

**TOWN OF UXBRIDGE**  
21 SOUTH MAIN STREET  
UXBRIDGE, MASSACHUSETTS 01569  
508-278-8616 ♦ Fax 508-278-3179

Do Not Write in this Space

**Posted by  
Uxbridge  
Town Clerk**

AUG 28 '12 PM03:06

## **STORMWATER COMMITTEE MEETING MINUTES**

**Date of Meeting:** August 16, 2011 **Time:** 2:00 p.m.  
**Place of Meeting:** DPW Office, 147 Hecla Street, Uxbridge, MA  
**List of Attendees:** Benn Sherman, Michael Potaski, James Smith, Stephen O'Connell, Joseph Leonardo  
**Others in Attendance:** None

### **I. CALL TO ORDER**

The meeting was called to order at 2:00 p.m.

### **II. OLD BUSINESS**

### **III. NEW BUSINESS**

#### **A. Discuss Charge and review bylaw materials**

Benn Sherman introduced all the new members of the committee. A discussion began regarding the history of the Stormwater Committee. Mr. Sherman distributed some of the available committee historical information.

The committee reviewed the most recent draft (2008) of the bylaw. **Action:** Committee to obtain samples of surrounding communities for review.

### **IV. ADJOURNMENT**

**Motion by Stephen O'Connell to adjourn the meeting at 4:00 p.m.. Seconded by Michael Potaski, the motion carried unanimously.**

Next Stormwater Committee Meeting is scheduled for **September 6, 2011, at 2:00 p.m.** at the DPW Office at 147 Hecla Street.

*Minutes respectfully submitted by Benn Sherman*

*Minutes approved by Stormwater Committee*

Chair, Benn Sherman

Stephen O'Connell

Joseph Leonardo

Michael Potaski

James Smith

01/09/2012

Date Approved

1000  
1000  
1000

March 3, 2005

To: Paul Knapik, Con Com; Rachel Landry, Cons. Agent; John Morowski, Planning Board; Sue Smith, Board of Health; Floyd Forman, Planner; Dan Stefanilo, School Supt.; Harry Romasco, Board of Selectmen; Nick Gazerro, Building Inspector

Cc: Allan Klepper, Town Manager; Larry Bombara, Superintendent

From: Irving Priest, Assistant Superintendent

Re: Ad Hoc Path-finding committee for Stormwater Phase II Action Plan

The charge has fallen to me to proceed under the Stormwater Phase II Plan for the Town of Uxbridge. I am scheduling a meeting for Wednesday, March 16<sup>th</sup> at 10:00 am in the selectmen's meeting room. I would like to take less than an hour of your time. If you cannot make it, please have someone else cover for you.

The Town has specific charges under the approved plan. The initial meeting brought forth several ideas, as previously mentioned by Allan, as follows:

- The committee should be ad hoc and we should advertise for but not count on citizen participation. All members should be put into an email group.
- A pamphlet should be prepared to be given out at all potential trigger points in any developers path – Bldg., Health, Planning, DPW, and on the Town website.
- The Building Department should be the primary gatekeeper.
- Paul Knapik, via his professional activity, will provide some plan templates for potential consideration by those qualifying developers (over 1 acre).
- A major question is how to fill the gap between those developers that fall between the Con Com and Planning Board.
- The question of adequate staffing was opened. In the long run, this activity may evolve as Larry Bombara has opined, into another DPW Dept, but that is not tomorrow. The challenge is to place enough staff in the right place to make sure the program is moving forward properly without wasting resources.
- Promulgation of policies and procedures may be a more appropriate approach than passage of bylaws, as was done in Oxford. A minimal overarching bylaw may be considered that would reference the EPA mandate; authorize the agencies in Town to promulgate policies and procedures; designate fees and fines authority; and designate the enforcing authority. A search for models should be pursued.
- Preliminary consideration was given to the role of agency consultants for professional review of the required plans, at least until such time as that capability could be home grown.

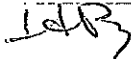
At the outset, I don't see our tasks as being too time consuming, as long as we know what each individual's role should be. Bring your questions and comments. See you then.



December 10, 2004

To: L. Bombara

From: I. Priest



Re: Storm Water Phase II Compliance

- First and foremost, the Town Manager needs to create a Storm Water Committee.
  - In its creation, he needs to set the charge/duty of the committee, which could include:
    - The authority to administer the plan
    - Be in place to delegate duties
    - Set, at minimum, quarterly meetings
  - Membership might include:
    - DPW
    - Conservation Commission
    - BOH
    - Interested residents who regularly attend Conservation Commission or BOH meetings

Other measurable goals, which must be met before July 1<sup>st</sup> are, in order of difficulty:

- Cooperation must be obtained with the school system to:
  - Find a target group of 3 grades to
  - Instruct teachers to teach about and hand out information on which ever storm water topic is chosen for the year
  - Or, at the least, obtain bulletin board space for storm water posters and available handouts
- Choose the annual theme or topic (such as lawn & garden activities, water conservation practices, proper disposal of hazardous wastes, pet waste management, trash management, etc.) – this same theme could be used in schools (above)
  - Download or create and print a brochure
  - Create hotline phone number to be on brochure and keep log of report calls
  - Use the brochure as an insert in spring water bill or otherwise distribute to 1/3 of the urban area
  - Have brochure available at Town Hall, Library, DPW, Senior Center
  - Use brochure or similar language on cable TV and as newspaper press release
- Coordinate with scout groups to:
  - Obtain catch basin stencil
  - Designate urban area to stencil minimum 30 catch basins
  - Get press involved
- Complete the inspections and inventory of existing facilities and finish GIS

- Conduct an attitude survey
  - BETA will create questions
  - Possible volunteer survey by phone
  - Possible handout at entrance to a Town Meeting

---

- Find and adopt stream cleanup guidelines
- Check with BOH that they track the results of their Household Hazardous Waste Days
- BETA is seeking funding sources for discharge sampling

And finally, put the results into report form for submission in July 2005.

January 4, 2005

Larry -

Nowhere can I find that the EPA mandates the formation of a storm water committee. There are only guidelines, which in part of the public participation process mention the formation of a storm water management panel.

I did find, however, that we were required to submit a storm water management plan, which was done. And once that plan is (was) approved, we have to live by it. And in that plan, one of the measurable goals is the formation of the storm water committee.

So, the formation of the committee is a portion of our plan, not a mandate. That would be the answer to Peter.

Living





## STORMWATER PHASE II COMPLIANCE

### INTRODUCTION

In 1990, EPA promulgated Phase I of its storm water program under the National Pollutant Discharge Elimination System (NPDES) permit provisions of the Clean Water Act. Phase I addressed storm water runoff from "medium" and "large" municipal separate storm sewer systems (MS4s) generally serving populations of 100,000 or greater, construction activity that would disturb five or more acres of land, and 10 categories of industrial activity. To further reduce the adverse effects of storm water runoff, EPA instituted its Storm Water Phase II Final Rule on December 8, 1999.

### WHAT IS REGULATED UNDER PHASE II?

Phase II regulates discharges from small MS4s located in "urbanized areas" (as delineated by the Census Bureau in the most recent census) and from additional small MS4s designated by the permitting authority. Phase II also regulates construction activities that would disturb between one and five acres of land.

MS4s are typically operated by municipalities, and is not always just a system of underground pipes; it can include roads with drainage systems, gutters, and ditches and detention ponds.

The EPA determined there are six Minimum Control Measures, which need to be addressed for the Phase II National Pollutant Discharge Elimination System (NPDES) program. These measures will be addressed by implementing Best Management Practices (BMPs) appropriate for Uxbridge's community. The BMPs will commence according to schedules approved by EPA. The six Minimum Control Measures for storm water quality enhancement are as follows:

### 1 – PUBLIC EDUCATION AND OUTREACH

#### *THE REGULATION*

The permittee must implement a public education program to distribute educational material to the community. The public education program must provide information concerning the impact of storm water discharges on water bodies. It must address steps and/or activities that the public can take to reduce the pollutants in storm water runoff.

### 2 – PUBLIC PARTICIPATION/INVOLVEMENT

#### *THE REGULATION*

All public involvement activities must comply with state public notice requirements at MGL Chapter 39 Section 23B.

The permittee must provide opportunity for the public to participate in the development, implementation and review of the storm water management program.

**STORMWATER PHASE II ACTION PLAN**  
**SUMMARY**  
**12-13-04**

TOWN MGR to:

---

Establishes 5-7 member Stormwater committee by mid January  
DPW, Conservation Commission, Board of Health, School Adm, 1-3  
community member(s)

Charge the committee

Authority

Compliance with EPA regulations

Mtg schedule (quarterly min.)

Goals

Public Education and outreach

Public participation / involvement

· Illicit discharge detection and elimination

· Manage construction site runoff

· Manage post-construction runoff

Implement good housekeeping program for municipal operations

Reporting guidelines and timeframes

See attached for further descriptions.

### **3 – ILLICIT DISCHARGE DETECTION AND ELIMINATION**

#### *THE REGULATION*

The permittee must develop, implement and enforce a program to detect and eliminate illicit discharges.

- The permittee must develop a storm sewer system map. At a minimum the map must show the location of all outfalls and the names all waters that receive discharges from those outfalls.
- The permittee must effectively prohibit, through an ordinance or other regulator mechanism, non-storm water discharges into the system.
- The permittee must develop and implement a plan to detect and address non-storm water discharges, including illegal dumping, into the system.
- The permittee must inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper waste disposal.

### **4 – CONSTRUCTION SITE RUNOFF CONTROL**

#### *THE REGULATION*

The permittee must develop, implement, and enforce a program to reduce pollutants in any storm water runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. The permittee must include disturbances less than one acre if part of a larger common plan.

