

CHAPTER 107 – MASHPEE NITROGEN CONTROL BYLAW

§107-1. Purpose

A Town Bylaw to conserve valuable waterways and other resources that increase our property values, that protect our unique environment vital to our economy, and that reduce the financial burden on taxpayers and property owners by regulating the outdoor application of nitrogen on turf. The regulation of nitrogen applications will reduce the overall amount of excess nitrogen entering the town's Resource Areas as defined in The Mashpee Wetlands Protection Bylaw (Chapter 172; Section 2) and Regulations. Reducing excess nitrogen helps protect and improve the water quality of Mashpee's two valuable estuaries—Waquoit Bay and Popponesset Bay—and their associated bays, coves and waterways; as well as Mashpee's many ponds and streams.

This Town Bylaw is also critical to reducing Mashpee's Total Maximum Daily Load (TMDL) of nitrogen. Mashpee is presently in violation of the Clean Water Act because of excess nitrogen entering the town's estuaries. The Cape Cod Commission has estimated that reducing nitrogen from outdoor lawn applications to coastal estuaries and embayments by fifty percent (50%) could save the taxpayers of Mashpee \$40 million dollars in sewerage and other wastewater treatment expenses. Scientifically we know this can be done without affecting the quality of turf in Mashpee.

§107-2. Applicability

This Bylaw shall apply to and regulate any and all applications of nitrogen through fertilizer on managed turf areas within the Town of Mashpee.

§107-3. Definitions

"Agriculture" includes farming in all its branches, generally as the cultivation and tillage of the soil, dairying, the production, cultivation, growing and harvesting of any agricultural, floricultural, viticultural or horticultural commodities, and shellfishing, including preparations and delivery to storage or to market or to carriers for transportation to market.

"Best Management Practices" (BMP), means a sequence of activities designed to limit a nonpoint pollution source. For the purposes of this By-law, BMP means the most current edition of "Best Management Practices for Soil and Nutrient Management in Turf Systems," prepared by University of Massachusetts Extension, Center for Agriculture, Turf Program.

"Certified Fertilizer Applicator" means a person certified by the Cape Cod Commission, Cape Cod Cooperative Extension, or town of Mashpee departments, or any combination thereof, to apply fertilizer and manage turf in conformance with the BMP.

"Compost" or "Organic Compost" means the biologically stable, humus-like material derived from composting or the aerobic, thermophilic decomposition of organic matter.

"Fertilizer" means a substance that enriches the soil with elements essential for plant growth, such as nitrogen, phosphorus, potassium or other substances; fertilizer does not include those

nutrients that are normally excluded from fertilizer such as chemicals that are part of horticultural gypsum, dolomite, limestone, lime, Jersey greensand, grass clippings, or compost topdressing; compost tea and liquid seaweed, as defined and applied in accordance with standards in Section 5(f), is also excluded from the definition of fertilizer.

“Heavy rain” is a rainfall greater than 0.25 inches per hour during the next 24 hour period or a rainfall of greater than one inch total in the next 24 hour period.

“Impervious surface” means any structure, surface, or improvement that reduces or prevents absorption of storm water into land, and includes concrete, asphalt, paver blocks, gravel, decks, patios, elevated structures, and other similar structures, surfaces, or improvements.

“MDAR Fertilizer Regulations” means the most recent regulations of the “Plant Nutrient Application Requirements for Agricultural Land and Land Not Used for Agricultural Purposes”, developed by the Massachusetts Department of Agricultural Resources (MDAR) pursuant to its authority under G.L. c. 128, Sections 2(k) and Section 65(A), as amended by St. 2012, c. 262. 330 CMR 31.00. The application of phosphorus in fertilizer is regulated, for the purposes of this Bylaw, by the MDAR Fertilizer Regulations.

“Naturally Vegetated Buffer Zone” means areas of indigenous vegetation. Plantings may be considered as naturally vegetated if they meet the standards of the Mashpee Conservation Commission and include a low-growing herbaceous layer of vegetation, which includes grassland, heathland or meadow plantings.

“Nitrogen” means an element essential to plant growth. For the purposes of the Bylaw, nitrogen may be available as slow-release, controlled-release, timed-release, slowly available, or water insoluble nitrogen, which means nitrogen in a form that delays its availability for plant uptake and use after application and is not rapidly available to turf and other plants; and/or quick-release, water-soluble nitrogen which means nitrogen in a form that does not delay its availability for turf and other plant uptake and is rapidly available for turf and other plant uptake and use after application.

