Kelley J. Conway, P.E.
Town Engineer

# TOWN OF BILLERICA

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
365 Boston Road
Billerica, Massachusetts 01821
(978) 671-0955

April 28, 2006

U. S. Environmental Protection Agency
Water Technical Unit
P.O. Box 8127
Boston, MA 02114
**RE: NPDES Annual Report**

To Whom It May Concern:

Please find the Town of Billerica's NPDES PII Small MS4 General Permit Annual Report. If you have any questions, do not hesitate to contact us.

Sincerely,

Kelley J. Conway, P.E.
Town Engineer

cc: Massachusetts Department of Environmental Protection

# Town of Billerica

# NPDES PII Small MS4 General Permit Annual Report

**(MA041182)**
**(W-040980)**

# YEAR 3


**Prepared by:**

**The Town of Billerica**
**Department of Public Works**
**Engineering Division**
**365 Boston Road**
**Billerica, Massachusetts 01821**

**Municipality/Organization:** **Town of Billerica**

**EPA NPDES Permit Number:** **MA041182**

**MaDEP Transmittal Number:** **W- 040980**

**Annual Report Number & Reporting Period:** **No. 3: March 05-March 06**

# NPDES PII Small MS4 General Permit Annual Report

## Part I. General Information

Contact Person: Kelley Conway Title: Town Engineer

Telephone #: 978-671-0955 Email: kconway@town.billerica.ma.us

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:

Printed Name: Rocco Longo

Title: Town Manager

Date: April 28, 2006

**Part II. Self-Assessment**

The Town of Billerica has completed the required self-assessment and has determined that our municipality is in compliance with all permit conditions.

## 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 3 (Reliance on non-municipal partners indicated, if any) | Planned Activities – Permit Year 4 |
|---|---|---|---|---|---|
| 1.3.1<br>Revised | Partner with local organization | DPW<br>*Engineering* | Partner with one organization each year. | Continued support and assisted in the development of outreach material with SuAsCo. Partnered with Central Massachusetts Mosquito Control Project. | Continue support and assist in the development of outreach material with SuAsCo. Revisit partnering with O.A.R. for employee training or other activities. |
| 1.3.2<br>Revised | Public Education Materials | BOH | Stormwater brochure and booth at Health Fair | Continued participation at Health Fair. Provided informational handout regarding Billerica Compost program to residents. | Continue participation at Health Fair. Update stormwater display and pamphlets at Town Hall and Board of Health office. |
| 1.3.3<br>Revised | Local schools education program | School Dept. | Present stormwater to two schools each year. | Revised dated teaching materials in preparation for classroom implementation. | Implement classroom outreach to 5th & 6th grade classes using curriculum developed in BMP 1.3.1 |
| 1.3.4<br>Revised | Stormwater Web Page | Engineering | Develop stormwater web page | Stormwater web page in place. | Update web page and add additional links and information. |
| 1.3.5<br>Revised | Cable Access TV Show | BOH | Produce stormwater cable access show<br>*Select a stormwater program for viewing on Billerica Access TV.* | Reviewed available videos for use on Billerica Access TV and selected *After the Storm.* | Obtain VHS copies of *After the Storm* from National Service Center for Environmental Publications, or similar relevant productions for Billerica Access TV. |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 3 (Reliance on non-municipal partners indicated, if any) | Planned Activities – Permit Year 4 |
|---|---|---|---|---|---|
| 1.3.6 | Public Access GIS Tool | Engineering | Provide Town Hall access to GIS stormwater mapping Year 2. | A Beta version of the Web GIS is available to Town employees for review/testing before public release. | Seek additional funding for moving forward with Web GIS public release implementation. |
| Revised | | | *Provide public access to maps of streams, rivers, storm drains and water quality data by Year 5.* | | |
| 1.4.1 | Stormwater flyer to residents | SuAsCo | No Goal(s) for Yr. 3 | N/A | N/A |
| Revised | | *SuAsCo & DPW* | | | |
| 1.4.2 | Stormwater lesson plan | SuAsCo | No Goal(s) for Yr. 3 | N/A | N/A |
| Revised | | *SuAsCo & DPW* | | | |
| 1.4.3 | Stormwater flyer to businesses | SuAsCo | Stormwater flyer to 50% of Town businesses | Received Media Toolkit in April 2006. | Press releases will be distributed to local media. Board of Selectmen will be consulted for appropriate use of "*Stormwater Matters*" banner supplied by SuAsCo. |
| Revised | *Media toolkit and stormwater powerpoint program* | *SuAsCo & DPW* | *Year 3 product changed by SuAsCo* | | |
| 1.4.4 | Stormwater media campaign | SuAsCo | No Goal(s) for Yr. 3 | N/A | Media packet to local media |
| Revised | | *SuAsCo & DPW* | *Develop media information packet* | | |
| 1.4.5 | Stormwater video | SuAsCo | No Goal(s) for Yr. 3 | N/A | N/A |
| Revised | | *SuAsCo & DPW* | | | |