At a minimum, the program must include:

- An ordinance or other regulatory mechanism to require sediment and erosion controls at construction sites.
- Sanctions to ensure compliance with the program.
- Requirements for construction site operators to implement a sediment and erosion control program which include BMPs that are appropriate for the conditions at the construction site.

## **5 – POST-CONSTRUCTION RUNOFF CONTROL**

### *THE REGULATION*

The permittee must develop, implement and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than one acre and discharge into the municipal system. The program must include projects less than one acre if the project is part of a larger common plan of development.

The post construction program must include:

- An ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment.
- Procedures to ensure adequate long term operation and maintenance of best management practices.
- Procedure to ensure that any controls that are in place will prevent or minimize impacts to water quality.

## **6 – POLLUTION PREVENTION/GOOD HOUSEKEEPING**

### *THE REGULATION*

The permittee must develop and implement a program with a goal of preventing and/or reducing pollutant runoff from municipal operations. The program must include an employee training component.

### **WHAT THE FUTURE HOLDS**

All indications are that these Regulations will be added to by EPA within the next 8-10 years and become more stringent. Example: prior to catch basin cleaning, samples tested for pollutants may be required, detention ponds and basins may require weekly maintenance, etc. The costs associated with these and other environmental activities will be borne by the communities and developers.



TOWN OF UXBRIDGE  
DEPARTMENT OF PUBLIC WORKS

147 HECLA STREET  
UXBRIDGE, MASSACHUSETTS 01569-1326  
508-278-8616 ♦ fax: 508-278-3179

March 3, 2005

To: Paul Knapik, Con Com; Rachel Landry, Cons. Agent; John Morowski, Planning Board; Sue Smith, Board of Health; Floyd Forman, Planner; Dan Stefanilo, School Supt.; Harry Romasco, Board of Selectmen; Nick Gazerro, Building Inspector

Cc: Allan Klepper, Town Manager; Larry Bombara, Superintendent

From: Irving Priest, Assistant Superintendent *IP*

Re: Ad Hoc Path-finding committee for Stormwater Phase II Action Plan

The charge has fallen to me to proceed under the Stormwater Phase II Plan for the Town of Uxbridge. I am scheduling a meeting for Wednesday, March 16<sup>th</sup> at 10:00 am in the selectmen's meeting room. I would like to take less than an hour of your time. If you cannot make it, please have someone else cover for you.

The Town has specific charges under the approved plan. The initial meeting brought forth several ideas, as previously mentioned by Allan, as follows:

- The committee should be ad hoc and we should advertise for but not count on citizen participation. All members should be put into an email group.
- A pamphlet should be prepared to be given out at all potential trigger points in any developers path – Bldg., Health, Planning, DPW, and on the Town website.
- The Building Department should be the primary gatekeeper.
- Paul Knapik, via his professional activity, will provide some plan templates for potential consideration by those qualifying developers (over 1 acre).
- A major question is how to fill the gap between those developers that fall between the Con Com and Planning Board.
- The question of adequate staffing was opened. In the long run, this activity may evolve as Larry Bombara has opined, into another DPW Dept, but that is not tomorrow. The challenge is to place enough staff in the right place to make sure the program is moving forward properly without wasting resources.
- Promulgation of policies and procedures may be a more appropriate approach than passage of bylaws, as was done in Oxford. A minimal overarching bylaw may be considered that would reference the EPA mandate; authorize the agencies in Town to promulgate policies and procedures; designate fees and fines authority; and designate the enforcing authority. A search for models should be pursued.
- Preliminary consideration was given to the role of agency consultants for professional review of the required plans, at least until such time as that capability could be home grown.

At the outset, I don't see our tasks as being too time consuming, as long as we know what each individual's role should be. Bring your questions and comments. See you then.

# MEMORANDUM

January 20, 2005

To: **Irving Priest, DPW; Paul Knapik, Con Comm; Rachel Landry, Conservation Agent; John Morowski, Planning Board; Sue Smith, Board of Health, Floyd Forman, Planner; Dan Stefanilo, School Supt.; Harry Romasco, Board of Selectmen**

Cc: Nick Gazerro, Building Inspector

Fr: Allan Klepper

Re: Ad Hoc Pathfinding Committee for Stormwater Phase II Action Plan

Good Morning All,

Those in bold above attended the initial session seeking to determine the best path to deal with this new mandated program. (Pete Petrillo was the Plan. Bd. addressee in the 1/10/05 original memo.) Among the ideas broached were the following:

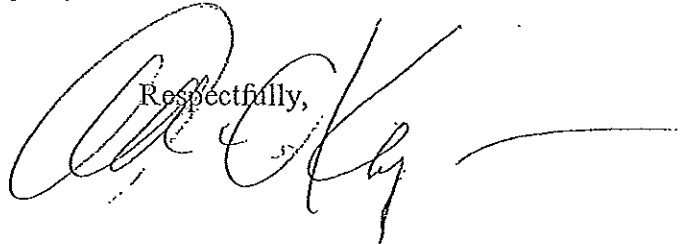
- The committee should be ad hoc and we should advertise for but not count on citizen participation. All members should be put into an email group.
- A pamphlet should be prepared to be given out at all potential trigger points in any developers path – Building Department, Health Department, Planner, DPW, and on the town website.
- The Building Department should be the primary gatekeeper.
- Paul Knapik, via his professional activity, will provide some plan templates for potential consideration by those qualifying developers (over 1 acre).
- A major question is how to fill the gap between those developers that fall between the Conservation Commission and the Planning Board.
- The question of adequate staffing was opened. In the long run, this activity may evolve as Larry Bombara has opined, into another DPW Department, BUT that is not tomorrow. The challenge is to place enough staff in the right place to make sure the program is moving forward properly without wasting resources.
- Promulgation of policies and procedures may be a more appropriate approach than passage of bylaws, as was done in Oxford. A minimal overarching bylaw may be considered that would reference the EPA mandate; authorize the agencies in town to promulgate policies and procedures; designate fees and fines authority; and designate the enforcing authority. A search for models should be pursued.
- Preliminary consideration was given to the role of agency consultants for professional review of the required plans, at least until such time as that capability could be home grown.

• *condo groups notification*

The next meeting is scheduled for ~~Tuesday~~<sup>Wed</sup>, 2/2/05 at 10:00 a.m. in the Selectmen's Office. Please confirm your attendance via phone 278-8600. If you cannot attend, please designate a representative of your agency to do so.

Look forward to your inputs.

Respectfully,



January 19, 2005

## PATHFINDING MEETING

In attendance: Rachael, Paul K., A. K., and I. P.

- At a minimum, an ad hoc committee of existing resources should be established
- Who will have the jurisdiction of silt runoff?
- It's proposed to have a typical SWPPP for the builders & developers to use
  - Including a contact for plan questions
- Clerical data & management might be handled through the building office, triggering thresholds to Con Com, Planning, or DPW for follow up in their respective areas
- Many enforcement questions
- Perhaps a single general overriding bylaw (for all 3) referencing mandates, enforcement, authority, and fees
- Irving check w/ BETA on available info from towns with more advanced plans or streamlined regs or bylaws
- Floyd check w/ CMRPC
- Rachael check w/ Con resources





March 3, 2005

To: Paul Knapik, Con Com; Rachel Landry, Cons. Agent; John Morowski, Planning Board; Sue Smith, Board of Health; Floyd Forman, Planner; Dan Stefanilo, School Supt.; Harry Romasco, Board of Selectmen; Nick Gazerro, Building Inspector

Cc: Allan Klepper, Town Manager; Larry Bombara, Superintendent

From: Irving Priest, Assistant Superintendent

Re: Ad Hoc Path-finding committee for Stormwater Phase II Action Plan

The charge has fallen to me to proceed under the Stormwater Phase II Plan for the Town of Uxbridge. I am scheduling a meeting for Wednesday, March 16<sup>th</sup> at 10:00 am in the selectmen's meeting room. I would like to take less than an hour of your time. If you cannot make it, please have someone else cover for you.

The Town has specific charges under the approved plan. The initial meeting brought forth several ideas, as previously mentioned by Allan, as follows:

- The committee should be ad hoc and we should advertise for but not count on citizen participation. All members should be put into an email group.
- A pamphlet should be prepared to be given out at all potential trigger points in any developers path – Bldg., Health, Planning, DPW, and on the Town website.
- The Building Department should be the primary gatekeeper.
- Paul Knapik, via his professional activity, will provide some plan templates for potential consideration by those qualifying developers (over 1 acre).
- A major question is how to fill the gap between those developers that fall between the Con Com and Planning Board.
- The question of adequate staffing was opened. In the long run, this activity may evolve as Larry Bombara has opined, into another DPW Dept, but that is not tomorrow. The challenge is to place enough staff in the right place to make sure the program is moving forward properly without wasting resources.
- Promulgation of policies and procedures may be a more appropriate approach than passage of bylaws, as was done in Oxford. A minimal overarching bylaw may be considered that would reference the EPA mandate; authorize the agencies in Town to promulgate policies and procedures; designate fees and fines authority; and designate the enforcing authority. A search for models should be pursued.
- Preliminary consideration was given to the role of agency consultants for professional review of the required plans, at least until such time as that capability could be home grown.

