by the IMPLEMENTING AUTHORITY in its PERMIT in electronic PDF and scalable CADD formats and registered to the Massachusetts State Plane Coordinate System, plus one (1) full size plan printed on 24" x 36" sheets. No building or demolition permit will be issued until the plan is found to be in compliance with the PERMIT.

#### 5.5 PERMIT Denial

The IMPLEMENTING AUTHORITY or the TOWN Department of Public Works may deny a PERMIT for any of the reasons set forth in Section 8.10.3 of the BYLAW.

#### 5.6 Appeal

A decision of the IMPLEMENTING AUTHORITY regarding the final disposition of a PERMIT shall be final, and may be appealed pursuant to Section 8.12 of the BYLAW.

#### 5.7 Time Limit for PERMIT

Except when the IMPLEMENTING AUTHORITY otherwise specifies, any PERMIT granted by the IMPLEMENTING AUTHORITY shall expire two (2) years from the date of filing of the PERMIT with the Office of the Town Clerk unless within that time substantial use or construction has begun in full compliance with the PERMIT.

5.7.1 The IMPLEMENTING AUTHORITY may extend the expiration date set forth in the PERMIT for good cause shown. Any request for the IMPLEMENTING AUTHORITY to do so shall be made in writing at least thirty (30) days prior to the stated expiration date. Failure to timely submit such a request shall be cause for the IMPLEMENTING AUTHORITY to deny the requested time extension.

#### 5.8 As-Built Plan

Within no later than two years after completion of the project and prior to obtaining an Occupancy Permit or Certificate of Completion, the APPLICANT shall provide two copies of the as-built plan, plus electronic copies in PDF and scalable CADD formats, registered to the Massachusetts State Plane Coordinate System. The as-built plan shall show:

5.8.1 The entire site including but not limited to the drainage, irrigation, and wastewater disposal systems; final grading and limits of clearing; all driveways and sidewalks; parking lots; public and private utilities (above and below grade) including all outdoor lighting; landscaping and buildings and structures as they exist.

5.8.2 All elevations shall be referenced to the NAVD88 vertical datum and horizontally to the Massachusetts State Plane Coordinate System, Mainland Zone 2001 (US Survey Foot).

5.8.3 A completed certification form (Appendix D) certified by the QUALIFIED CONSULTANT stating that the site has been constructed in accordance with the approved PERMIT and that all the features required by the approved plans, decisions or orders have been field inspected by the QUALIFIED CONSULTANT with any non-conforming features clearly noted.

5.8.3.1 It is presumed that the QUALIFIED CONSULTANT has field inspected all components of the stormwater system and certifies that the system, as built, functions as designed and approved in the PERMIT. Non-conforming features or any other exceptions to the QUALIFIED CONSULTANT's certification are presumed not to meet the standards approved in the PERMIT.

Section 5.8.4. APPLICANT shall provide as-built information in a format compatible with the TOWN's GIS system as determined by the IMPLEMENTING AUTHORITY

Section 5.8.5. Certificate of Completion - The IMPLEMENTING AUTHORITY will issue a certificate to the Permittee, certifying completion upon receipt and approval of the maintenance logs, final inspection, reports and/or upon otherwise determining that all work of the PERMIT has been satisfactorily completed in conformance with the BYLAW and these Regulations.

#### 5.9 Limitation of the PERMIT

A PERMIT shall not be a substitute for other permits or approvals required by other TOWN departments, bodies or other authorities having jurisdiction. The IMPLEMENTING AUTHORITY may condition any PERMIT on the APPLICANT'S demonstrating that it has complied with the requirements of other governmental bodies having jurisdiction. The APPLICANT is encouraged to seek approvals and certificates of compliance from such other governmental bodies prior to or concurrent with filing its APPLICATION.

#### 5.10 Repetitive APPLICATION

No APPLICATION which has been unfavorably and finally acted upon by the IMPLEMENTING AUTHORITY shall be acted favorably upon within two years after the date of final unfavorable action unless the IMPLEMENTING AUTHORITY finds that specific and material changes in the conditions upon which the previous unfavorable action was based have occurred and the IMPLEMENTING AUTHORITY describes such changes in the records of its proceedings. A repetitive APPLICATION shall be approved according to this Section 5.

#### 5.11 Amending a PERMIT

A previously-granted PERMIT may be amended by written request to the IMPLEMENTING AUTHORITY or on the IMPLEMENTING AUTHORITY'S own motion. The IMPLEMENTING AUTHORITY shall determine whether any request for further alterations to a site constitutes a minor amendment or if such request requires a new APPLICATION and public comment period. The IMPLEMENTING AUTHORITY, with the approval of the TOWN Department of Public Works, may amend a PERMIT without a new public comment period provided that it finds that the amendment will not pose a significant detriment to the public interest and is consistent with the purpose and intent of the BYLAW. Consultation with the IMPLEMENTING AUTHORITY is recommended prior to the filing of any request to amend a PERMIT. The fee for minor amendments is set out in Appendix A.

### **SECTION 6. PERFORMANCE GUARANTEE**

Pursuant to Section 11 of the BYLAW, the IMPLEMENTING AUTHORITY may require the APPLICANT to post surety bond, irrevocable letter of credit, cash, or other acceptable performance guarantee.

### **SECTION 7. ENFORCEMENT**

The IMPLEMENTING AUTHORITY shall enforce the BYLAW, these REGULATIONS, and its orders, violation notices and enforcement orders as authorized by Section 13 of the BYLAW.