## 2. Public Involvement and Participation

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 3 (Reliance on non-municipal partners indicated, if any) | Planned Activities – Permit Year 4 |
|---|---|---|---|---|---|
| 2.3.1 | Partner / Support a Watershed Organization | DPW | Partner with one local organization each year. | Continued partnership with SuAsCo. | Continue partnership with SuAsCo. Revisit partnering with O.A.R. for employee training or other activities. |
| Revised | | *Engineering* | | | |
| 2.3.2 | Storm drain stenciling program | Engineering | Develop & Implement drain stenciling program | Reviewed stenciling implementation and safety issues. | Implement drain stenciling program. |
| Revised | | | | | |
| 2.3.3 | Stormwater Public Meetings Program | Engineering | Discuss stormwater at one public meeting each year | Stormwater issues discussed at neighborhood meetings held on Michael Road and Cook Street/Alexander Road projects. | Continue to invite public discussion of stormwater at public meetings. |
| Revised | | | *Discuss stormwater at one or more public meetings each year* | | |
| 2.3.4 | Recognition Programs | DPW | Recognize one stormwater savvy business each year | Developed criteria for selecting stormwater savvy businesses | Recognize one stormwater savvy business. |
| Revised | | | | | |
| 2.3.5 | Recreation Department Public Education Program | DPW | Involve Recreation Department in stormwater public education program each year. | Reviewed stormwater literature to be included in Recreation Department mailing. Participated in the review of the Recreation Department's Lampson Field renovations project, which includes various stormwater improvements. | Review/revise stormwater literature to be included in Recreation Department mailing. Continued involvement in the Lampson Field renovations project. |
| Revised | | *Engineering* | | | |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 3 (Reliance on non-municipal partners indicated, if any) | Planned Activities – Permit Year 4 |
|---|---|---|---|---|---|
| 2.3.6 | Annual "Clean the Stream" program | Recreation | Recruit volunteers for each years' stormwater cleaning effort | Held annual Town wide "Green-up" and Town wide "Clean-up" events. Contracted with the Commonwealth of Massachusetts Middlesex Sheriffs Office for assistance with cleaning and preparations of parks, playgrounds, and beach. Contracted with Central Massachusetts Mosquito Control Project to clean 4,770' of streams. | Continue annual Town wide "Green-up" and Town wide "Clean-up" events. Continue affiliations with Central Massachusetts Mosquito Control Project. |
| Revised | | | | | |
| 2.4.1 | Stormwater traveling display | SuAsCo | No Goal(s) for Yr. 3 | Maintained stormwater display and pamphlets at Town Hall and Board of Health office. | N/A |
| Revised | | *SuAsCo & DPW* | | | |
| 2.4.2 | Stormwater poster contest | SuAsCo | Poster contest winners selected | Year 3 product eliminated by SuAsCo. | N/A |
| Revised | | *SuAsCo & DPW* | *Year 3 product eliminated by SuAsCo* | | |
| 2.4.3 | Stormwater photo contest | SuAsCo | Photo contest advertised | Year 3 product eliminated by SuAsCo. | N/A |
| Revised | | *SuAsCo & DPW* | *Year 3 product eliminated by SuAsCo* | | |
| 2.4.4 | Stormwater summit special event | SuAsCo | No Goal(s) for Yr. 3 | N/A | Review "Stormwater Matters" PowerPoint and Media Toolkit and promote stormwater summit. |
| Revised | | *SuAsCo & DPW* | *Promote stormwater summit* | | |
| 2.4.5 | Stormwater super summit | SuAsCo | No Goal(s) for Yr. 3 | N/A | N/A |
| Revised | | *SuAsCo & DPW* | | | |