At the outset, I don't see our tasks as being too time consuming, as long as we know what each individual's role should be. Bring your questions and comments. See you then.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region 1  
1 Congress Street, Suite 1100  
BOSTON, MA 02114-2023

August 3, 2007

Mr. Larry Bombara  
Superintendent of Public Works  
Department of Public Works  
145 Hecla Street  
Uxbridge, MA 01569

**Subject: National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MAR041166) Compliance Assistance and Future Permitting**

Dear Mr. Bombara:

This summer marks the fourth year for municipalities implementing storm water management programs (SWMPs) to achieve our shared goal of protecting and enhancing our valuable water resources. The Environmental Protection Agency (EPA) is encouraged by the progress and environmental improvements achieved by some municipalities to date, and we anticipate similar progress and improvements to be made by the remaining municipalities. EPA is committed to providing continued guidance to municipalities to achieve these results.

Pursuant to Part II.A. of the Small Municipal Separate Storm Sewer System Permit ("Permit"), Uxbridge must develop, implement and enforce a SWMP to reduce the discharge of pollutants from its MS4 to the maximum extent practicable, protect water quality, and satisfy the water quality requirements of the Clean Water Act and the Massachusetts Water Quality Standards. The SWMP must implement minimum control measures described in Part II.B. of the Permit through the application of best management practices (BMPs) with appropriate measurable goals for each. Uxbridge must implement all elements of its SWMP by May 1, 2008, the expiration date of the Permit.

Minimum control measures required by the Permit generally include education and involvement of the public; the detection and elimination of illicit discharges; management of storm water during and after land development activities; pollution prevention and good housekeeping in municipal operations; cooperation between interconnected MS4s; and promotion of groundwater recharge in stressed basins. Through its annual SWMP evaluation and assessments required by the Permit, Uxbridge should be well aware of the progress made toward fulfilling its permit obligations as well

as the elements of its SWMP that still need to be implemented by May 1, 2008. In a letter dated August 18, 2006, EPA provided Uxbridge with a summary status of select Permit requirements that Uxbridge may find useful in the evaluation of its SWMP and reviewing its compliance with Permit conditions.

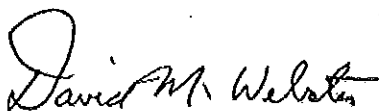
EPA expects to have a new permit available to replace the expiring Permit by May 1, 2008. However, if a new permit is not made available by this date, the current permit will remain in force and in effect until EPA issues a new permit (see Part VI.B. of the current permit). Prior to issuing a new final permit, EPA will make a draft permit available for public comment. EPA is currently drafting a new permit that should be available to the public by the end of this calendar year and is considering inclusion of the following modifications:

- On-going expectations for addressing discharges to waters that are impaired and to waters with approved total maximum daily loads (TMDLs);
- Expectations regarding detection and elimination of illicit discharges and expanded mapping requirements;
- Expectations regarding outfall monitoring;
- More specific and clarified expectations regarding the implementation of the Good Housekeeping control measures including implementation of specific BMPs relating to maintenance activities and other municipal operations; and
- Expanded reporting requirements.

According to our records, EPA has received from your municipality all annual reports required during the first four years of the 5-year permit term. Please note the fifth annual report is due on May 1, 2008.

For additional information, EPA's Stormwater Web Page ([www.epa.gov/NE/npdes/stormwater/index.html](http://www.epa.gov/NE/npdes/stormwater/index.html)) provides a wealth of readily-available information including the Small MS4 General Permit, NOIs, annual reports, public comments, EPA and State contacts, and a compilation of SWMP practices and accomplishments reported by municipalities. If you require further assistance, please feel free to contact Ann Herrick at 617.918.1560 or Dave Gray at 617.918.1577. Questions concerning the next general permit should be directed to Thelma Murphy at 617.918.1615.

Sincerely,



David M. Webster, Chief  
Industrial Permits Branch

Enclosure

cc: Fred Civian, Stormwater Coordinator, MassDEP

Bos read file / DPW



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region 1  
1 Congress Street, Suite 1100  
BOSTON, MA 02114-2023

RECEIVED

SEP 29 2009

BOARD OF SELECTMEN  
UXBRIDGE, MA

You are receiving this letter because your municipality operates a Phase II small municipal storm sewer system (MS4) permitted to discharge storm water to waters of the United States by the United States Environmental Protection Agency (EPA). Your storm water permit, issued in 2003 (2003 Permit), requires your community to control storm water discharges to waters of the United States through implementation of a storm water management program comprised of control measures specified by the Permit. One such requirement is the implementation of an Illicit Discharge Detection and Elimination (IDDE) Program.

The IDDE program is designed to prohibit the discharge of sources of non-storm water, such as raw sewage, to storm sewer systems to eliminate the discharge of polluted stormwater into water bodies. Such discharges can include raw sewage from illegal sewer connections, infiltration from cracked sanitary systems, spills collected by drain outlets, or paint or used oil dumped directly into a drain. These discharges contribute bacteria, heavy metals, toxics, oil and grease, solvents, nutrients, viruses and bacteria to New England waters. In fact, polluted urban storm water runoff, which includes storm sewer discharges, are a primary cause of impaired water quality in the United States. Such discharges cause approximately 70% of surface water pollution in New England.

EPA understands the economic pressure faced by many cities and towns. However, the elimination of this significant environmental threat is something we must all seek to achieve. Consequently, to increase protection of our rivers, ponds, lakes, streams and coastal waters, more stringent MS4 permits will be issued in the near future to communities in New Hampshire and Massachusetts. These updated permits will require the implementation of more stringent storm water management programs. This includes more rigorous IDDE control measures than required by your current permit. IDDE control is an issue throughout New England, and we are working cooperatively with all the New England states to address this important problem.

Unfortunately, EPA has documented significant instances of municipal noncompliance with the 2003 Permit, which continues to be in effect. In response, our regional office recently initiated civil penalty enforcement actions against MS4 communities in Massachusetts and New Hampshire. These actions address failures by those municipalities to:

- Identify and map their storm water outfalls;
- Pass municipal regulations prohibiting illicit discharges; and
- Create and implement an IDDE program.

EPA-New England will continue to inspect MS4 municipalities. If these inspections reveal non-compliance, additional enforcement actions are likely.

For these reasons, we urge your community to make compliance a priority. To help you do so, EPA-New England is committed to providing compliance assistance tailored to your needs. We encourage you to access compliance information through the following sources:

- The EPA National Storm Water Web-Page

The regional storm water page found at <http://www.epa.gov/region1/stormwater> includes links to a range of regional and national resources and contact information. Through the National EPA NPDES Storm Water Permit Program web site, for example, you can access information addressing MS4 community storm water compliance needs, including IDDE compliance protocols and Best Management Practices (BMPs).

- Storm Water Compliance Workshops and Webinars

Starting this fall and winter, EPA-New England will present “live” storm water compliance workshops and webinars. In addition to workshops tailored to IDDE compliance, experts will address storm water control BMPs and Low Impact Development (LID) technologies. Our website will advertise dates, places and times later this year at <http://www.epa.gov/region1/stormwater>.

- GPS Unit Training Program

EPA-New England is implementing a Global Positioning Satellite Unit (GPS) training program for MS4 municipalities entitled “Introduction to GPS for Storm Water System Mapping.” Topics will include basic GPS operation; GPS data collection; downloading GPS data for GIS and Google Earth Pro; and learning to use handheld GPS receivers to collect and export data to GIS files.

- Partnerships

EPA New England seeks to form partnerships with MS4 municipalities and other stakeholders to further our common objectives: increasing awareness of and compliance with storm water regulations and implementing BMPs that promote compliance and facilitate “beyond-compliance” performance. This includes:

- Participation with municipalities in storm water compliance workshops; and
- Sharing success stories in implementing successful IDDE programs.

We hope that you review your town’s permit compliance status and correct any deficiencies you may find on an expedited basis. For more information, please feel free

to contact any of the following EPA staff members: Enforcement: Andrew Spejewski at 617-918-1014; Assistance: Joshua Secunda at 617-918-1736; and Storm Water Permit issues: Thelma Murphy at 617-918-1615. For information on the recently filed penalty actions and the injunctive relief being sought, please see the "News" Section at <http://www.epa.gov/region1>.

Sincerely,

*Susan Studien*

Susan Studien, Director  
Office of Environmental Stewardship





# MODEL STORMWATER BYLAW RESEARCH FINDINGS

Prepared by Horsley Witten Group  
September 22, 2004

In collaboration with:

The Towns of Plymouth, Duxbury, and Marshfield, MA  
Massachusetts Office of Coastal Zone Management (CZM)  
North and South Rivers Watershed Association (NSRWA)  
Buzzards Bay Project National Estuary Program (BBP)  
Massachusetts Bays National Estuary Program

---

## 1.0 INTRODUCTION

As the first step in developing a broad-based stormwater management model bylaw for the Towns of Plymouth, Duxbury, and Marshfield, Massachusetts, Horsley Witten Group (HW) has researched a representative sampling of the latest and most applicable Stormwater bylaw language and design criteria.

HW compiled a library of model bylaws/ordinances, and actual stormwater bylaws/ordinances, regulations, and guidance manuals, all developed at various local, regional, and state levels. Of that library of materials, HW chose to review in detail examples that contain components most applicable to the Plymouth, Duxbury, and Marshfield region.

The scope of the analysis includes criteria only for post-construction stormwater controls, for new development and redevelopment projects. The components researched include: administrative/procedural format, water quantity criteria, water quality criteria, recharge criteria, site development criteria, approved practices, and other elements such as stormwater credits and redevelopment criteria.