#### **SECTION 8. SEVERABILITY**

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

#### **APPENDIX**

Appendix A: LAND DISTURBANCE PERMITS - FEE SCHEDULE

Appendix B: APPLICATION FOR LAND DISTURBANCE PERMIT

Appendix C: SAMPLE LEGAL NOTICE

Appendix D: AS-BUILT CERTIFICATION & SAMPLE INSPECTION AND MAINTENANCE FORMS

Appendix E: SAMPLE NOAA POINT PRECIPITATION FREQUENCY ESTIMATES

Appendix F: SAMPLE STORMWATER SYSTEM COST ESTIMATE

Appendix A

LAND DISTURBANCE PERMITS - FEE SCHEDULE

<b><u>Land Disturbance Permit Fee Schedule</u></b>	
Exempt	\$0
Type 1 – Erosion Control Only	\$250
Type 2 – Stormwater Management & Erosion Control	\$1500
Engineering Department GPS Survey Support	\$100 per benchmark

Appendix B – Land Disturbance Permit Application and Checklist



**TOWN OF ACTON**  
**472 MAIN STREET**  
**ACTON, MASSACHUSETTS, 01720**  
**TELEPHONE (978) 929-6630**  
**FAX (978) 929-6340**  
**ENGINEERING@ACTON-MA.GOV**

## **Land Disturbance Permit Application and Checklist**

An applicant must be familiar with the Town of Acton Stormwater Bylaw (Chapter X) and Rules and Regulations prior to submitting the application.

### ***Authority***

These rules are adopted by the Board of Selectmen as authorized under the authority granted by the Home Rule Amendment, Article LXXXIX (89) of the Constitution of the Commonwealth of Massachusetts, the Home Rules statues, and in accordance with the regulations of the federal Clean Water Act found at 40 CFR 122.34, the Phase II rule from the Environmental Protection Agency found in the December 8, 1999 Federal Register, and the National Pollutant Discharge Elimination System General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems issued by EPA Region 1 on April 18, 2003.

### ***Purpose***

The purpose of this permit is to establish Stormwater management requirements and controls that protect the public health, safety and welfare for the Town of Acton.

### ***Applicability***

This permit shall apply to all Land Disturbance and Development within the jurisdiction of the Town of Acton. Except in accordance with a Land Disturbance Permit issued pursuant to the Chapter X Stormwater Management and Erosion & Sediment Control bylaw, no Person shall perform any Land Disturbance that results in one or more of the Regulated Activities defined in Section 6.1 of the bylaw that is not an Exempt Activity listed in Section 7.1

### ***Thresholds***

A Land Disturbance Permit is required if any of the following criteria apply:

1. Disturbance OR development of 1 acre (43,560 square feet) of land.
2. Disturbance OR development of 5,000 square feet within areas of a 10% slope or greater
3. Disturbance OR creation of 5,000 square feet or more of impervious area
4. Construction of a new drainage system OR alteration of an existing system

***It is the responsibility of the owner to notify the Engineering Department seven (7) days prior to the commencement of any construction or clearing.***

**Permit Categories (check applicable category)**

- Exempt Activities (to be submitted with Building or Demolition Permits)
  - Single-Family Home activities that are...(all conditions must apply):
    - Below Chapter X Thresholds
    - Located within Groundwater Protection Zones 3 or 4
    - Is not part of a Common Plan of Development
  - Activity below permit thresholds or otherwise exempt: \_\_\_\_\_
  - Activities with approved stormwater management (check all that apply)
    - Order of Conditions (MassDEP File #: \_\_\_\_\_)
    - Site Plan Special Permit (Site Plan Permit #: \_\_\_\_\_)
    - Definitive Subdivision (Subdivision Decision #: \_\_\_\_\_)
    - Comprehensive Permit (Permit #: \_\_\_\_\_)
  
- Type 1 Permit – Erosion Control ONLY: required for disturbances greater than or equal to the Chapter X Thresholds without a permanent alteration of drainage characteristics of the site (check all that apply)
  - Replacement and/or construction of a non-stormwater utility
  - Activity which does not increase the pre-development impervious area
  - Other Activity: \_\_\_\_\_
  
- Type 2 Permit – Stormwater Management & Erosion Control
  - Residential
    - ANR Subdivision or other Common Plan of Development
    - Other New Construction: \_\_\_\_\_
    - Redevelopment
  - Commercial
    - New Construction
    - Redevelopment
  - Other Activity: \_\_\_\_\_

**Land Disturbance Permit Fee Schedule**

Exempt Activities	\$0	
Erosion Control Only	\$250	
Stormwater Management and Erosion Control	\$1500	
GPS Survey Support	\$100 per benchmark	
<i>Number of Benchmarks Requested &amp; Fee:</i>	____ benchmarks	\$ ____ fee



# Land Disturbance Permit Application

## Applicant Information

Applicant Name: \_\_\_\_\_ Date: \_\_\_\_\_  
*Last First M.I.*

Applicant Address: \_\_\_\_\_  
*Company/Individual Name Street Address Apartment/Unit #*

\_\_\_\_\_

*City State ZIP Code*

Phone: \_\_\_\_\_ Email \_\_\_\_\_

## Contractor Responsible for Construction Site Erosion & Sedimentation Control

**Check if same as Applicant**

Company: \_\_\_\_\_ Date: \_\_\_\_\_

Contact Name: \_\_\_\_\_  
*Last First M.I.*

Address: \_\_\_\_\_  
*Street Address Suite / Floor #*

\_\_\_\_\_

*City State ZIP Code*

Phone: \_\_\_\_\_ Email \_\_\_\_\_

## Project Scope & Description

Project Location: \_\_\_\_\_  
*Street Address Apartment/Unit # Map/Parcel*

Record Owner: \_\_\_\_\_  
*Last Name (or Trust/Company) First M.I. Signature*

Project/Land Disturbance Description: \_\_\_\_\_  
(See Section 3.4 of Rules) \_\_\_\_\_  
(Use additional sheets if necessary) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Project Plans: \_\_\_\_\_  
*Title Date:*