“Saturated ground” means soil soaked with moisture so that it cannot absorb any more liquid.

“Turf, Lawn, or Sod” means any non-crop land area that is covered by any grass species, excluding meadows, grasslands, flower or vegetable gardens, pasture, hay land, trees, shrubs, turf grown on turf farms or any form of agricultural production or use.

§107-4. Performance Standards

All application of nitrogen to turf shall comply with the following standards:

- A. The application of nitrogen is prohibited between October 30th and April 14th unless specifically permitted by the Town Board of Health, the Town Conservation Commission or the Board of Selectmen, as set out below. Based on early spring or fall weather conditions, soil temperature and degree of turf emergence from dormancy, or other relevant condition, and using the guidelines of the BMP, the Town Board of Health, the Town Conservation Commission, or the Board of Selectmen may permit earlier or later application of nitrogen, in which case such extended period shall be announced by

notice or publication. A working group may be established by the Board of Selectmen to assist in undertaking the duties referenced in this paragraph.

- B. No person shall cause nitrogen from any fertilizer application to apply to, or otherwise be deposited on any impervious surface including parking lot, driveway, roadway, sidewalk, frozen soil or ice. Any fertilizer applied, spilled, and/or deposited on any impervious surface, either intentionally or accidentally, must be immediately and completely removed and contained and either legally applied to turf or any other legal site or returned to an appropriate container.
- C. No person shall apply nitrogen 24 hours before or during a heavy rain event or apply nitrogen onto saturated ground. An application of nitrogen should be watered in with no more than one-quarter inch (0.25 inch) of irrigation or natural rain within the next 24 hour period.
- D. The application of nitrogen is prohibited within 100' of the following Resource Areas, as defined in The Mashpee Wetlands Protection Bylaw, Section 2 and Regulations: any freshwater or coastal wetlands; marshes; wet meadows; bogs; swamps; vernal pools; lakes; ponds; rivers, streams; creeks; and estuaries. Notwithstanding the above, where there is a 50' naturally vegetated buffer zone to any freshwater or coastal wetlands; marshes; wet meadows; bogs; swamps; vernal pools; ponds; lakes; and estuaries, an application of nitrogen is prohibited within 50' of that protected Resource Area. An application of nitrogen is prohibited within 100' of any rivers; streams; and creeks, as defined in the Rivers Protection Act, Chapter 258 of the Acts of 1996. There are alternative methods of enhancing turf within these prohibited areas without application of nitrogen; see Sections 5(e) and 5(f). A Certified Fertilizer Applicator may apply to the Town Conservation Commission for approval to authorize limited applications of nitrogen on turf within these prohibited areas. A working group may be established by the Town Conservation Commission to assist in undertaking the duties referenced in this paragraph.

§107-5. Exemptions

The following activities shall be exempt from Section 4:

- A. Application of nitrogen for agriculture and horticulture uses; these applications are regulated by the MDAR Fertilizer Regulations.
- B. Application of fertilizer to golf courses, except that any application of nitrogen on greens or fairways within Resource Areas referenced in Section 4(d) shall comply with the Recommendations set forth in Section 6, and shall use 85% or higher slow-release, water-insoluble nitrogen, in organic or inorganic form applied with drop spreaders or spreaders with side guards to prevent application onto Resource Areas and other non-turf areas. Golf courses with liners installed adjacent to ponds and other Resource Areas to prevent leaching of nitrogen are exempt from Section 4(d) in those areas where such liners are installed.

- C. Application of nitrogen to gardens, including vegetable and flower, trees, shrubs and indoor applications including greenhouses; these applications are regulated by the MDAR Fertilizer Regulations,
- D. Application of nitrogen for the establishment of new vegetation in the first growing season, or repairing of turf in the first growing season, after substantial damage, with the restrictions described in Section 5 (b) for applications in the buffer zone of regulated Resource Areas referenced in Section 4(d).
- E. Application of compost or other similar materials that are primarily organic in nature and are applied to improve the physical condition of the soil,
- F. Compost tea and liquid seaweed applications, including formulas with less than 5% total nitrogen, if and only if applied in a manner that follows label recommendations and/or standard industry recommendations for a foliar application to the point of leaf runoff. No root drenching of compost tea or liquid seaweed with nitrogen is permitted within the buffer zone of regulated Resource Areas referenced in Section 4(d).