The following documents were analyzed:

- Falmouth, MA, Stormwater Control Regulations (August 1998)
- Dedham, MA, Stormwater Management Bylaw (April 2001) and Stormwater Management Rules & Regulations (May 2003)
- Massachusetts Department of Conservation and Recreation (DCR, formally MDC) Model Stormwater Post-Construction Bylaw (April 2004)<sup>1</sup>
- Franklin, MA – Best Development Guidebook, Version 1 (November 2001)
- Massachusetts Stormwater Management Policy (March 1997)
- Virginia Stormwater Management Model Ordinance (September 2001)
- Maryland – Proposed Stormwater Management Regulations & Design Manual (April 2000)
- Rhode Island Stormwater Design and Installation Manual (September 1993)
- Maine DEP Phosphorus Control in Lake Watersheds (September 1992)

---

<sup>1</sup> The same version of the DCR model bylaw is also available on the website for the Massachusetts Attorney General's Office at <http://www.ago.state.ma.us/sp.cfm?pageid=1036>

## 2.0 ADMINISTRATIVE/PROCEDURAL

### 2.1 Document Type

Stormwater may be regulated through a variety of formats at the local, regional, county, or state level. The various formats may include:

- *Bylaw* – Town Law that must be adopted at Town Meeting. A bylaw may include detailed specific criteria or may have a general description that gives authority to implementing regulations and reference to a design manual.
- *Ordinance* – City (or County) Law that must be adopted by either the City Council or the Aldermen. May be detailed or may have a general description that gives authority to implementing regulations and reference to a design manual.
- *Regulations* – Typically presents detailed specific criteria of required stormwater management elements. May also give authority by a reference to a technical design manual.
- *Design Manual* – A detailed design manual with performance criteria, technical specifications and design requirements.
- *Guidance Manual* – May be similar to a design manual, but provides guidance and is not necessarily regulated.

### 2.2 Components of a Bylaw

The typical format for a Stormwater Bylaw may consist of some or all of the following elements:

1. *Introduction* – this section briefly establishes the environmental, economic, social, and legal justification for the adoption of a stormwater management bylaw.
2. *Purpose* – this section describes the purpose of the bylaw and lists the stormwater objectives.
3. *Definitions* – this section defines key words found throughout the bylaw that establish the official legal meaning of such words.
4. *Authority* – this section describes the authority under which the bylaw is adopted and defines the regulating agency or municipal department responsible for implementing the bylaw.
5. *Applicability* – this section describes the thresholds and exemptions for the stormwater management bylaw (i.e., the intensity of the land disturbance or use that will trigger cover under the bylaw).
6. *Administration* – this section describes the specific requirements under which the bylaw will be administered, implemented and enforced.

7. ***Permits and Procedure*** – this section describes the stormwater management program permit procedures and application requirements.
8. ***Stormwater Management Plan*** – this section describes the required content of the application to sufficiently describe the nature and purpose of the proposed development, pertinent conditions of the site and the adjacent areas, and proposed stormwater controls.
9. ***Stormwater Management Criteria*** – *this optional section includes specific sizing criteria for sizing stormwater management facilities (i.e., water quality, quantity and/or recharge requirements).*
10. ***Operation and Maintenance Plan*** – this section contains information on the operation and maintenance submittal and compliance requirements of the proposed stormwater controls, which is readily available to the owners.
11. ***Surety*** – this section describes the monetary legal arrangements prior to issuance of a permit to insure that the stormwater practices are installed by the permit holder, as required by the approved stormwater management plan.
12. ***Inspections*** – this section describes the inspection provisions and provides site entry rights for the municipality for the proposed development to ensure proper construction of the facility under the approved stormwater management plan.
13. ***Waivers and Exemptions*** – this section describes the exceptions for providing stormwater management and describes the activities and/or uses that are exempt from the bylaw.
14. ***Certificate of Completion*** – this section describes the requirements for issuance of a Certificate of Completion upon receipt and approval of the final reports, computations, and/or as-built plans to establish that all the work of the permit has been satisfactorily completed in conformance with the bylaw.
15. ***Enforcement*** – this section defines the legal enforcement provisions of the bylaw and documents how the municipality may pursue civil and criminal remedies for any violation to the bylaw.
16. ***Severability*** – this section is a disclaimer that allows that if any provision, paragraph, sentence, or clause of this bylaw is rendered invalid for any reason, all other provisions shall continue in full force and effect.

### **2.3 Governing Authority**

Stormwater Management may be governed by a variety of governmental entities, such as:

- ***Local*** - Planning Board, Board of Health, Conservation Commissions, Department of Public Works and/or a new municipal department (i.e., natural resources department).
- ***Regional*** – County governments or other regional entities with established governing authority (i.e. The Cape Cod Commission).

- *State* – State environmental agencies and enabling state law (i.e. Wetlands Protection Act/DEP in Massachusetts).
- *Federal* – U.S. Environmental Protection Agency (EPA) through the Clean Water Act.

From the examples researched for this study, many of the existing stormwater bylaws give the governing authority to the Conservation Commission (i.e. Dedham, MA). Several model ordinances have suggested a separate entity such as a stormwater board or a natural resources/environmental protection department be set up, however the legality and oversight of these departments would require Town Meeting action and the feasibility would need to be researched further.

## 2.4 Thresholds & Exemptions

There were several types of thresholds and exemptions found from the stormwater materials. Thresholds are generally defined as activities that trigger the bylaw. Examples are summarized below:

### Thresholds:

- Any activity in the resource area subject to protection through the Massachusetts Wetlands Protection Act and/or Clean Water Act. Activities within in the 100-foot buffer zone, or within the 200-foot Riverfront area, if they will alter any resource area;
- Any activity which will increase the impervious area of a parcel of land (Dedham);
- Any activity which will result in an increased amount of stormwater flowing from the property (Dedham);
- Subdivision, site plan, or land use conversion disturbing anywhere from 5,000 square feet to 1-acre (43,500 square feet) or more (Virginia, Maryland); and/or
- Watersheds that contribute to natural lakes of 10 acres in size or 30 acres if manmade (examples include Maine DEP, Great Ponds class A (GPA) ponds only).

### Exemptions:

- Single lots with 12% impervious coverage or less (Falmouth);
- Single family house with impervious lot coverage less than 2,500 square feet (Falmouth);
- Single family house with a total lot impervious less than 4,500 square feet with roof-top infiltration provided for the first flush volume (Falmouth);
- Disturbance of less than 5,000 square feet of land area (Maryland);
- Construction of utilities other than drainage which will not alter terrain, ground cover, or drainage patterns (Dedham);

- Residential subdivisions with 4 or fewer lots, provided that discharges will not affect critical areas (Massachusetts Stormwater Policy);
- Permitted surface or deep mining operations (Virginia); and/or
- Agricultural, horticultural, or forest crops (Virginia).

The selection of a threshold usually involves a balance between resource protection and permit burden and must be very carefully evaluated by a municipality considering available staff resources, cost and natural resource sensitivity.

### 3.0 WATER QUANTITY CRITERIA

#### 3.1 Stormwater Flows

Regulating the amount of runoff from a new or a redeveloped site typically requires the post-development peak discharge rates to be equal to or less than the pre-development peak discharge rates, for a given set of design storm events. Depending on the locality and regulations, these storms range from the 1-year to the 100-year frequency event.

Example requirements include:

- Post-development peak discharge rates shall not exceed pre-development peak discharge rates (typically for the 2, 10 and 100 year events);
- Stormwater discharges shall not cause erosion in wetlands or other regulated water bodies;
- 24 hour Extended Detention (ED) of runoff from the 1-year frequency storm under post-developed conditions;
- Overbank Flood Protection ( $Q_p$ ) requires controlling the peak discharge rate from the 10-yr storm event to the pre-development rate (typically associated with a conveyance criteria).
- Stormwater detention basins must be designed to safely withstand or pass through the discharge from the 100-yr runoff flow.

Quantity is a complex issue that has been widely debated. Modeling has illustrated that the benefits of peak flow attenuation are only realized within a short distance below a facility. Peak controls are often exempted for direct discharge to coastal waters and/or very large rivers and lakes. It is also important to note that quantity controls require the largest storage volumes and consequently the most cost of any stormwater control measure.

### 3.2 Stormwater Volumes

Similar to stormwater flow rates, stormwater volumes may also be regulated for given storm events.

- Controls for 2-yr, 10-yr, and 25-yr storm events are typically required with 2-yr being the minimum control storm event.
- Extreme Flood Volume (Qf), downstream analysis of the 100-year storm event is sometime required to mitigate significant downstream impacts (flooding).
- Channel Protection Volumes (CPv), 24-hour extended detention of the post-development 1-yr storm event.

The rationale for the 1-year ED channel protection volume is that runoff will be stored and released in such a gradual manner that critical erosive velocities during bankfull and near-bankfull events will seldom be exceeded in downstream channels.

The issue of a channel protection volume in Massachusetts is complicated by the existing criteria of the Stormwater Management Policy that requires 2-year and 10-year peak flow attenuation. A local bylaw must be at least as protective at the state requirements. A local bylaw that requires 1-year 24 hour ED instead of 2-year control will need input and concurrence from DEP.

## 4.0 WATER QUALITY CRITERIA

### 4.1 Water Quality Volume

Water Quality Criteria often include a requirement of volume to be treated. Examples of sizing options for defining the volume of runoff needed for stormwater quality treatment are as follows:

- 0.50 or 1.0 inch of rainfall x the total impervious area of the drainage area
- $0.90 - 1.25 \times \text{total water shed area} \times \text{runoff coefficient (Rv)}$   
where:  $Rv = 0.05 + 0.009 (I\%)$   
 $I\% = \text{percent of impervious area}$
- 90 or 80 percent rule is a method that estimates target rainfall based on a rainfall frequency spectrum analysis where all rainfall events over a long period of record are sorted from smallest to largest. The 90<sup>th</sup> % rule, for example, is the rainfall value where 90% of all precipitation events are equal to, or smaller than that value. The estimated precipitation is then multiplied by the watershed area and then by the percentage of impervious area or the  $R_v$  to determine the water quality volume.