## 3. Illicit Discharge Detection and Elimination

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year3 (Reliance on non-municipal partners indicated, if any) | Planned Activities – Permit Year 4 |
|---|---|---|---|---|---|
| 3.4.1 | Asset Management Program | DPW | Develop stormwater Asset Management program. | Funding not available to incorporate A/M into capital improvement planning | Pursue funding to incorporate A/M into capital improvement planning. |
| Revised | | *Engineering* | | | |
| 3.4.2 | Storm Drain Map | DPW | GPS field effort of drainage structures. | Verified accuracy and completeness of consultant's drain map. Efforts not complete. | Pursue funding to continue efforts. Continue to verify accuracy and completeness of consultant's drain map. |
| Revised | | *Engineering* | | | |
| 3.4.3 | TMDL, Critical Habitat, Historic Property | DPW | Monitor changes in TMDL, Critical Habitat & Historic Site | Continued to monitor changes in TMDL, critical habitats, and historic sites. | Continue to monitor changes in TMDL, critical habitats, and historic sites. |
| Revised | | *Engineering* | | | |
| 3.4.4 | Stormwater By-Law | DPW | Develop stormwater by-law | Continued to review existing by-laws, regulations and policies regarding drainage and stormwater management and continued discussions on proposed changes. | Develop stormwater requirements for inclusion into Board of Health Regulations. |
| Revised | | *Board of Health* | *Develop stormwater requirements regulated by Board of Health* | | |
| 3.4.5 | Illicit Discharge Detection Program | DPW | Develop phased illicit discharge detection program. | Funding not available to develop illicit discharge detection program. | Pursue funding and work with Woodard & Curran to develop and implement illicit discharge detection program. |
| Revised | | | | | |
| 3.4.6 | Illicit Discharge Elimination Program | DPW | No Goal(s) for Yr. 3 | N/A | Enforce stormwater regulations to correct detected illicit discharges |
| Revised | | | *Enforce stormwater regulations to correct detected illicit discharges* | | |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year3 (Reliance on non-municipal partners indicated, if any) | Planned Activities – Permit Year 4 |
|---|---|---|---|---|---|
| 3.4.7 | Resident education program | | Develop and distribute fliers defining illicit discharges and summarizing the Town By-Law | N/A. Dependent on progress of 3.4.5. | N/A. Dependent on progress of 3.4.5. |
| Revised | | | *Develop and distribute fliers defining illicit discharges and summarizing the Town Stormwater Regulations* | | |

## 4. Construction Site Stormwater Runoff Control

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 3 (Reliance on non-municipal partners indicated, if any) | Planned Activities – Permit Year 4 |
|---|---|---|---|---|---|
| 4.2.1 | Regulatory Controls | Board of Health | Develop "Erosion & Sediment Control" by-law | Drafted Board of Health guidelines for in-house review. | Review and finalize erosion & sediment control regulations |
| Revised | | | | | |
| 4.2.2 | Review and site inspection procedures | Board of Health | Sanctions developed and included in regulations to ensure compliance | Drafted Board of Health guidelines for in-house review. | Review and finalize guidelines. |
| Revised | | | | | |
| 4.2.3 | Enforcement procedures | Board of Health | Develop and implement enforcement procedures an sanctions for stormwater violators | Drafted Board of Health guidelines for in-house review. | Review and finalize guidelines. |
| Revised | | | | | |
| 4.2.4 | Procedures for Handling Public Comments | DPW | Develop & implement public comment procedure | Complaints & comments taken online or through complaint tracking form when received by phone call or over the counter. | Continue development of procedures for receipt and consideration of information submitted by public. |
| Revised | | *Board of Health* | | | |

## 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 3 (Reliance on non-municipal partners indicated, if any) | Planned Activities – Permit Year 4 |
|---|---|---|---|---|---|
| 5.3.1 | Structural stormwater controls | Planning Board | Revise subdivision rules and regulations with new BMP's | N/A. Completed Year 2. | N/A |
| Revised | | | | | |
| 5.3.2 | Zoning Requirements | Zoning Board | Evaluate Zoning By-laws | Zoning by-laws, reviewed to determine where improvements might be made. | Implement findings and revise Zoning by-laws. |
| Revised | | | | | |
| 5.3.3 | Planning Strategies | DPW | Review Current Town Master Plan | Began review of the current Master Plan as it pertains to stormwater. Efforts not complete. | Continue review of the current Master Plan as it pertains to stormwater. |
| Revised | | *Engineering* | | | |
| 5.3.4 | Conditions for private stormwater systems | Engineering | Develop maintenance requirements for private stormwater systems | N/A | Develop maintenance requirements for private stormwater systems |
| Revised | | | | | |
| 5.3.5 | Stormwater infrastructure inspection program | Engineering | Develop technology based inspection program | N/A | Develop technology based inspection program. |
| Revised | | | | | |