**Land Disturbance Thresholds & Certification**

*(All disturbances are presumed to be regulated by Chapter X unless completed)*

Land Disturbance Threshold Check (to be completed by a Qualified Consultant)	
Total area of land disturbance	Area (sq.ft or acres)
Area of disturbance on a 10% slope	
Impervious area created or altered (includes roofs, pools, pavement, etc)	<b>Created:</b>  <b>Altered Only:</b>

Check if applicable:

- Project creates OR alters a stormwater system or conveyance
  - Drainage area serviced: \_\_\_\_\_ (sq.ft/ac) Impervious Area Served: \_\_\_\_\_ sq.ft
- Project is subject to the National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Construction Activities
  - NOI # \_\_\_\_\_ (Include copy of NOI with application)
  - EPA Tracking # \_\_\_\_\_ (Include copy of receipt of EPA Authorization Letter)

**Qualified Consultant Information**

Company: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_  
Last First M.I. License Number

Address: \_\_\_\_\_  
Street Address Suite / Floor #

\_\_\_\_\_ City State ZIP Code

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

**Certification (stamp):**

*Please find the required documentation to be provided when turning in your application. See sections (i.e. "3.4") of Rules & Regulations for detailed descriptions:*

## **Exempt Activities**

*Must provide a completed land disturbance application and the following:*

- Activity Below Permit Thresholds
  - Site Plan showing land disturbance
- Activity With Approved Stormwater Management
  - Copy of Order of Conditions and/or Approved Decision
  - All Type 2 Permit requirements required by the Approved Decision
- Other Exempt Activities
  - Any applicable materials within Section 3.1

## **Type 1 Permit – Erosion Control Only:**

- Completed Land Disturbance Application
- Erosion Control Bond: \$10,000 per acre disturbed (\$10,000 minimum) *[Not Required for Public Utilities]*
- Erosion Control & Sedimentation Plan (3.4.10)
- NPDES Construction General Permit (3.4.12) *[if applicable]*

## **Type 2 Permit – Erosion Control & Stormwater Management:**

- All Type 1 Permit Requirements
- Certified Abutters List (3.4.1) & Proof of mailing (i.e. green cards)
- Stormwater Management Report which includes:
  - Land Disturbance Description (3.4.2)
  - Other Permits & Variances (3.4.3)
  - Recorded Plans & Deeds (3.4.4)
  - Calculations: Earth Removal, Drainage & Water Balance Calculations (3.4.5 to 3.4.8)
  - Stormwater Checklist (3.4.9)
  - Cost Estimate for Erosion Control & Stormwater System Performance Bond (1.6)
  - Operation & Maintenance Plan (3.4.11)
- Site Plans (3.4.13):
  - Existing & Proposed Site Features (3.4.13.1 through 3.4.13.9)
  - Erosion Control & Sedimentation Plan (3.4.10)
- Post-Construction Requirements: To be submitted upon project completion
  - Inspection Logs [kept by applicant during construction] (3.5.2)
  - As-Built Plan (5.8) & Certification (5.8.3)

Appendix C – Sample Legal Notice



Engineering Department

**TOWN OF ACTON**  
472 Main Street  
Acton, Massachusetts 01720  
Telephone (978) 929-6630  
Fax (978) 929-6346  
engineering@acton-ma.gov

[DATE]

**To:** Community Newspaper Company  
P.O. Box 9113  
Needham, MA 02192  
FAX: 781-453-6650  
EMAIL: legals@wickedlocal.com

**From:** [Applicant Name]  
Land Disturbance Permit  
[Applicant Address]  
[City, State Zip]

**Re:** Legal Advertisement

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ACTON DEPARTMENT OF PUBLIC WORKS

PUBLIC NOTICE

In accordance with Chapter X of the General Bylaws, and 5.1 of the Land Disturbance Permit Rules and Regulations, the Acton Engineering Department will accept submittals for public comment beginning the date of this newspaper's publication of the notice and ending five (5) business days after the public notice has been posted, at the Engineering Department of the Town Hall, 472 Main St., Acton, MA on the application of [APPLICANT] for approval of a Land Disturbance Permit, on a parcel of land located at [SITE ADDRESS], Acton, MA Map [MAP] parcel [PARCEL] of the Acton Town Atlas. The application will be available for public review and comment during normal business hours for five (5) business days after the date of publication of this notice.

Please advertise this notice on: **[Date of publication]**

Please bill: [Applicant Name]  
[Applicant Address]  
[CITY, STATE ZIP CODE]

Email: **[Applicant Email]**

Phone #: [Applicant Phone Number]

Appendix D – As-Built Certification & Sample Inspection And Maintenance Forms



**TOWN OF ACTON**  
472 Main Street  
Acton, Massachusetts, 01720  
Telephone (978) 929-6630  
Fax (978) 929-6340

**Engineering Department**

---

[DATE]

**Land Disturbance Permit – As-Built Certification**

[APPLICANT NAME]  
[APPLICANT ADDRESS]  
[CITY, STATE ZIP]

[QUALIFIED CONSULTANT NAME]  
[QUALIFIED CONSULTANT ADDRESS]  
[CITY, STATE ZIP]

RE: [PERMIT NUMBER]

SITE: [ADDRESS] [MAP/PARCEL ID] Acton, MA

In accordance with Chapter X of the General Bylaws, and Section 5.8 of the Land Disturbance Permit Rules and Regulations, I [QUALIFIED CONSULTANT] certify that all features required by the approved plans, decisions or orders have been field inspected and the site has been constructed in accordance with the approved permits. Any non-conforming features are clearly noted on the as-built plan and I certify that the stormwater system as constructed functions as approved.