There are several sizing options that have been used by municipalities and state agencies. It is important to note that the greater the water quality volume the higher the annual pollutant load capture but also the higher the cost for treatment.

#### 4.2 Water Quality Parameters

Typical Stormwater pollutants such as Total Suspended Solids (TSS), phosphorus, and nitrogen can be regulated as follows:

- Total suspended solid (TSS) removal rate of 80% or greater
- Total phosphorus removal rate of 40% to 50%
- Total nitrogen removal rate of 30%
- Comparison of permitted with actual export of phosphorus (see Maine DEP, Phosphorus Control in Lake Watersheds in Appendix A)

The selection of target pollutants other than TSS is usually driven by specific considerations of the receiving waters. In Maine for example, the state has promulgated strict criteria for the control of phosphorus to protect Maine lakes and ponds. Municipalities generally use indicator pollutants as a surrogate for removal of a set of pollutants of concern. One issue that must be carefully weighed in selecting regulated pollutants is whether sufficient monitoring data are available to adequately characterize BMP pollutant removal efficiency.

#### 4.3 Methods for Compliance with Water Quality Standards

Two basic methods are used to ensure that proposed stormwater management systems comply with state and federal water quality standards. These are the so-called “presumptive compliance” and the “loading calculation” methods.

- *The presumptive approach* – requires compliance with a set of prescribed performance standards, and limits the number of acceptable stormwater treatment practices that are capable of meeting the performance standards.
- *The loading calculation approach* – requires applicants to document compliance with water quality standards by calculating pre-development loads, calculating uncontrolled post-development loads and then applying a prescribed pollutant removal efficiency to selected practices to arrive at a net pollutant load delivery. The post-developed load must be equal to or less than the pre-developed load.

Examples and further detail of these two approaches are included in Appendix B.

## 5.0 RECHARGE CRITERIA

Several stormwater management permit programs, including the Massachusetts Stormwater Policy, utilize a soil-type recharge criterion that involves determining the average annual recharge rate based on the prevailing hydrologic soil group (HSG) present at a project site from the Natural Resource Conservation Service (NRCS) Soil Surveys.

The Massachusetts Policy requires the following volume of stormwater to be recharged based on the amount of impervious area:

<u>HSG</u>	<u>Required Recharge</u>
A	0.40 inches x impervious area
B	0.25 inches x impervious area
C	0.10 inches x impervious area
D	none required

The Maryland Stormwater Regulations use a recharge criterion also based on soil types, however, the method to calculate the volume is as follows:

$$\text{Required Recharge (Rev)} = [(S)(Rv)(A)]/12$$

where

A=area in acres

Rv=Runoff Coefficient

<u>HSG</u>	<u>S=Soil Specific recharge factor (inches)</u>
A	0.38
B	0.26
C	0.13
D	0.07

The methods for both Massachusetts and Maryland are essentially the same. Some practitioners have suggested that the soils based approach is too simplistic and does not necessarily replicate existing recharge. An alternative approach was put forth by the Massachusetts DEP in recent years that intended to utilize runoff coefficients as a basis for calculating recharge, however, this approach has not yet been finalized or promulgated into regulations.

## 6.0 SITE DESIGN CRITERIA

Three primary sources were considered as representative of alternative site design criteria where the fundamental goals are to reduce stormwater runoff and corresponding pollutant load, increase infiltration, maintain hydrologic balance to the maximum extent practicable, and/or promote retention of natural features. These include: the so-called Low Impact Development approach, originally published by the Prince George's County,



Department of Environmental Resources (PGDER, 1999); the so-called Better Site Design techniques, published by the Center for Watershed Protection (CWP, 1998); and the concepts of "Conservation Design," published and promoted by Randall Arendt (Arendt, 1999). Each of these programs and/or authors apply a slightly different approach to achieve the goals identified above and are summarized as follows:

### **6.1 Low Impact Development (LID)**

The term low impact development was first put forth by staff of the Prince Georges County, Maryland Department of Environmental Resources in the mid 1990's as an alternative to traditional hard conveyance systems that lead to conventional stormwater detention ponds, often referred to as the pipe to pond approach. This alternative approach seeks to mimic the natural hydrologic balance through the application of longer runoff travel times through site grading techniques and the application of so-called "integrated management practices" (IMPs) that are small-scale water holding practices installed throughout the drainage system to capture and infiltrate runoff.

Several IMPs can be utilized to achieve the goals of low impact development including: Bioretention facilities, dry wells, filter/buffer strips, grasses swales, rain barrels, cisterns and infiltration practices. A fundamental premise of the LID approach is that if enough IMPs are employed in the drainage network, the negative hydrologic effects of increased impervious cover can be completely overcome.

### **6.2 Better Site Design**

The term "Better Site Design" was coined by the Center for Watershed Protection in the later 1990's and is similar in several aspects to the low impact development approach with the caveat that it places more of an emphasis on the actual amount and location or new impervious cover at a given site. Better Site Design was developed as a consequence of development roundtable of planners, engineers, municipal officials, developers, and public safety officials as a suite of site design principles that could be applied at the individual site level to achieve the result of less runoff and more infiltration. A total of 23 "development principles" were promulgated that involved reducing and breaking up impervious cover at the site level. Three broad categories were used to define these principles including: impervious cover associated with the automobile; impervious cover associated with lot development; and preservation and protection of natural areas. Representative principles include:

- Skinnier streets;
- Shorter streets;
- Less and smaller cul-de-sacs;
- Open section drainage systems (i.e., roadside swales);
- Smaller parking demand ratios;
- Smaller parking stalls and isles;
- Structured parking;
- Integrated stormwater treatment within parking lots;

- Cluster development;
- Smaller lot setbacks;
- Common shared driveways;
- Preservation of natural areas;
- Promotion of streamside buffers and buffer management; and
- Incentives to promote preservation of natural areas.

### **6.3 Conservation Design**

“Conservation Design” is a design philosophy that employs a systematic approach to preserve natural open space. The approach is widely attributed to Randall Arendt, who has several publications on the subject, among them, “Growing Greener – Putting Conservation into Local Plans and Ordinances” (Arendt, 1999). The basic approach involves identifying primary and secondary resource protection areas, siting buildings where the least amount of resource impact will occur, laying out a road and driveway network to provide access to buildings, and finally, drawing lot lines around proposed buildings. The approach requires zoning provisions that allow reduced lot setbacks and frequently, atypical lot configurations. Many current municipal zoning bylaws prohibit such lot geometry.

The key concept of all three representative examples is that there are a suite of site design techniques that can be employed to reduce the impacts of land alteration and increased impervious cover. A few stormwater management programs have incorporated these techniques into stormwater design criteria in the form of “stormwater credits.” Site Design criteria and/or a stormwater credit system can be built into a bylaw or regulations as a basis for meeting some or all of water quality and recharge requirements. The states of Maryland and Vermont both have a stormwater credit system that recognizes the water quality and recharge benefits of specific structural and non-structural practices. Detailed criteria are offered on how to meet the credit and how to calculate and quantify the water quality and recharge benefits.

## **7.0 APPROVED PRACTICES**

Stormwater Management bylaws or regulations may reference specific types of structural stormwater practices that are required or allowed. Design requirements for the cited practices may be described in a bylaw or in regulations, or may be in a design manual referenced by the bylaw or regulations. As stated in section 3.0 for Water Quality criteria, the practices listed may be presumed to meet specified water quality requirements if designed in accordance with the technical guidance.

The typical types of approved stormwater practices fall into the categories of: ponds, wetlands, infiltration, filters, and open channels. Innovative proprietary devices may also be added to the list, but often require review and approval at the discretion of the governing entity. Descriptions of the typical broad groups are as follows:

- *Stormwater Ponds* - Practices that have a combination of permanent pool and extended detention capable of treating a water quality volume.
- *Stormwater Wetlands* - Practices that include significant shallow marsh areas, and may also incorporate small permanent pools or extended detention storage to achieve the full water quality volume.
- *Infiltration Practices* - Practices that capture and temporarily store the water quality volume before allowing it to infiltrate into the B and/or C soil horizons.
- *Filtering Practices* - Practices that capture and temporarily store the water quality volume and pass it through a filter bed of sand, organic matter, soil, or other media.
- *Open Channel Practices* - Practices explicitly designed to capture and treat the full water quality volume within dry or wet cells formed by check dams or other means, or within the channel itself through a slow velocity and relatively long resistance time.
- *Proprietary Practices* - Practices that utilize a propriety technology and can demonstrate through independent monitoring a capability to treat the water quality volume at a specified pollutant removal efficiency.

An approved practices list can be a successful way to ensure a minimum pollutant load removal, however, the key is to have a design manual to reference and to ensure that important performance measures are mandatory.

## 8.0 REDEVELOPMENT

Determining the portions of a site that must comply with Stormwater Management is relatively straight forward when regulating new development. Stormwater standards typically apply to the entire portion of the site that is newly developed. Methods of regulating redevelopment projects however, vary from only regulating the newly developed portion of a site to regulating the entire site.

One method to define the extent to which redeveloped sites are subject to stormwater regulations is currently proposed for the State of Rhode Island. The approach is as follows:

*Urban redevelopment projects, defined as any construction, alteration, or improvement exceeding 5,000 square feet of land disturbance, where the existing land use is commercial, industrial, institutional, or multi-family residential is presumed to meet the specified water quality standard if the total impervious cover is reduced by 40% from existing conditions. If the impervious cover reduction is less than 40%, water quality treatment must be provided for that portion of the site's impervious cover exceeding 60% of the existing impervious cover in accordance with the prescribed water quality provisions.*

A similar standard is also currently in practice in the State of Maryland. Thresholds can vary, such as area disturbed or percentages of impervious cover, all dependent upon the local needs and goals of the region.