## 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 3 (Reliance on non-municipal partners indicated, if any) | Planned Activities – Permit Year 4 |
|---|---|---|---|---|---|
| 6.3.1 | Pollution Prevention Planning | Highway Dept. | Conduct DPW meeting on stormwater pollution prevention | Conducted a DPW meeting on stormwater pollution prevention. | In coordination with Woodard & Curran, develop a Stormwater Pollution Prevention Plan. |
| Revised | | | *Develop a Stormwater Pollution Prevention Plan* | | |
| 6.3.2 | Employee Training Program | DPW | Train Division Leadership | Commenced development of a training program and training tracking system for department employees. | Finalize development of a training program and training tracking system for department employees. Implement employee training. |
| Revised | | | *Implement employee training program* | | |
| 6.3.3 | Recycling Program | Highway Dept. | Monitor recycling program & enhance if necessary | Annual hazardous waste day and continuously operated oil recycling program available on monthly basis. | Monitor and enhance recycling program. |
| Revised | | | | | |
| 6.3.4 | Catch Basin Cleaning Program | Highway Dept. | Clean catch basins each year | Continuous catch basin cleaning by Highway Department. | Clean catch basins and use A/M tool to monitor pounds of cleanings removed. |
| Revised | | | *Use asset management tool to monitor pounds of sediment removed from Town catch basins* | | |
| 6.3.5 | Street Sweeping Program | Highway Dept. | Sweep Streets each year. | Street sweeping across 440 lane miles by Highway Dept. | Sweep streets each year. |
| Revised | | | *Use asset management tool to monitor pounds of sediment removed during street sweeping* | | |

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 3 (Reliance on non-municipal partners indicated, if any) | Planned Activities – Permit Year 4 |
|---|---|---|---|---|---|
| 6.3.6 | Operations and Maintenance | DPW | Inventory ongoing stormwater maintenance activities | Invited the *Commonwealth of Massachusetts Executive Office of Environmental Affairs Office of Technical Assistance* to visit the Town's Highway Department to provide an opinion regarding the Department's existing maintenance operations. | Inventory ongoing stormwater maintenance activities. Develop measures to reduce sources of pollutant runoff. |
| Revised | | | | | |
| 6.3.7 | Reporting | DPW | Continue to track stormwater management activities and submit annual report | Continued to track stormwater management activities and submitted annual report. | Continue to track stormwater management activities and submit annual report. |
| Revised | | | | | |

## 6a. Additions

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s) | Progress on Goal(s) – Permit Year 3 (Reliance on non-municipal partners indicated, if any) | Planned Activities – Permit Year 4 |
|---|---|---|---|---|---|
| 6.3.8 | Mosquito Control Project & Drainage System Maintenance | Engineering | Record of improved drainage system inspection and maintenance. | Through the efforts of the Central Massachusetts Mosquito Control Project, brush and other accumulated debris was removed from culverts and streams. | Continue with Mosquito Control Program. |
| Revised | | | | | |

## 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 3 (Reliance on non-municipal partners indicated, if any) | Planned Activities – Permit Year 4 |
|---|---|---|---|---|---|
| 7.2.1 | Monitor Current Impairment Lists | DPW | Continue to monitor TMDL studies annually and develop programs as appropriate. | Continued to monitor TMDL studies. | Continue to monitor TMDL studies annually and develop programs as appropriate. |
| Revised | | | | | |

## 7b. WLA Assessment

**N/A**

## Part IV. Summary of Information Collected and Analyzed

N/A

## Part V. Program Outputs & Accomplishments (OPTIONAL)

### Programmatic

| | | |
|---|---|---|
| Stormwater management position created/staffed | Yes | |
| Annual program budget/expenditures | $60,000 | |

### Education, Involvement, and Training

| | | |
|---|---|---|
| Estimated number of residents reached by education program(s) | 100 % of 12,145 Households | |
| Stormwater management committee established | No | |
| Stream teams established or supported | Yes | |
| Shoreline clean-up participation or quantity of shoreline miles cleaned | Yes, 4,770' | |
| Household Hazardous Waste Collection Days | | |
| ▪ days sponsored | 1 event | |
| ▪ community participation | 350 | |
| ▪ material collected | 1,500 gal | |
| School curricula implemented | Partial | |

**Legal/Regulatory**

| | In Place Prior to Phase II | Under Review | Drafted | 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**

| | | |
|---|---|---|
| Outfall mapping complete | Yes | |
| Estimated or actual number of outfalls | >1,120 | |
| System-Wide mapping complete | 85% | |
| Mapping method(s) | | |
| ▪ Paper/Mylar | | |
| ▪ CADD | | |
| ▪ GIS | 100% | |
| Outfalls inspected/screened | 60% | |
| Illicit discharges identified | Underway | |
| Illicit connections removed | 0 | |
| % of population on sewer | 65% | |
| % of population on septic systems | 35% | |