Signature: \_\_\_\_\_

PE# \_\_\_\_\_

Date: \_\_\_\_\_

Name (print): \_\_\_\_\_

**Certification (stamp):**





**TOWN OF ACTON**  
472 Main Street  
Acton, Massachusetts, 01720  
Telephone (978) 929-6630  
Fax (978) 929-6340

**Engineering Department**

---

**INSPECTIONS AND MAINTENANCE CERTIFICATION**

*To be conducted within 24-hours of a 0.25-inch storm and once every fourteen (14) days*

I, \_\_\_\_\_ (print or type name), certify the following:

1. I am making this Stormwater Management Facilities Certification for the following property:

\_\_\_\_\_  
(print or type name of subdivision, condominium or other development)

located at:

\_\_\_\_\_  
(print or type address), (the "Property");

2. The owner, operator, tenant, lessee or homeowners' association of the Property is:

\_\_\_\_\_  
(name(s) of owner, operator, tenant, lessee, homeowners' association or other party having control over the Property);

3. I am the:

- Owner, Operator, Tenant, Lessee or President of the Homeowners' Association.  
 Qualified Inspector hired by the same.

4. I have knowledge of stormwater control and have reviewed the approved Stormwater Management Plan for the Property;

5. On \_\_\_\_\_, 20\_\_\_\_, I inspected or had inspected by

\_\_\_\_\_, a Qualified Inspector, the Stormwater Management Facilities, including but not limited to parking areas, catch basins, drainage

swales, basins, treatment systems, ponds, pipes and related structures required by the approved Operations and Maintenance Plan developed for the Property.

6. At the time of my inspection of the Stormwater Management Facilities on the Property, I or the Qualified Inspector identified the following need(s) for routine maintenance or deficiencies in the Stormwater Management Facilities:

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7. On \_\_\_\_\_, 20\_\_\_\_, I took or had taken the following routine maintenance or the following corrective action(s) to address the deficiencies in the Stormwater Management Facilities stated in (6.) above:

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8. Additional information, including weather information, is included with this inspection form. See attached information. Total number of pages submitted and certified are \_\_\_\_\_ pages

9. As of the date of this certification, the Stormwater Management Facilities are functioning as intended by the approved Post-Construction Stormwater Management Plan for the Property.

Date: \_\_\_\_\_, 20\_\_\_\_.

By: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Name

COMMONWEALTH OF MASSACHUSETTS

\_\_\_\_\_, ss.

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me the undersigned notary public, personally appeared \_\_\_\_\_, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person who signed the preceding or attached document in my presence, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

\_\_\_\_\_  
Notary Public

My Commission Expires:



## **Additional Information for Inspectors (See Section 3.5 of Land Disturbance Regs)**

Required information for inspections:

1. Name, date, and signature of Qualified Inspector;
  2. Weather information and a description of any discharges occurring at the time of the inspection;
  3. Weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;
  4. Location(s) of discharges of sediment or other pollutants from the Site;
  5. Location(s) of Best Management Practices (BMPS) that need to be maintained and a description of the need for maintenance;
  6. Location(s) of BMPS that failed to operate as designed or proved inadequate for a particular location, and/or location(s) where additional BMPS are needed that did not exist at prior inspection; and
  7. Corrective action required including any changes to the Stormwater Management
  8. Plan necessary and implementation dates.
- A Stormwater Management Facility inspection shall be made during construction of the stormwater management system by the owner's inspector.
  - The inspector shall conduct a final inspection near project completion to ensure temporary controls have been removed, stabilization is complete, and final conditions adhere to approved permit.
  - A record of each inspection and of any actions taken must be retained by the owner for at least three (3) years. The inspection reports must identify any incidents of non-compliance with the permit conditions. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the construction project or Site is in compliance with a land disturbance permit.
  - If a project requires a SWPPP per the NPDES Construction General Permit, the owner must submit all inspection reports completed under that SWPPP to the Department of Public Works.

**At their discretion, the Department of Public Works (or their assigns) may conduct periodic inspections of the project, to ensure compliance with the conditions of the PERMIT. All inspection reports conducted by the inspector shall be made available.**

## Appendix E – Sample NOAA Point Precipitation Frequency Estimates



**NOAA Atlas 14, Volume 10, Version 3**  
**Location name: Acton, Massachusetts, USA\***  
**Latitude: 42.4861°, Longitude: -71.4336°**  
**Elevation: 260.19 ft\*\***



\* source: ESRI Maps  
 \*\* source: USGS

**POINT PRECIPITATION FREQUENCY ESTIMATES**

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerials](#)