§107-6. Recommendations

The Town of Mashpee strongly recommends that nitrogen should be applied to turf and other plants at the lowest rate necessary, as is described in the BMP. Any single application of nitrogen should not exceed 0.5 pounds of nitrogen per 1000 square feet, and the annual aggregate total application of nitrogen should not exceed 1.0 pound per 1000 square feet. The application of any nitrogen should be of a natural-organic, slow-release, water-insoluble form.

§107-7. Enforcement Authority

The enforcement authority for Performance Standards 4(a-c) shall be the Agents of the Board of Health or his or her designees. Enforcement of the provisions in Section 4(d) shall be the Agents of the Conservation Commission or his or her designees.

The fine for the first offense shall be no greater than \$150. A warning in lieu of a fine or other enforcement action for the first offense can be issued at the discretion of the enforcement authority. The fine for a second offense shall be \$250. The fine for each subsequent offense shall be \$300.

§107-8. Severability Clause

Should any Section, part or provision of this by-law be deemed invalid or unconstitutional, such decision shall not affect the validity of the remaining terms of this by-law as a whole or any part thereof, other than the Section, part or provision held invalid or unconstitutional.

Town of Falmouth, MA
Tuesday, February 17, 2015

Chapter 237. NITROGEN CONTROL

[HISTORY: Adopted by the Town of Falmouth Annual Fall Town Meeting 11-13-2012, Art. 7, approved 7-12-2013. Amendments noted where applicable.]

GENERAL REFERENCES

Watershed protection — See Ch. 227.

Wetlands protection — See Ch. 235.

Zoning — See Ch. 240.

Wetlands Regulations — See Ch. FWR.

§ 237-1. Purpose.

A Town bylaw to conserve resources and protect our environment by regulating the outdoor application of nitrogen in order to reduce the overall amount of excess nitrogen entering the Town's Resource Areas as defined in the Wetlands Protection Bylaw (Chapter 235; Section 2) and regulations. Reducing excess nitrogen helps protect and improve the water quality of Falmouth's valuable estuaries.

§ 237-2. Applicability.

This bylaw shall apply to and regulate any and all applications of nitrogen through fertilizer within the Town of Falmouth.

§ 237-3. Definitions.

AGRICULTURE

Includes farming in all its branches, generally as the cultivation and tillage of the soil, dairying, the production, cultivation, growing and harvesting of any agricultural, floricultural, viticultural or horticultural commodities, and shell fishing, including preparations and delivery to storage or to market or to carriers for transportation to market.

FERTILIZER

A substance that enriches the soil with elements essential for plant growth, such as nitrogen, phosphorus, potassium or other substances; fertilizer does not include those nutrients that are normally excluded from fertilizer such as chemicals that are part of dolomite, limestone, or lime.

IMPERVIOUS SURFACE

Means a surface that has been compacted or covered with a layer of material so that it is highly resistant to infiltration by water.

NITROGEN

Means an element essential to plant growth. For the purposes of the bylaw, nitrogen may be available as slow-release, controlled-release, timed-release, slowly available, or water insoluble

nitrogen, which means nitrogen in a form that delays its availability for plant uptake and use after application and is not rapidly available to turf and other plants; and/or quick-release, water-soluble nitrogen which means nitrogen in a form that does not delay its availability for turf and other plant uptake and is rapidly available for turf and other plant uptake and use after application.

TURF

Means grass-covered soil held together by the roots of the grass, also known as "sod" or "lawn."

§ 237-4. Performance standards.

All application of nitrogen shall comply with the following standards:

- A. The application of nitrogen is prohibited between October 16 and April 14 unless specifically designated by the Town Department of Natural Resources or the Board of Selectmen.
- B. No person shall cause nitrogen to apply to, or otherwise be deposited to any impervious surface including parking lot, driveway, roadway, sidewalk or ice. Any fertilizer applied, spilled, and/or deposited on any impervious surface, either intentionally or accidentally, must be immediately and completely removed and contained and either legally applied to turf or any other legal site or returned to an appropriate container.
- C. No person shall apply nitrogen directly before or during a heavy rain event.
- D. The application of nitrogen is prohibited within 100 feet of Resource Areas as defined in Falmouth's Wetlands Regulations FWR 10.02(1)(a) through (d).