## 9.0 REFERENCES

Arendt, R. 1999. Growing Greener, Putting Conservation into Local Plans and Ordinances. Natural Lands Trust, American Planning Association, and American Society of Landscape Architects. Island Press. Washington, DC. 222 pp.

Center for Watershed Protection (CWP), 1998. Better site Design: A Handbook for Changing Development Rules in Your Community. Center for Watershed Protection, Ellicott City, Maryland. 172 pp.

Center for Watershed Protection (CWP). 1998. Nutrient Loading from Conventional and Innovative Site Development. Prepared for Chesapeake Research Consortium. Ellicott City, Maryland. 54 pp.

Prince Georges County, Department of Environmental Resources (PGDER), 1999. Low-Impact Development Design Standards, An Integrated Design Approach. PGDER, Programs and Planning Division, Landover, Maryland. 88 pp.

Schueler, T. 1996. Technical Note 75. Irreducible Pollutant Concentrations Discharged from Urban BMPs. In Watershed Protection Techniques, Vol. 2, No. 2. Center for Watershed Protection. Ellicott City, Maryland. pp 369-372.

*Note: References for the example bylaws, ordinances, and regulations researched for this document are listed in the introduction under Section 1.0.*

## 10.0 APPENDICES

**Appendix A: Summary of Stormwater Materials for Proposed Bylaw**

**Appendix B: Methods for Compliance with Water Quality Standards**



## Minutes

### Town of Uxbridge Town Hall Spring Annual Town Meeting 13 May 2008

Pursuant to the foregoing Warrant, the inhabitants of the Town of Uxbridge, qualified to vote in the Town elections and in Town affairs, met the High School Gymnasium, in Precinct 2, in said Uxbridge, and transacted the following business on May 13, 2008:

Quorum Required: 50  
Voters Present: 391

Town Moderator Harold Klei called the Annual Spring Town Meeting to order at 7:09pm declaring the presence of a quorum and led the assembly in the Pledge of Allegiance to the flag.

Moderator Klei announced the appointment of the following tellers for the evening: Phillip Wheelock, Barbara Hill, Hurley Silbor, Nancy Hanson, Sarah Douglas, Dan Deveau, Gial Benedict, and Ray Miller. Bob Pennell was appointed head teller. Sarah Douglas was appointed time keeper.

The Moderator acknowledged the presence of Larry Bombara who is retiring as the Superintendent of Public Works. He also thanked outgoing Finance Committee members: Mary Pat Wickstrom for her service as an appointed member, and C. Edward Maharay for his service as an elected member of the Finance Committee.

#### ARTICLE 1: REPORTS

To hear the report of any outstanding committee and act thereon.

**SPONSOR:** Board of Selectmen

The Capital Planning Committee presented a report.

**RECOMMENDATION OF THE BOARD OF SELECTMEN:** No recommendation

**RECOMMENDATION OF THE FINANCE COMMITTEE:** No recommendation

**VOTE NEEDED:** N/A

A motion was made and seconded to consider Article 32 out of order for immediate consideration. The motion carried.

#### ARTICLE 32: UNDERRIDE BALLOT QUESTION BY PETITION

To see if the Town will vote to authorize the Board of Selectmen, by a majority vote of the Selectmen, to place an override ballot question before the voters of Uxbridge? The question follows (MGL Ch 59 Section 21C(h)): "Shall the Town of Uxbridge be required to reduce the amount of real estate and personal property taxes to be assessed for fiscal year beginning July first two thousand and eight by an amount equal to \$1,200,000?"

YES \_\_\_\_\_ NO \_\_\_\_\_

**SPONSOR:** Citizen Petition



**RECOMMENDATION OF THE BOARD OF SELECTMEN:** No recommendation  
**RECOMMENDATION OF THE FINANCE COMMITTEE:** No recommendation  
**VOTE NEEDED:** 2/3 majority vote

No motion.  
No Action on Article 19.

**ARTICLE 20: GENERAL BYLAW AMENDMENTS - NEW STORMWATER MANAGEMENT BYLAW**

To see if the Town will vote to amend the General Bylaw of the Town of Uxbridge, by inserting a new § 178 Stormwater Management bylaw to read as follows:

**§178 STORMWATER MANAGEMENT**

**178-1. Purpose**

Regulation of activities that result in the disturbance of land and the creation of stormwater runoff is necessary for the protection of the Town of Uxbridge to safeguard the health, safety, and welfare of the general public and protect the natural resources of the Town. The purpose of this Bylaw is to prevent or diminish these impacts by controlling runoff and preventing soil erosion and sedimentation resulting from site construction and development.

This Bylaw is adopted under authority granted by the Home Rule Amendment of the Massachusetts Constitution, the Home Rule statutes, and pursuant to the Bylaws of the federal Clean Water Act found at 40 CFR 122.34.

Nothing in this Bylaw is intended to replace the requirements of any other Bylaw that has been or may be adopted by the Town of Uxbridge. Any activity subject to the provisions of this Bylaw must comply with the specifications of each applicable bylaw.

The objectives of this Bylaw are to:

- (1) Establish decision-making processes surrounding land development activities that protect the integrity of the watershed and preserve the health of wetland and water resources;
- (2) Require that new development, redevelopment and all land conversion activities maintain the after-development runoff characteristics as equal to or less than the pre-development runoff characteristics to provide recharge and to reduce flooding, stream bank erosion, siltation, nonpoint source pollution, property damage, and to maintain the integrity of stream channels and aquatic habitats;
- (3) Establish minimum construction/alteration and post-development storm water management standards and design criteria for the regulation and control of storm water runoff quantity and quality and for the protection of properties and aquatic resources downstream from land development and land conversion activities from damages due to increases in volume, velocity, frequency, duration, and peak flow rate of storm water runoff;
- (4) Establish design criteria for measures to minimize nonpoint source pollution from storm water runoff which would otherwise degrade water quality;
- (5) Establish design and application criteria for the construction and use of structural storm water control facilities that can be used to meet the minimum construction/alteration and post-development storm water management standards and to encourage the use of nonstructural storm water management, storm water site design practices or "low-impact development practices", such as reducing impervious cover and the preservation of open space and other natural areas, to the maximum extent practicable;

*regulator req'd  
by this.*





- (6) Establish provisions for the long-term responsibility for and maintenance of structural storm water control facilities and nonstructural storm water management practices to ensure that they continue to function as designed, are maintained, and pose no threat to public safety;
- (7) Establish provisions to ensure there is an adequate funding mechanism, including surety, for the proper review, inspection and long-term maintenance of storm water facilities implemented as part of this Bylaw; and
- (8) Establish administrative procedures and fees for the submission, review, approval, or disapproval of storm water management plans, and for the inspection of approved active projects, and long-term follow up.

**178-2. Definitions.** As used in this bylaw, the following terms shall have the following meanings:

**AGRICULTURE** - The normal maintenance or improvement of land in agricultural or aquacultural use, as defined by the Massachusetts Wetlands Protection Act (M.G.L. c. 131 § 40) and its implementing regulations (310 CMR 10.00).

**APPLICANT** - Any "person" as defined below requesting a Stormwater Management Permit for proposed land-disturbance activity.

**AUTHORIZED ENFORCEMENT AGENCY** - The Conservation Commission (hereinafter "the Commission") and its agents or other designated employees of the Town of Uxbridge shall be charged with enforcing the requirements of this bylaw.

**ALTER** - Any activity that changes the water quality, or the force, quantity, direction, timing or location of runoff flowing from the subject area and will measurably change the ability of a ground surface area to absorb water. Such changes include: change from distributed runoff to confined, discrete discharge; change in the volume of runoff from the area; change in the peak rate of runoff from the area; and change in the recharge to groundwater on the area. Alter may be similarly represented as "alteration of drainage characteristics," and "conducting land disturbance activities."

**BETTER SITE DESIGN** - Site design approaches and techniques that can reduce a site's impact on the watershed through the use of nonstructural storm water management practices. Better site design includes conserving and protecting natural areas and green space, reducing impervious cover, and using natural features for storm water management.

**BEST MANAGEMENT PRACTICE (BMP)** - Structural, non-structural, vegetative and managerial techniques that are recognized to be the most effective and practical means to reduce erosion and sediment, prevent or reduce increases in storm water volumes and flows, reduce point source and nonpoint source pollution, and promote storm water quality and protection of the environment. "Structural" BMPs are devices that are engineered and constructed to provide temporary storage and treatment of storm water runoff. "Nonstructural" BMPs use natural measures to reduce pollution levels, do not require extensive construction efforts, and/or promote pollutant reduction by eliminating the pollutant source.

**CONSTRUCTION AND WASTE MATERIALS** - Excess or discarded building or construction site materials that may adversely impact water quality, including but not limited to concrete truck washout, chemicals, litter and sanitary waste.

**DISTURBED AREA** - an area, man-made or natural, where the existing pre-development condition has been or is proposed to be altered.



ENVIRONMENTAL SITE MONITOR - A Professional Engineer, or other trained professional selected by the Commission and retained by the holder of a Stormwater Management Permit to periodically inspect the work and report to the Commission.

EROSION - A condition in which the earth's surface, including soil or rock fragment, is detached and moved away by the action of water, wind, ice, gravity or other natural means.

HOTSPOT - Land uses or activities with higher potential pollutant loadings, such as auto salvage yards, auto fueling facilities, fleet storage yards, commercial parking lots with high intensity use, road salt storage areas, commercial nurseries and landscaping, outdoor storage and loading areas of hazardous substances, or marinas.