**PF tabular**

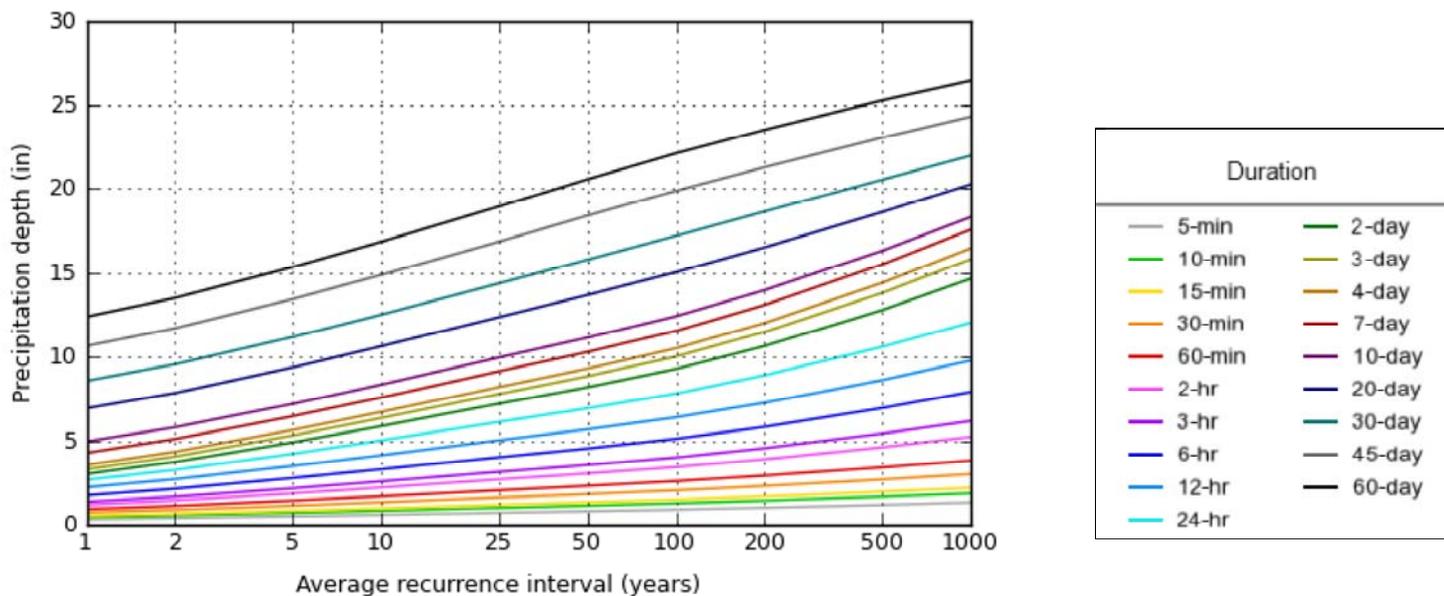
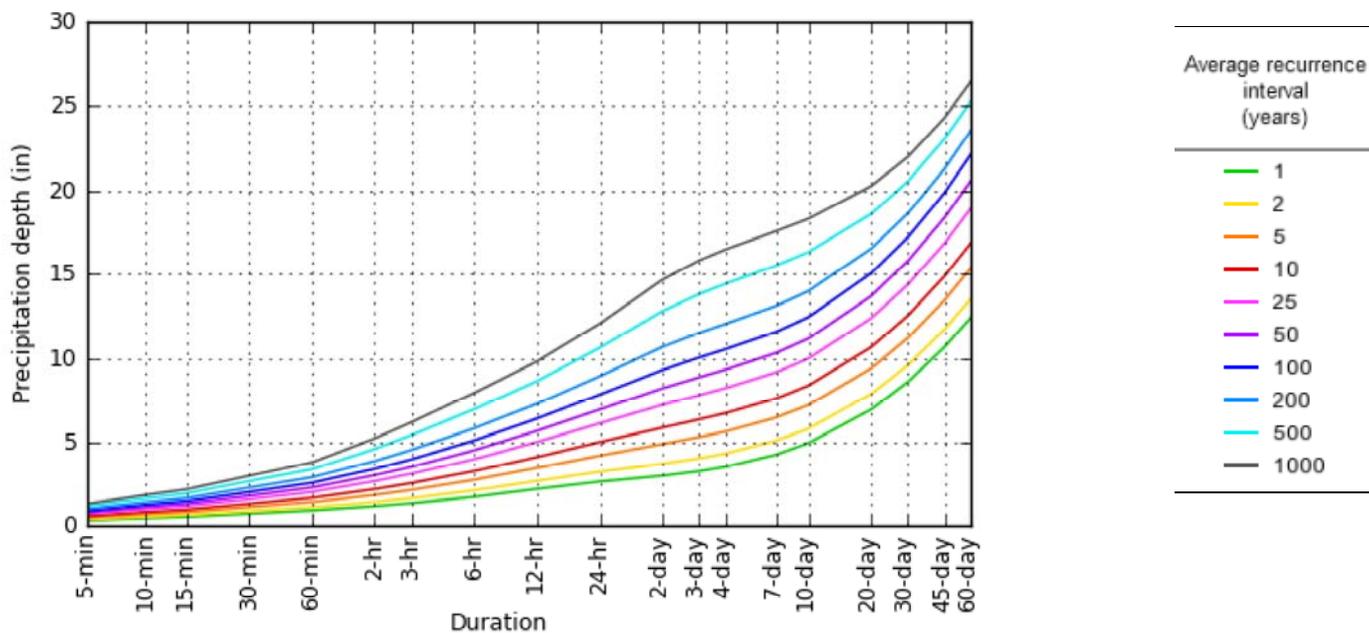
<b>PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)<sup>1</sup></b>										
<b>Duration</b>	<b>Average recurrence interval (years)</b>									
	<b>1</b>	<b>2</b>	<b>5</b>	<b>10</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>	<b>1000</b>
<b>5-min</b>	<b>0.319</b> (0.247-0.406)	<b>0.384</b> (0.297-0.489)	<b>0.490</b> (0.378-0.626)	<b>0.578</b> (0.443-0.742)	<b>0.699</b> (0.520-0.936)	<b>0.789</b> (0.577-1.08)	<b>0.886</b> (0.631-1.26)	<b>0.999</b> (0.671-1.44)	<b>1.17</b> (0.754-1.73)	<b>1.31</b> (0.826-1.98)
<b>10-min</b>	<b>0.452</b> (0.350-0.575)	<b>0.544</b> (0.421-0.692)	<b>0.694</b> (0.535-0.887)	<b>0.819</b> (0.628-1.05)	<b>0.991</b> (0.737-1.33)	<b>1.12</b> (0.817-1.53)	<b>1.25</b> (0.893-1.78)	<b>1.41</b> (0.950-2.04)	<b>1.65</b> (1.07-2.45)	<b>1.85</b> (1.17-2.80)
<b>15-min</b>	<b>0.532</b> (0.412-0.676)	<b>0.640</b> (0.495-0.814)	<b>0.817</b> (0.629-1.04)	<b>0.963</b> (0.737-1.24)	<b>1.17</b> (0.867-1.56)	<b>1.32</b> (0.961-1.80)	<b>1.48</b> (1.05-2.09)	<b>1.66</b> (1.12-2.39)	<b>1.94</b> (1.26-2.89)	<b>2.17</b> (1.38-3.29)
<b>30-min</b>	<b>0.725</b> (0.561-0.921)	<b>0.873</b> (0.675-1.11)	<b>1.12</b> (0.860-1.42)	<b>1.32</b> (1.01-1.69)	<b>1.59</b> (1.19-2.13)	<b>1.80</b> (1.32-2.46)	<b>2.02</b> (1.44-2.87)	<b>2.28</b> (1.53-3.28)	<b>2.66</b> (1.72-3.96)	<b>2.98</b> (1.89-4.52)
<b>60-min</b>	<b>0.917</b> (0.710-1.17)	<b>1.11</b> (0.855-1.41)	<b>1.42</b> (1.09-1.81)	<b>1.67</b> (1.28-2.14)	<b>2.02</b> (1.51-2.71)	<b>2.29</b> (1.67-3.13)	<b>2.57</b> (1.83-3.64)	<b>2.90</b> (1.95-4.17)	<b>3.38</b> (2.19-5.03)	<b>3.80</b> (2.40-5.74)
<b>2-hr</b>	<b>1.17</b> (0.911-1.47)	<b>1.42</b> (1.11-1.79)	<b>1.84</b> (1.43-2.33)	<b>2.19</b> (1.69-2.78)	<b>2.67</b> (2.00-3.55)	<b>3.02</b> (2.23-4.11)	<b>3.40</b> (2.45-4.82)	<b>3.88</b> (2.61-5.53)	<b>4.60</b> (2.99-6.77)	<b>5.22</b> (3.32-7.83)
<b>3-hr</b>	<b>1.35</b> (1.06-1.69)	<b>1.65</b> (1.29-2.07)	<b>2.14</b> (1.67-2.69)	<b>2.55</b> (1.98-3.22)	<b>3.11</b> (2.35-4.13)	<b>3.53</b> (2.62-4.78)	<b>3.98</b> (2.88-5.62)	<b>4.54</b> (3.07-6.45)	<b>5.42</b> (3.53-7.94)	<b>6.18</b> (3.93-9.21)
<b>6-hr</b>	<b>1.73</b> (1.37-2.15)	<b>2.12</b> (1.67-2.63)	<b>2.75</b> (2.16-3.42)	<b>3.27</b> (2.56-4.10)	<b>3.99</b> (3.04-5.24)	<b>4.52</b> (3.38-6.08)	<b>5.10</b> (3.72-7.14)	<b>5.83</b> (3.96-8.19)	<b>6.95</b> (4.54-10.1)	<b>7.93</b> (5.06-11.7)
<b>12-hr</b>	<b>2.20</b> (1.76-2.71)	<b>2.68</b> (2.14-3.30)	<b>3.47</b> (2.76-4.28)	<b>4.12</b> (3.25-5.11)	<b>5.01</b> (3.84-6.51)	<b>5.68</b> (4.26-7.54)	<b>6.40</b> (4.68-8.84)	<b>7.28</b> (4.97-10.1)	<b>8.63</b> (5.65-12.4)	<b>9.79</b> (6.27-14.3)