§ 237-5. Exemptions.

The following activities shall be exempt from § 237-4:

- A. Application of nitrogen for agriculture and horticulture uses.
- B. Application of fertilizer to golf courses, except that any application of nitrogen on greens or fairways within Resource Areas referenced in § 237-4D shall comply with the recommendations set forth in § 237-6, and shall use 85% or higher slow-release, water-insoluble nitrogen, in organic or inorganic form.
- C. Application of nitrogen to gardens, including vegetable and flower, trees, shrubs and indoor applications including greenhouses.
- D. Application of nitrogen for the establishment of new vegetation in the first growing season, or repairing of turf in the first growing season, after substantial damage.
- E. Yard waste compost or other similar materials that are primarily organic in nature and are applied to improve the physical condition of the soil.

§ 237-6. Recommendations.

The Town of Falmouth strongly recommends that nitrogen should be applied to turf and other plants at the lowest rate necessary. Any single application of nitrogen should not exceed 0.5 pounds of nitrogen per 1,000 square feet, and the annual aggregate total application of nitrogen should not exceed 1.0 pounds per 1,000 square feet. The application of any nitrogen should be of an organic, slow-release, water-insoluble form.

§ 237-7. Enforcement authority.

The enforcement authority shall be the Director of Natural Resources or his designees.

§ 237-8. Severability clause.

Should any section, part or provision of this bylaw be deemed invalid or unconstitutional, such decision shall not affect the validity of the remaining terms of this bylaw as a whole or any part thereof, other than the section, part or provision held invalid or unconstitutional.

§174-27.2. Stormwater Management

History: Added 3-5-1999, ATM, Article 45, approved by Attorney General 7-29-1999.

- A. For any new residential or non-residential development requiring either subdivision approval, a special permit, plan review under the provisions of §174-24.B., or a building permit for a building over one thousand (1000) square feet in area a system of stormwater management and artificial recharge of precipitation shall be required which is designed to achieve the following purposes: prevent untreated discharges to wetlands and surface waters, preserve hydrologic conditions that closely resemble pre-development conditions, reduce or prevent flooding by managing the peak discharges and volumes of runoff, minimize erosion and sedimentation, not result in significant degradation of groundwater, reduce suspended solids, nitrogen, volatile organics and other pollutants to improve water quality and provide increased protection of sensitive natural resources.

History: Amended 10-4-1999, ATM, Article 32, approved by Attorney General 1-11-2000.

- B. These standards may be met using the following or similar best management practices:

1. For new single or two-family residences, recharge shall be attained through site design that incorporates natural drainage patterns and vegetation in order to maintain pre-development stormwater patterns and water quality to the greatest extent possible. Stormwater runoff from rooftops, driveways and other impervious surfaces shall be routed through vegetated water quality swales, as sheet flow over lawn areas or to constructed stormwater wetlands, sand filters, organic filters and/or similar systems capable of removing nitrogen from stormwater.

History: Amended 10-4-1999, ATM, Article 32, approved by Attorney General 1-11-2000.

2. For new subdivision roadways or for lots occupied or proposed to be occupied by uses other than single or two-family homes, a stormwater management plan which;

- (a) utilizes site planning and building techniques, such as minimizing impervious surfaces and disturbance of existing natural areas, pervious reserve or overflow parking areas, multi-level buildings, parking structures, "green roofs" and storage and re-use of roof runoff, to minimize runoff volumes and the level treatment required to reduce contaminants,

- (b) minimizes erosion and runoff from disturbed areas during construction and

- (c) provides for artificial recharge or precipitation to groundwater through site design that incorporates natural drainage patterns and vegetation and through the use of constructed (stormwater) wetlands, bioretention facilities, vegetated filter strips, rain gardens, wet (retention) ponds, water quality swales, organic filters or similar-site-appropriate current best management practices capable of removing significant amounts of nitrogen and other contaminants from stormwater. Said stormwater treatment facilities shall be designed and sized to retain up to the first inch of rainfall from their catchment area within the area designed for nitrogen treatment, before any overflow to subsurface leaching facilities and otherwise meet the Stormwater Management Standards and technical guidance contained in the Massachusetts Department of Environmental