MASSACHUSETTS STORMWATER MANAGEMENT POLICY - The Policy issued by the Department of Environmental Protection, and as amended, that coordinates the requirements prescribed by state regulations promulgated under the authority of the Massachusetts Wetlands Protection Act G.L. c. 131 § 40 and Massachusetts Clean Waters Act G.L. c. 21, §. 23-56. The Policy addresses stormwater impacts through implementation of performance standards to reduce or prevent pollutants from reaching water bodies and control the quantity of runoff from a site.

NEW DEVELOPMENT - Any construction or disturbance of a parcel of land that is currently in a natural vegetated state and has not been altered by man-made activities.

PERSON - Any individual, group of individuals, association, partnership, corporation, company, business organization, trust, estate, the Commonwealth or political subdivision thereof to the extent subject to Town Bylaws, administrative agency, public or quasi-public corporation or body, the Town of Uxbridge, and any other legal entity, its legal representatives, agents, or assigns.

PRE-DEVELOPMENT - The conditions that exist at the time that plans for the development of a tract of land are submitted to the Conservation Commission. Where phased development or plan approval occurs (preliminary grading, roads and utilities, etc.), the existing conditions at the time prior to the first plan submission shall establish pre-development conditions.

POST-DEVELOPMENT - The conditions that reasonably may be expected or anticipated to exist after completion of the development activity on a specific site or tract of land. Post-development refers to the phase of a new development or redevelopment project after completion, and does not refer to the construction phase of a project.

RECHARGE - The replenishment of underground water reserves.

REDEVELOPMENT - Any construction, alteration, or improvement exceeding land disturbance of 5,000 square feet, where the existing land use is commercial, industrial, institutional, or multi-family residential.

RUNOFF - Rainfall, snowmelt, or irrigation water flowing over the ground surface.

SEDIMENT - Solid material, whether mineral or organic, that is in suspension, is transported or has been moved from its site of origin by erosion.



SEDIMENTATION - A process of depositing material that has been suspended and transported in water.

SLOPE - The vertical rise divided by the horizontal distance and expressed as a fraction or percentage,

STABILIZED - The elimination of any erosion.

STORMWATER MANAGEMENT HANDBOOK - Stormwater Management Handbook, Volume One and Volume Two, prepared by the Mass. Department of Environmental Protection and the Mass. Office of Coastal Zone Management dated March 1997 as the same may be from time to time revised.

STORMWATER MANAGEMENT PERMIT (SMP) - A permit issued by the Conservation Commission, after review of an application, plans, calculations, and other supporting documents, which is designed to protect the environment of the Town from the deleterious affects of uncontrolled and untreated stormwater runoff.

### 178-3. Applicability

This bylaw shall be applicable to all new development and redevelopment, including, but not limited to, site plan applications, subdivision applications, grading applications, land use conversion applications, any activity that will result in an increased amount of stormwater runoff or pollutants flowing from a parcel of land, or any activity that will alter the drainage characteristics of a parcel of land, unless exempt pursuant to Section D of this Bylaw. A development shall not be segmented or phased in a manner to avoid compliance with this By-Law. After the date of adoption of this bylaw, the Commission shall not approve any application for development or re-development if the subject land or parcels of land were held in common ownership (including ownership by related or jointly-controlled persons or entities) and the Commission determines that said land or parcels of land were subdivided or otherwise modified to avoid compliance herewith. A Stormwater Management Permit shall be required from the Commission for any activity that will result in soil disturbance of more than 5,000 square feet.

### 178-4. Exemptions

The following activities are exempt from the requirements of this Bylaw:

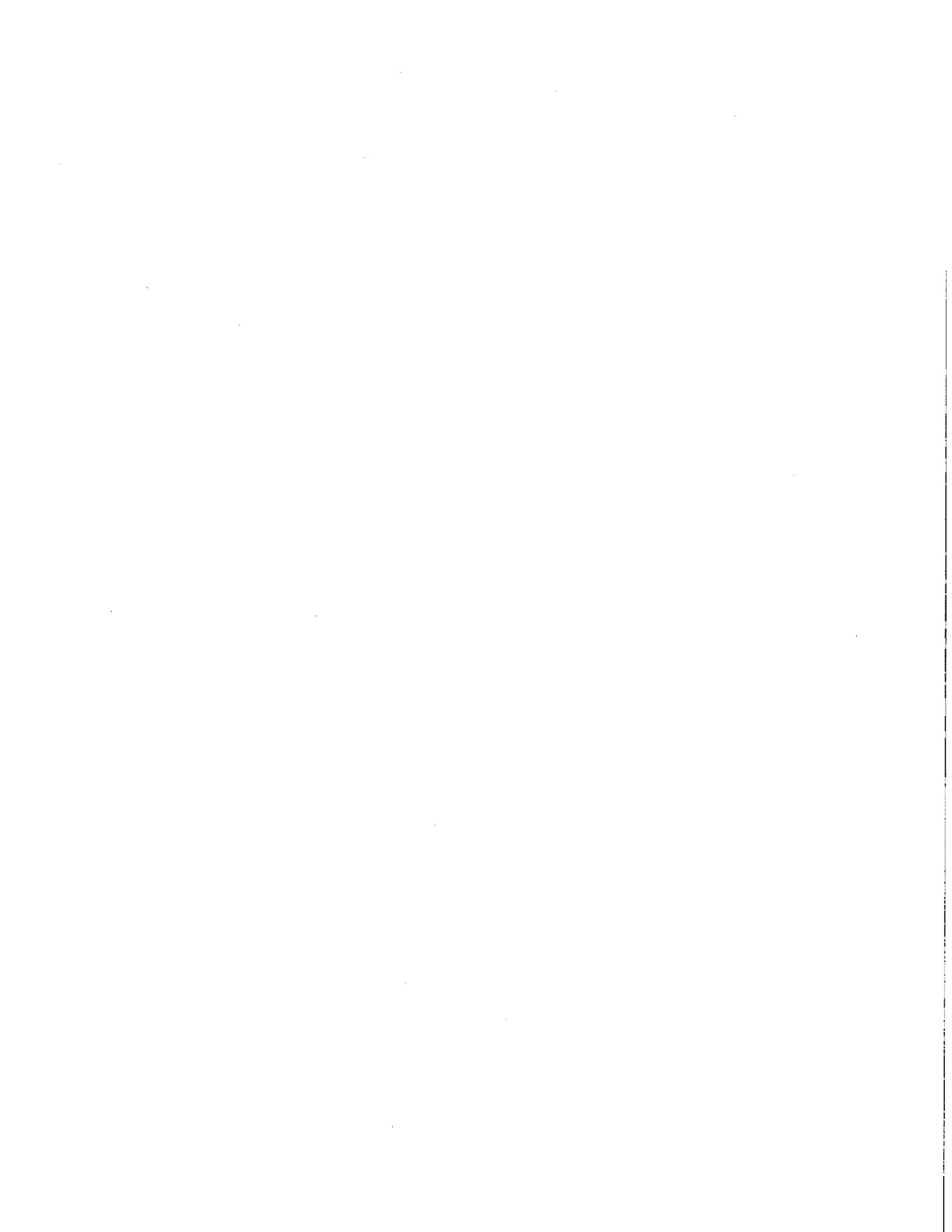
- A. Normal maintenance of Town owned public land, ways and appurtenances;
- B. Normal maintenance and improvement of land in agricultural use as defined by the Wetlands Protection Act regulation 310 CMR 10.04 and MGL Chapter 40A Section 3;
- C. Repair or replacement of septic systems when approved by the Board of Health for the protection of public health;
- D. Normal maintenance of existing landscaping, gardens or lawn areas provided such maintenance does not include the alteration of drainage patterns or expansion of the disturbed area;
- E. The construction of fencing that will not alter existing terrain or drainage patterns;
- F. The maintenance, reconstruction or resurfacing of any public way; and the installation of drainage structures or utilities within or associated with public ways that have been approved by the appropriate authorities provided that written notice be filed with the Conservation Commission fourteen days (14) prior to commencement of activity;



- G. The removal of earth products undertaken in connection with an agricultural use if the removal is necessary for or directly related to planting, cultivating or harvesting or the raising or care of animals, or
- H. Activity in accordance with the terms of an Order of Conditions or Determination of Applicability issued by the Commission pursuant to M.G.L Ch. 131, Section 40 prior to the effective date of this Bylaw.

**178-5. Administration**

- A. The Conservation Commission shall be the permit granting authority for the issuance of a Stormwater Management Permit and shall administer, implement and enforce this Bylaw. Any powers granted to or duties imposed upon the Commission may be delegated in writing by the Commission to its agents or other municipal employees as the Commission deems appropriate. Such permit applications shall be submitted, considered, and issued in accordance with the provisions of this Bylaw and the regulations adopted pursuant to this Bylaw.
- B. Stormwater Regulations. The Commission shall adopt, and periodically amend, rules and regulations relating to the terms, conditions, definitions, enforcement, fees, procedures and administration of this Stormwater Management Bylaw. Failure by the Commission to promulgate such rules and regulations or a declaration of the invalidity of all or any of such regulations by a court shall not be deemed to suspend or invalidate the effect of this Bylaw.
- C. Right of Entry. The filing of an application for a Stormwater Management Permit shall be deemed to be authorization by the owner(s) of any land subject to said application for the Commission or its agent, to enter the site and conduct reasonable inspections thereof to verify the information in the application and to assure compliance with permit conditions.
- D. Stormwater Management Manual. The Commission will utilize the policy, criteria and information including specifications and standards of the latest edition of the Massachusetts Stormwater Management Policy, for execution of the provisions of this Bylaw. This Policy includes a list of acceptable storm water treatment practices, including the specific design criteria for each storm water practice. The Policy may be updated and expanded periodically, based on improvements in engineering, science, monitoring, and local maintenance experience. Unless specifically altered in the Stormwater Regulations, stormwater management practices that are designed, constructed, and maintained in accordance with these design and sizing criteria will be presumed to be protective of Massachusetts's water quality standards.
- E. Application. To obtain approval for a project subject to the provisions of this Bylaw, the applicant shall submit a Stormwater Management Plan and an Operation and Maintenance Plan prepared, stamped and signed by a professional engineer registered in Massachusetts, a Registered Land Surveyor, or a Massachusetts Licensed Soil Evaluator, as appropriate, that complies with the requirements set forth herein and in the regulations adopted pursuant to this Bylaw. The Operation and Maintenance plan (O&M Plan) shall be designed to ensure compliance with the Permit, this Bylaw, and that the Massachusetts Surface Water Quality Standards, 314, CMR 4.00 in all seasons and throughout the life of the stormwater management system. The final, approved O&M Plan shall remain on file with the Commission, the Planning Board, and the Department of Public Works and shall be an ongoing requirement. The O&M Plan shall meet the criteria set forth in the regulations adopted pursuant to this Bylaw. The Plans shall fully describe the project in drawings, narrative, and calculations.
  - a. At the time of application, the applicant shall provide in writing the name and the 24 hours a day and 7 days a week contact information of the person who is responsible





for erosion and sediment control for the site disturbing activity which is the subject of the application. Said person shall ensure that the approved activity takes place in accordance with the application, plan and permit requirements.