<b>24-hr</b>	<b>2.64</b> (2.13-3.22)	<b>3.23</b> (2.60-3.94)	<b>4.20</b> (3.37-5.14)	<b>5.01</b> (3.99-6.16)	<b>6.12</b> (4.72-7.88)	<b>6.94</b> (5.25-9.13)	<b>7.83</b> (5.76-10.7)	<b>8.92</b> (6.11-12.3)	<b>10.6</b> (6.97-15.1)	<b>12.0</b> (7.73-17.4)
<b>2-day</b>	<b>2.99</b> (2.43-3.61)	<b>3.71</b> (3.01-4.48)	<b>4.89</b> (3.96-5.92)	<b>5.87</b> (4.72-7.14)	<b>7.21</b> (5.62-9.22)	<b>8.20</b> (6.26-10.7)	<b>9.29</b> (6.90-12.7)	<b>10.6</b> (7.33-14.5)	<b>12.8</b> (8.43-18.0)	<b>14.6</b> (9.43-21.0)
<b>3-day</b>	<b>3.27</b> (2.67-3.92)	<b>4.04</b> (3.30-4.85)	<b>5.30</b> (4.31-6.39)	<b>6.35</b> (5.13-7.69)	<b>7.80</b> (6.10-9.91)	<b>8.86</b> (6.79-11.5)	<b>10.0</b> (7.48-13.6)	<b>11.5</b> (7.93-15.6)	<b>13.8</b> (9.12-19.3)	<b>15.8</b> (10.2-22.5)
<b>4-day</b>	<b>3.53</b> (2.90-4.22)	<b>4.33</b> (3.55-5.18)	<b>5.63</b> (4.60-6.76)	<b>6.72</b> (5.45-8.10)	<b>8.21</b> (6.44-10.4)	<b>9.31</b> (7.15-12.0)	<b>10.5</b> (7.86-14.2)	<b>12.0</b> (8.32-16.2)	<b>14.4</b> (9.53-20.1)	<b>16.5</b> (10.6-23.3)
<b>7-day</b>	<b>4.26</b> (3.52-5.05)	<b>5.10</b> (4.21-6.05)	<b>6.46</b> (5.31-7.69)	<b>7.59</b> (6.20-9.08)	<b>9.14</b> (7.21-11.4)	<b>10.3</b> (7.94-13.2)	<b>11.5</b> (8.65-15.4)	<b>13.1</b> (9.10-17.5)	<b>15.5</b> (10.3-21.4)	<b>17.6</b> (11.4-24.7)
<b>10-day</b>	<b>4.95</b> (4.11-5.84)	<b>5.80</b> (4.81-6.85)	<b>7.20</b> (5.95-8.53)	<b>8.36</b> (6.86-9.96)	<b>9.96</b> (7.88-12.4)	<b>11.1</b> (8.62-14.1)	<b>12.4</b> (9.30-16.4)	<b>14.0</b> (9.74-18.6)	<b>16.3</b> (10.9-22.4)	<b>18.3</b> (11.9-25.6)
<b>20-day</b>	<b>6.94</b> (5.81-8.10)	<b>7.86</b> (6.58-9.19)	<b>9.38</b> (7.82-11.0)	<b>10.6</b> (8.80-12.5)	<b>12.4</b> (9.83-15.1)	<b>13.7</b> (10.6-17.0)	<b>15.0</b> (11.2-19.3)	<b>16.5</b> (11.6-21.7)	<b>18.6</b> (12.5-25.2)	<b>20.3</b> (13.2-28.0)
<b>30-day</b>	<b>8.58</b> (7.24-9.97)	<b>9.57</b> (8.05-11.1)	<b>11.2</b> (9.37-13.0)	<b>12.5</b> (10.4-14.7)	<b>14.4</b> (11.5-17.4)	<b>15.8</b> (12.2-19.4)	<b>17.2</b> (12.8-21.8)	<b>18.6</b> (13.1-24.3)	<b>20.5</b> (13.8-27.7)	<b>22.0</b> (14.3-30.2)
<b>45-day</b>	<b>10.6</b> (9.03-12.3)	<b>11.7</b> (9.91-13.5)	<b>13.4</b> (11.3-15.6)	<b>14.9</b> (12.4-17.3)	<b>16.8</b> (13.5-20.2)	<b>18.4</b> (14.3-22.4)	<b>19.9</b> (14.8-24.9)	<b>21.3</b> (15.1-27.6)	<b>23.1</b> (15.6-30.9)	<b>24.3</b> (15.9-33.3)
<b>60-day</b>	<b>12.4</b> (10.5-14.3)	<b>13.5</b> (11.5-15.5)	<b>15.3</b> (13.0-17.7)	<b>16.8</b> (14.1-19.5)	<b>18.9</b> (15.2-22.6)	<b>20.6</b> (16.0-24.9)	<b>22.1</b> (16.5-27.5)	<b>23.5</b> (16.7-30.4)	<b>25.3</b> (17.1-33.7)	<b>26.4</b> (17.3-36.0)