Protection's *Stormwater Management Handbook*, Volumes 1 and 2, dated March 1997, for the type of use proposed and the soil types present on the site. Such runoff shall not be discharged directly to rivers, streams, other surface water bodies, wetlands or vernal pools. Except for overflow from stormwater treatment facilities as described above and when there are no other feasible alternatives, dry wells shall be prohibited. Except when used for roof runoff from non-galvanized roofs and for runoff from minor residential streets, all such wetlands, ponds, swales or other infiltration facilities shall be preceded by oil, grease and sediment traps or forebays or other best management practices to facilitate control of hazardous materials spills and removal of contamination and to avoid sedimentation of treatment and leaching facilities. All such artificial recharge systems shall be maintained in full working order by the owner(s) under the provisions of an operations and maintenance plan approved by the permitting authority to assure that systems function as designed. Infiltration systems shall be located so that no part of any leaching system is located less than one hundred (100) feet from drinking water wells. Any infiltration basins or trenches shall be constructed with a three (3) foot minimum separation between the bottom of the leaching system and maximum groundwater elevation.

History: Amended 10-4-1999, ATM, Article 32, approved by Attorney General 1-11-2000.

History: Amended 10-16-2006, ATM, Article 24, approved by Attorney General 2-13-2007.

- C. The building inspector shall require the submission of sufficient plans and specifications to demonstrate the location and nature of proposed stormwater facilities for development under subsection B.(1) and shall require their implementation. For development under subsection B.(2), the permitting authority shall require the submission of sufficient plans and specifications to demonstrate the location, nature, operation and effectiveness of the proposed stormwater management facilities and practices and shall require their implementation and maintenance, including provisions for deed restrictions and other implementing provisions, as a condition of approval of the proposed development. No permit may be approved for a development unless the permitting authority determines in writing that the proposed system of stormwater management and artificial recharge will achieve the purposes described in subsection A.

History: Amended 5-3-1999 ATM, Article 45, approved by Attorney General 7-29-1999,

History: Amended 10-4-1999, ATM, Article 32, approved by Attorney General 1-11-2000.

ARTICLE VII - Land Space Requirements

§174-28. Conformance Required

- A. No building or structure shall be built, nor shall any existing building or structure be enlarged or altered except in conformance with the regulations of this Zoning Bylaw as to lot coverage, lot area, land area per dwelling unit, lot width, front, side and rear yards and maximum height of structures in the several districts as set forth below except as may otherwise be provided elsewhere in this Zoning Bylaw.
- B. Prior to proceeding with any new construction above the foundation, a registered land surveyor shall certify to the Building Inspector that the structure has been located on the lot in compliance with all land space requirements.

Municipality/Organization: Town of Mashpee

EPA NPDES Permit Number: MAR041129

MassDEP Transmittal Number: W-035197

Annual Report Number Year 10
& Reporting Period: April 1, 2012 – March 31, 2013

**NPDES PII Small MS4 General Permit
Annual Report
(Due: May 1, 2013)**

Part I. General Information

Contact Person: Catherine Laurent Title: DPW Director

Telephone #: 508-539-1420 Email: clarent@mashpeema.gov

Mailing Address: 350 Meetinghouse Road, Mashpee, MA 02649

Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Joyce M. Mason

Printed Name: Joyce M. Mason

Title: Town Manager

Date: April 23, 2013

Part II. Self-Assessment

The Town of Mashpee has completed the required self-assessment and has determined that our municipality is in compliance with all permit conditions, except for the following provisions:

Part 1.B.2.(k)

The Town is working with the Mashpee Wampanoag Tribe on a water quality monitoring program for Santuit Pond. Santuit Pond is listed as an impaired water under Section 303(d) of the Clean Water Act. The Town hired AECOM in 2009 to complete a study on the causes of the deteriorated water quality in Santuit Pond. A final report was issued in July 2010. In March 2012, 6 solar-powered artificial water circulators were installed in the pond to decrease the anaerobic conditions that contributes to the release of phosphorus and the formation of algal blooms. Improvements in water quality have been monitored over the year. Since their installation, water clarity in the pond, measured by Secchi Disk, has improved by over 50%.