#### **178-6. Fees**

The Commission shall establish fees to cover the costs and expenses incurred by the town in reviewing the application and monitoring permit compliance. The Commission is hereby authorized to retain, and assess the applicant fees to cover the cost of hiring, a Registered Professional Engineer or other professional consultant to advise the Commission on any or all aspects of the project. The applicant for a Stormwater Management Permit may be required to establish and maintain an escrow account to cover the costs of said consultants. Applicants shall pay any such review fees to the Commission before the review process may begin.

#### **178-7. Surety**

The Commission may require a cash performance guarantee, in a form satisfactory to the Commission, to ensure compliance with these requirements and for the long term operation and maintenance of all permanent erosion control and stormwater management measures.

#### **178-8. Waivers**

- A. The Commission may waive strict compliance with any of the requirements of this Bylaw or the rules and regulations promulgated hereunder if it determines that the application of any such requirements is unnecessary because of the size or character of the development project or because of the natural conditions at the site, and where such action:
  - (a) is allowed by federal, state and local statutes and/or regulations,
  - (b) is in the public interest, and
  - (c) is not inconsistent with the purpose and intent of this bylaw.
- B. Any request from an Applicant for a waiver of these rules shall be submitted, in writing, to the Commission at the time of submission of the application. Such requests shall clearly identify the provision/s of the rule from which relief is sought and be accompanied by a statement setting forth the reasons why, in the applicant's opinion, the granting of such a waiver would be in the public interest or the specific information required to show strict compliance is irrelevant to the project, and why a waiver would be consistent with the intent and purpose of this Bylaw and the rules and regulations promulgated hereunder.

#### **178-9. Findings and Conditions of Approval**

- A. The Commission shall not approve any application for a Stormwater Management Permit unless it finds that BMPs will be employed to meet the following requirements:
  - (a) Compliance with all applicable federal, state and local regulations and guidelines, including but not limited to the Stormwater Management Handbook as it may be amended, has been demonstrated;
  - (b) Measures shall be employed to minimize adverse impacts on wildlife habitats and corridors, natural or historic landscape features, and scenic vistas and views;
  - (c) The duration of exposure of disturbed areas due to removal of vegetation, soil removal, and/or re-grading shall be set forth in a written time table and approved by the Commission;
  - (d) There shall be no net increase in the rate of stormwater runoff from the site;
  - (e) There shall be no adverse impacts to abutting properties from any increase in volume of stormwater runoff including erosion, silting, flooding, sedimentation or impacts to wetlands, ground water levels or wells;



- (f) Where the site is not proposed to be covered with gravel, hardscape, or a building or structure, a planting plan to ensure permanent re-vegetation of the site has been approved;
  - (g) Areas to be planted shall be loamed with not less than six inches (6") compacted depth of good quality loam and seeded with turf grass seed or other appropriate ground cover in accordance with good planting practice;
  - (h) Dust control shall be used during grading operations if the grading is to occur within five hundred feet (500') of an occupied residence or place of business, school, playground, park, cemetery, or place of worship;
  - (i) During construction, temporary erosion and sedimentation control measures will be employed in accordance with the approved plan;
  - (j) During construction, any site access from a paved public way shall be improved with a gravel apron of fifteen feet (15') wide and at least twenty-four feet (24') long to prevent unstable material from being transported onto the street by vehicle tires or by runoff;
  - (k) Until a disturbed area is permanently stabilized, sediment in runoff water shall be trapped by using a siltation barrier, siltation fences, and/or sedimentation traps;
  - (l) Permanent erosion control and vegetative measures shall be in accordance with the approved plan, and
  - (m) Where applicable, homeowner's, facility or condominium documents shall provide for the long term operation and maintenance of all permanent erosion control and stormwater management measures, including surety.
- B. Based upon the nature of the application, the Commission may impose reasonable requirements or limitations to minimize the impacts, if any, on abutting properties or uses.
  - C. Prior to commencement of any land disturbing activity, the applicant shall record the permit with the Registry of Deeds or Registry District of the Land Court, and shall submit to the Commission written proof of such recording.
  - D. At completion of the project, the owner shall submit as-built record drawings of all structural stormwater controls and treatment best management practices required for the site. The as-built drawing shall show deviations from the approved plans, if any, and shall be certified by a professional engineer registered in Massachusetts.

#### **178-10. Actions by the Commission**

- A. The Commission shall act on each application for a permit within ninety (90) days of the date of filing with the Commission and the Town Clerk, unless an extension of time is mutually agreed upon or unless such application has been withdrawn from consideration.
- B. The Commission may take any of the following actions upon submission of a completed application for a Stormwater Management Permit, as more specifically defined as part of Stormwater Regulations promulgated as a result of this Bylaw: Approval, Approval with Conditions, Disapproval, or Disapproval without Prejudice.
- C. A Stormwater Management Permit may be disapproved if the Commission determines:
  - (a) The requirements of this Bylaw are not met, or
  - (b) The intent of the application is to circumvent other provisions of the Town's Bylaws.
- D. Appeals of Action by the Commission. A decision of the Commission shall be final. Relief from a decision made by the Commission under this Bylaw shall be reviewable by the Zoning Board of Appeals provided that a written appeal is filed within ten (10) business days of the date the decision with the Town Clerk. The remedies specified in this Bylaw are not exclusive of any other remedies available under any applicable federal, state or local law.

#### **178-11. Enforcement & Penalties**



A. Enforcement. The Commission, or its authorized agent/ designated employees of the Town of Uxbridge, shall have the power and duty to enforce this bylaw, its regulations, and any orders, violation notices, and enforcement orders issued pursuant thereto, and may pursue all applicable civil and criminal remedies for such violations.

B. Penalties. Any person who violates any provision of this Bylaw, regulation, or permit issued hereunder, shall be subject to fines, civil action, criminal prosecution, and liens, authorized hereunder or by any other enabling statute, law or regulation.

#### **178-12. Severability**

Any determination that a particular provision or set of provisions in this Bylaw are invalid or unenforceable shall not render ineffective, unenforceable, or inapplicable the remainder of this Bylaw.

Or take any action relative thereto.

**SPONSOR:** Board of Selectmen (DPW Superintendent)

**COMMENTARY:** *The EPA's Non-Point Discharge Elimination System (NPDES) program was implemented several years ago. As part of our effort to comply with that program, the Town then developed a Stormwater Management Plan (in 2003) which called for adoption of a local stormwater management bylaw in advance of the 2008 EPA deadline. This bylaw initiative is only one of many "Best Management Practices" (BMP's) that we are implementing. The proposed bylaw is the product of work by the Stormwater Committee, which has reviewed existing provisions and experiences throughout the Commonwealth in order to establish a bylaw that has well-tested provisions. We are required to protect our water resources from the potentially damaging effects of stormwater runoff and in particular those effects of construction runoff and the changes to runoff that construction can cause. As written, this bylaw is probably the least intrusive document that meets the needs of our accepted plan and is drafted in a manner that will allow the Conservation Commission, as the administering agency, to adopt regulations which will meet the needs and expectations of our residents while implementing the objectives of the NPDES program.*

**MOTION:** *Move to accept Article 20 as printed, excluding the phrase, "Or take any action relative thereto" with the following amendment to correct a typographical error in Section 178-3: replace reference to "Section D" with "Section 4".*

**RECOMMENDATION OF THE BOARD OF SELECTMEN:** Favorable action (2-0-1)

**RECOMMENDATION OF THE FINANCE COMMITTEE:** Favorable action (4-1-2)

This new bylaw is in response to the EPA's acts which govern protection of water resources. The bylaw defines the standards for storm water runoff, in particular for run off involving construction. The EPA deadline on setting these standards is 2008. It is important to note that this Bylaw does not contain specifics on fees, regulations and enforcement. These will be the responsibility of the Conservation Commission (or designates) to develop, hold public hearings and implement.

**VOTE NEEDED:** 2/3 majority vote

Motion seconded

Moderator declares motion did not receive required 2/3 vote.

Motion failed.

#### **ARTICLE 21: GENERAL BYLAW AMENDMENTS**

To see if the Town will vote to amend the General Bylaws by deleting Section (*former XXII*) "Sewer Extension Account," or take any other action relative thereto.

**SPONSOR:** Board of Selectmen (Town Manager)