<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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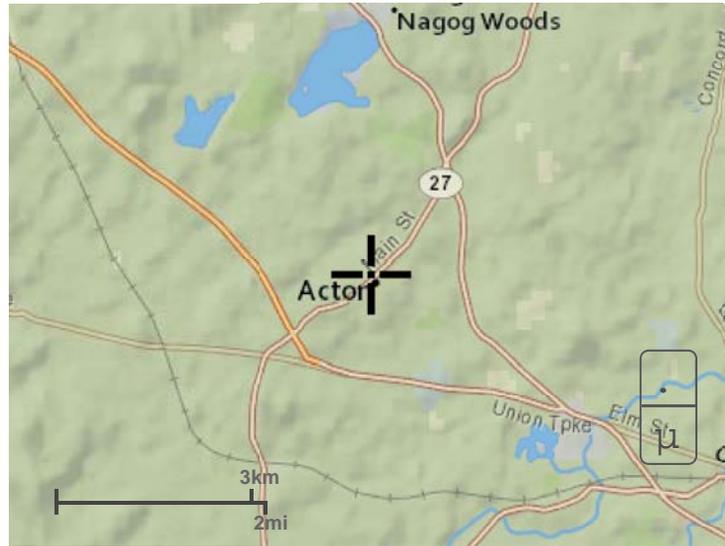
### PF graphical

PDS-based depth-duration-frequency (DDF) curves  
 Latitude: 42.4861°, Longitude: -71.4336°



### Maps & aerials

Small scale terrain



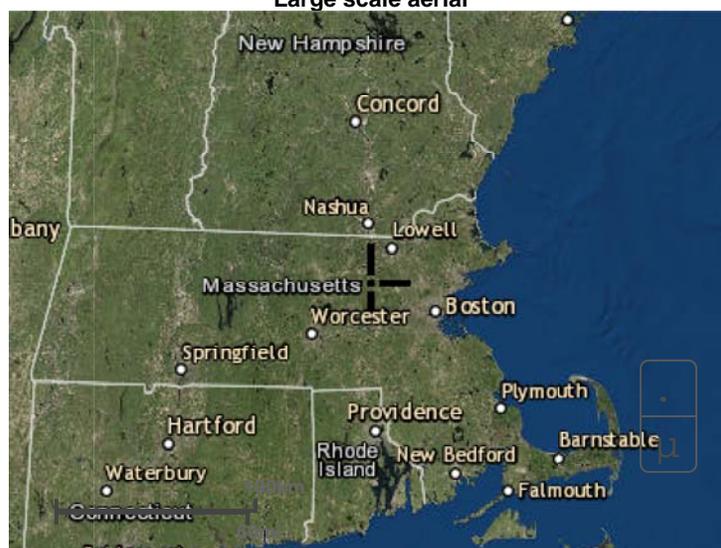
Large scale terrain



Large scale map



Large scale aerial



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[US Department of Commerce](#)  
[National Oceanic and Atmospheric Administration](#)  
[National Weather Service](#)  
[National Water Center](#)  
1325 East West Highway  
Silver Spring, MD 20910  
Questions?: [HDSC.Questions@noaa.gov](mailto:HDSC.Questions@noaa.gov)

[Disclaimer](#)

## Appendix F –Sample Stormwater System Cost Estimate

Stormwater Bond Calculation

TOWN OF ACTON ENGINEERING DEPARTMENT

Date:

Land Disturbance - Stormwater Bond Cost Estimate

DESCRIPTION	QTY	UNIT	COST/UNIT	REFERENCE	TOTAL COST
<b>ITEM 1 - EROSION CONTROL</b>					
1 EROSION CONTROL (minimum amount)	1	EACH	\$ 10,000.00		\$ 10,000.00
2 Additional Disturbed Area		ACRE	\$ 10,000.00		\$ -
<b>SUBTOTAL EROSION CONTROL (ITEM 1)</b>					<b>\$ 10,000.00</b>
<b>ITEM 2 - DRAINAGE</b>					
1 F & I - C.B. W/FRAME & GRATE		EACH			\$ -
2 F & I - D.M.H. W/FRAME & GRATE		EACH			\$ -
3 F & I - PIPE END HEADWALL		EACH			\$ -
4 F & I - FLARED END		EACH			\$ -
5 OUTLET CONTROL STRUCTURE		EACH			\$ -
6 F & I - 8" HDPE		L.F.			\$ -
7 F & I - 10" HDPE		L.F.			\$ -
8 F & I - 12" R.C.P.		L.F.			\$ -
9 F & I - 12" HDPE		L.F.			\$ -
10 ROOF DRYWELL		EACH			\$ -
11 DRAINAGE TRENCH		EACH			\$ -
12 DROP INLET		EACH			\$ -
13 UNDERGROUND DETENTION BASIN		EACH			\$ -
14 RIPRAP SWALE		L.C.Y			\$ -
15 INFILTRATION TRENCH		EACH			\$ -
16 DRAINAGE SWALE		EACH			\$ -
<b>SUBTOTAL DRAINAGE (ITEM 2)</b>					<b>\$ -</b>
<b>ITEM 3 - SURFACE</b>					
1 DRIVEWAY		S.Y.			\$ -
2 F & I - 6" PROCESSED GRAVEL		C.Y.			\$ -
3 2.5" TYPE I BITUMINOUS CONC. - Binder		S.Y.			\$ -
4 1.5" TYPE I BITUMINOUS CONC. - Top		S.Y.			\$ -
<b>SUBTOTAL SURFACE (ITEM 3)</b>					<b>\$ -</b>
SUBTOTAL					\$ 10,000.00
PLUS 10% CONTINGENCY					\$ 1,000.00
GRAND TOTAL					\$ 11,000.00
FINAL BOND AMOUNT SAY....					<b>\$ 11,000.00</b>

## Construction Project Estimator

About

Projects

**Weighted Bid Prices**

Help

Logout

✉ Email Service Desk

## Weighted Bid Prices

Criteria

**Chart**

Graph

Book

201.

**Line Item Information**

Item No:

**Item Description:**

Measurement System:

Unit:

Unit price statistics computed for Period:

201.

**CATCH BASIN****English****EA****6/2018 - 6/2019****Unit price quantity breakouts**

Min Quantity	Max Quantity	District	No. of Projects	No. of Bids	Unit Price Statistics			
					Minimum	Maximum	Mean	Median
<b>1.00 (EA)</b>	<b>22.88 (EA)</b>	All Districts	<u>40</u>	174	\$1,850.00	\$5,550.00	\$3,583.35	\$3,500.00
		1	<u>5</u>	21	\$1,550.00	\$4,650.00	\$3,097.62	\$3,000.00
		2	<u>7</u>	34	\$1,500.00	\$4,500.00	\$3,059.47	\$3,000.00
		<b>3</b>	<u>9</u>	42	\$1,775.00	\$5,325.00	<b>\$3,461.31</b>	\$3,250.00
		4	<u>8</u>	32	\$2,250.00	\$6,750.00	\$4,098.40	\$4,000.00
		5	<u>10</u>	39	\$1,950.00	\$5,850.00	\$3,884.78	\$3,900.00
		6	<u>2</u>	5	\$3,125.00	\$9,375.00	\$5,855.40	\$6,000.00
<b>22.88 (EA)</b>	<b>44.75 (EA)</b>	All Districts	<u>6</u>	30	\$1,750.00	\$5,250.00	\$3,571.07	\$3,402.00
		3	<u>3</u>	20	\$1,600.00	\$4,800.00	\$3,286.40	\$3,200.00
		4	<u>1</u>	4	\$2,125.00	\$6,375.00	\$4,075.00	\$4,250.00
		5	<u>1</u>	4	\$1,826.00	\$5,478.00	\$3,776.00	\$3,652.00
		6	<u>1</u>	4	\$3,557.00	\$10,671.00	\$7,307.00	\$7,114.00
<b>44.75 (EA)</b>	<b>66.63 (EA)</b>	All Districts	<u>4</u>	22	\$1,537.50	\$4,612.50	\$3,244.00	\$3,075.00
		2	<u>1</u>	5	\$1,362.50	\$4,087.50	\$2,708.00	\$2,650.00
		3	<u>1</u>	6	\$1,550.00	\$4,650.00	\$3,083.33	\$3,100.00
		5	<u>1</u>	4	\$1,732.00	\$5,196.00	\$3,457.00	\$3,464.00
		6	<u>1</u>	6	\$1,762.50	\$5,287.50	\$3,500.00	\$3,525.00
<b>66.63 (EA)</b>	<b>88.50 (EA)</b>	All	<u>1</u>	5	\$1,437.50	\$4,312.50	\$2,955.00	\$2,875.00

		Districts					
		2	<u>1</u>	5	\$1,437.50	\$4,312.50	\$2,955.00 \$2,875.00
<b>154.13 (EA)</b>	<b>176.00 (EA)</b>	All Districts	<u>1</u>	5	\$1,250.00	\$3,750.00	\$2,580.00 \$2,500.00
		5	<u>1</u>	5	\$1,250.00	\$3,750.00	\$2,580.00 \$2,500.00

**201.**