Through the Town's Shellfish Department, limited water quality monitoring is being completed. The monitoring is relative to shellfish beds and fish spawning areas, and therefore does not specifically identify any discharges that may contribute to not meeting water quality standards. Until a monitoring program is developed and implemented that can identify these discharges, the Town will continue to eliminate direct discharge from roadways, with those roadways targeted where discharge is to a surface water. In October 2012, the Town voted to accept as public ways several neighborhood roads adjacent to Santuit Pond and John's Pond. As part of this process, new drainage is being installed to capture and treat storm water runoff, preventing it from entering the ponds. The Town is also completing a road project on Great Neck Road North, again capturing and treating runoff that previously may have been discharged to the Mashpee River.

Part 1.B.2.(l)

See above.

Part 1.C.

See above.

Part 1.D.

See above.

Part III. Summary of Minimum Control Measures

1. Public Education and Outreach

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 11
PE1 Revised	Zone II Information	Public Works; EOC; Water District	Distribute information annually on protection of drinking water	Environmental Oversight Committee developed “Mashpee Blue Book”, a guide for home owners on drinking water protection, low impact storm water practices, etc. The book was mailed to all Mashpee property owners in 2011. The book is still available at the Town’s library.	
PE2 Revised	Storm Water Information	Public Works; County; EOC	Develop and distribute information annually on impacts of storm water on water bodies and groundwater	See “Mashpee Blue Book” above. Mashpee Environmental Coalition (MEC) distributed storm water information through their quarterly newsletter.	Continue to work with MEC.
PE3	Storm Drain Stenciling	Public Works	Stencil drains in target areas	None to date. No longer offered through County.	No action proposed.
PP4	Storm Water School Program	Public Works; School Dept; County	Develop program for presentation to Grades 3-5	Cape Cod Groundwater Guardian Team held water festival for Grade 5 students.	Work with School Department to schedule program for school-wide assembly.

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) -- Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities -- Permit Year 11
PP1 Revised	Community Cleanups	Public Works, Conservation	Continue to organize annual cleanups of Town properties	Conducted clean ups of several Town properties (Noisy Hole Road, Mashpee Wildlife Refuge) Conservation Department to continue Land Steward Program	Continue conducting and working with others on clean ups. Continue Land Steward program.
PP2 Revised	Reciprocal HHP Collections	Public Works	Continue to provide HHP collections	Held and funded with towns of Sandwich, Falmouth, and Bourne four collections of HHP from residents. Residents able to participate at no direct cost.	Continue collections. Work to increase participation through increased publicity.
PP3 Revised	Permanent HHP Collections	Public Works	Continue to provide permanent collection of certain products at Transfer Station	Collected used oil (2,295 gallons), spent antifreeze (110 gallons), CRTs (47 tons), car batteries (98 total), rechargeable batteries (14 boxes), and mercury products (including over 19,000 LF of bulbs) from residents.	Continue collection.
PP4	Pooper Scoopers	Animal Control	Expand provision of "pooper scoopers" on Town properties beginning in '03	Maintained existing pooper scoopers.	Identify other areas for provision of pooper scoopers and install.
PP5 Revised	Fertilizer/Pesticide Use	Public Works; EOC	Develop and distribute information on effects of fertilizer and pesticides use on water	Use of slow release nitrogen, zero phosphorus fertilizers on Town properties. Environmental Oversight Committee reviewing recommendations for use of low phosphorus fertilizers. No action.	Develop Integrated Pest Management program for Town properties. Work with EOC on recommendations.
PP6	Regulatory Board Education	Public Works; County	Develop educational program for regulatory boards/commissions		Schedule training with DEP Circuit Rider program.

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 11
IDD1 Revised	Outfall Identification	Public Works; GIS	Map drainage and outfall locations	Updated GIS layer as necessary NOTE: Town of Mashpee does not have a piped storm water system. None to date.	Update data layer as necessary.
IDD2 Revised	Prohibition of Illicit Discharge	Public Works	Amend General Bylaw to explicitly prohibit illicit discharge		Develop amendment for Town Meeting to prohibit discharge of other substances as well as prohibition against dumping into road drainage systems. Continue to install drainage during planned road construction projects.
IDD3 Revised	Reduction of Direct Discharge	Public Works	Install drainage system to eliminate direct discharge	Completed Mashpee Neck Road and Great Neck Road North storm water improvements. Storm water improvements in Timberland Shores, Santuit Woods, and John's Pond neighborhoods underway.	
IDD4	Water Monitoring Program	Public Works; Shellfish	Develop volunteer monitoring program to test and identify pollutants and determine potential sources in '06 and '07	Town and Mashpee Wampanoag Tribe monitoring Santuit Pond. The Shellfish Department continued limited testing of shellfish areas. NOTE: The Town does not have a laboratory facility.	Collect information on similar programs in other towns. Work with Mashpee Environmental Coalition and the Mashpee High School on developing a pilot program.
IDD5	Identification of Illicit Discharge	Public Works; Conservation	Identify illicit discharges, contact responsible party, and work to eliminate	Outfalls mapped (IDD1)	Monitor outfalls for illicit discharge.

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 11
CSR1 Revised	Review and Amendment of Existing Regulations	Public Works; Planning; Conservation	Review regulations for existing controls and amend as necessary	Erosion and Sedimentation Control Bylaw in effect (approved at Fall 2005 STM).	Work with Conservation Agent to review and amend Wetlands regulations if necessary.
CSR2 Revised	Inspection Program	Public Works; Planning; Conservation; Building	Develop inspection program to ensure compliance with required controls	None to date.	Begin drafting inspection program for inclusion in applicable regulations as developed by CSR1.

5. Post-Construction Stormwater Management in New Development and Redevelopment

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 11
PCR1 Revised	Review of Existing Regulations	Public Works; Planning; Conservation	Review regulations for existing controls and amend as necessary	See CSR1 above.	See CSR1 above.

6. Pollution Prevention and Good Housekeeping in Municipal Operations

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 11
MGH1 Revised	Street Sweeping	Public Works	Continue to sweep Town roads annually	Sweeping of 76± miles of road (all Town roads) scheduled in May 2013 after winter sanding.	Continue sweeping program.
MGH2 Revised	Catch Basin Cleaning	Public Works	Continue to clean catch basins annually	Cleaning of approximately 2,000 catch basins in Fall 2012 and Spring 2013 (some catch basins cleaned each time).	Continue semi-annual catch basin cleaning program.
MGH3 Revised	Spill Training	Public Works	Provide annual training to employees	Provided annual training to DPW employees on spill prevention and spill clean up	Continue training.
MGH4 Revised	Minimization of Road Salt Use	Public Works	Continue to minimize application of salt on roads and parking lots	Used 2:1 ratio of sand to salt during winter ice and snow operations.	Continue with low salt use.

7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA) <<if applicable>>

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 11
IDD3 Revised	Water Monitoring Program	Public Works; Shellfish		See #3 above	
IDD2 Revised	Reduction of Direct Discharge	Public Works		See #3 above	

TMDL1	Development and Implementation of BMPs	Public Works; Shellfish	Develop BMPs to address the other sources of pollutants exceeding the TMDLs for a water body in '07	None to date.	None directly proposed. Activities for IDD4 and IDD5 will provide base of information for this BMP in future years.
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7b. WLA Assessment

A WLA has not yet been conducted.

Part IV. Summary of Information Collected and Analyzed

No information collected.

Part V. Program Outputs & Accomplishments (OPTIONAL)

(Since beginning of permit coverage unless specified otherwise by a **, which indicates response is for period covering April 1, 2012 through March 31, 2013)

Programmatic

	(Preferred Units)	Response
Stormwater management position created/staffed	(y/n)	nn
Annual program budget/expenditures **	(\$)	\$50,000
Total program expenditures since beginning of permit coverage	(\$)	\$350,000
Funding mechanism(s) (General Fund, Enterprise, Utility, etc)		General Fund

Education, Involvement, and Training

Estimated number of property owners reached by education program(s)	(# or %)	100%
Stormwater management committee established	(y/n)	n
Stream teams established or supported	(# or y/n)	n
Shoreline clean-up participation or quantity of shoreline miles cleaned **	(y/n or mi.)	y
Shoreline cleaned since beginning of permit coverage	(mi.)	unknown
Household Hazardous Waste Collection Days		

▪ days sponsored **	(#)	4
▪ community participation **	(# or %)	192 households
▪ material collected **	(tons or gal)	Unknown
School curricula implemented	(y/n)	N

Legal/Regulatory

	In Place Prior to Phase II	Reviewing Existing Authorities	Drafted	Draft in Review	Adopted
Regulatory Mechanism Status (indicate with "X")					
▪ Illicit Discharge Detection & Elimination		X			
▪ Erosion & Sediment Control					X
▪ Post-Development Stormwater Management		X			
Accompanying Regulation Status (indicate with "X")					
▪ Illicit Discharge Detection & Elimination		X			
▪ Erosion & Sediment Control					X
▪ Post-Development Stormwater Management		X			

Mapping and Illicit Discharges

	(Preferred Units)	Response
Outfall mapping complete	(%)	90
Estimated or actual number of outfalls	(#)	
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	90
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	90
Outfalls inspected/screened **	(# or %)	
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	
Illicit discharges identified **	(#)	0

Illicit discharges identified (Since beginning of permit coverage)	(#)	0
Illicit connections removed **	(#); and (est. gpd)	
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	
% of population on sewer	(%)	
% of population on septic systems	(%)	

Construction

	(Preferred Units)	Response
Number of construction starts (>1-acre) **	(#)	1
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)	100
Site inspections completed **	(# or %)	4
Tickets/Stop work orders issued **	(# or %)	0
Fines collected **	(# and \$)	0
Complaints/concerns received from public **	(#)	0

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	
Site inspections (for proper BMP installation & operation) completed **	(# or %)	
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	
Low-impact development (LID) practices permitted and encouraged	(y/n)	

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets) **	(times/yr)	1
Average frequency of catch basin cleaning (commercial/arterial or other critical streets) **	(times/yr)	2
Qty of structures cleaned **	(#)	2,000

Qty. of storm drain cleaned **	(%, LF or mi.)	na
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	landfill

Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	\$25,000
• Hourly or per basin contract rate **	(\$/hr or \$ per basin)	\$12.50/basin
• Disposal cost**	(\$)	
Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	3 (contracted)
• Vacuum truck(s) owned/leased	(#)	0
• Vacuum trucks specified in contracts	(y/n)	N
• % Structures cleaned with clam shells **	(%)	100
• % Structures cleaned with vector **	(%)	

	(Preferred Units)	Response
Average frequency of street sweeping (non-commercial/non-arterial streets) **	(times/yr)	1
Average frequency of street sweeping (commercial/arterial or other critical streets) **	(times/yr)	1
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	BUD
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	\$15,000
• Hourly or lane mile contract rate **	(\$/hr. or in mi.)	\$89/hr
• Disposal cost**	(\$)	Na
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	1 (owned) 2 (contracted)
• Vacuum street sweepers owned/leased	(#)	0
• Vacuum street sweepers specified in contracts	(y/n)	N
• % Roads swept with rotary brush sweepers **	%	100

• % Roads swept with vacuum sweepers **	%	0
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Reduction (since beginning of permit coverage) in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers	(lbs. or %)	50
▪ Herbicides	(lbs. or %)	50
▪ Pesticides	(lbs. or %)	Na
Integrated Pest Management (IPM) Practices Implemented	(y/n)	

	(Preferred Units)	Response
Average Ratio of Anti-/De-Icing products used **	% NaCl	33
(also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)	% CaCl ₂	
	% MgCl ₂	
	% CMA	
	% Kac	
	% KCl	
	% Sand	67
Pre-wetting techniques utilized **	(y/n or %)	
Manual control spreaders used **	(y/n or %)	
Zero-velocity spreaders used **	(y/n or %)	
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/ln mi. or %)	No change
Estimated net reduction or increase in typical year sand application rate **	(±lbs/ln mi. or %)	No change
% of salt/chemical pile(s) covered in storage shed(s)	(%)	100
Storage shed(s) in design or under construction	(y/n or #)	N
100% of salt/chemical pile(s) covered in storage shed(s) by May 2008	(y/n)	100

Water Supply Protection

Storm water outfalls to public water supplies eliminated or relocated	# or y/n
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n
<ul style="list-style-type: none"> • Treatment units induce infiltration within 500-feet of a wellhead protection area 	# or y/n