**Construction**

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

**Post-Development Stormwater Management**

| | | |
|---|---|---|
| Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control | (%) | |
| Site inspections completed | (# or %) | |
| Estimated volume of stormwater recharged | (gpy) | |

**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) | 1 |
| Total number of structures cleaned | (#) | 3,800 approx. |
| Storm drain cleaned | (each) | 50 approx |
| Qty. of screenings/debris removed from storm sewer infrastructure | (lbs or tons) | Not Available |
| Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.) | | Disposal |
| Cost of screenings disposal | ($) | Not Available |
| | | |
| | | |

| | | |
|---|---|---|
| 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) | Not Available |
| Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) | | Disposal |
| Cost of sweepings disposal | ($) | Not Available |

| | | |
|---|---|---|
| Vacuum street sweepers purchased/leased | (#) | 1 owned |
| Vacuum street sweepers specified in contracts | (y/n) | Y |

| Reduction in application on public land of: ("N/A" = never used; "100%" = elimination) | | |
|---|---|---|
| ▪ Fertilizers | (lbs or %) | N/A |
| ▪ Herbicides | (lbs or %) | N/A |
| ▪ Pesticides | (lbs or %) | N/A |

| Anti-/De-Icing products and ratios | | |
|---|---|---|
| Pre-wetting techniques utilized | (y/n) | No |
| Manual control spreaders used | (y/n) | No |
| Automatic or Zero-velocity spreaders used | (y/n) | Yes |
| Estimated net reduction in typical year salt application | (y/n) | Not Available |
| Salt pile(s) covered in storage shed(s) | (y/n) | Yes |
| Storage shed(s) in design or under construction | (y/n) | In place |

# SuAsCo Watershed Community Council

A community-based alliance that promotes the sustainable economic and environmental well-being of the Sudbury-Assabet-Concord River Watershed

RECEIVED
05 NOV 14 PM 1:39
PUBLIC WORKS DEPT.
BILLERICA, MASS.

November 11, 2005

Dear SWCAP Client:

Welcome to Year 3 of the SuAsCo Stormwater Community Assistance Program (SWCAP)!

a shipping and handling charge to cover

As you know, SWCAP is designed by the SuAsCo Watershed Community Council to help Massachusetts' municipalities annually comply with the outreach and participation control measures of the NPDES Stormwater Phase II Regulations. Our goal is to provide you with a cost-effective, strategic program that you can easily implement in your community to educate and involve the public in stormwater management and meet regulatory requirements.

The Year 3 product is a "Stormwater Matters" Power Point Presentation and a Media Tool Kit. The power point program is geared for the lay public, but may be tailored to any audience depending on your needs. You will also receive a mounted aerial photo map of your community and a stormwater matters banner that will be useful when you present the power point program. As with the Year 1 and Year 2 products, the power point program and media tool kit have been created by experienced watershed professionals and will be pre-reviewed by both EPA and DEP. The expected delivery date of these materials is February of 2006.

It is estimated that it would cost at least twice as much were a community to design and produce these high quality materials using their own paid staff or consultants. SWCAP keeps the costs low by developing the materials with volunteer assistance and by experiencing economies of scale from providing the products to many communities. The more municipalities that purchase SWCAP products, the more we can keep our costs down, so please let your colleagues in other communities know about our program!

I have enclosed an invoice for this year's program. We are offering a discounted price of **$2,500** to communities from whom we receive payment by **December 30**. Please note that if payment is received after December 30, the price is $2,900. Please add **$50** for shipping & handling and mail payment to our address in Stow. If you have difficulty meeting this deadline, please call me as soon as possible.

Thank you for your continued participation in this exciting new program! Please don't hesitate to call me if you should have any questions, or if you would also like to order additional Year 1 or Year 2 materials.

Sincerely,

Nancy

Nancy A. Bryant, Executive Director

Suite 200, 118 Great Road, Stow, MA 01775
978-461-0735 • Fax: 978-461-4771 • E-mail: SuAsCo@compuserve.com • Website: www.SuAsCo.org

100% recycled paper

SuAsCo Watershed Community Council

# INVOICE FOR SUASCO STORMWATER COMMUNITY ASSISTANCE PROGRAM "YEAR 3" PRODUCT

Dept. DPW
Vendor # 4285
Inv. # Year 3 PO #
G.L. Acct. # 30905 5210
G.L. Acct. # 06222 11/23/05
To Payment Amt. $2,550.
Approval
Encumbered (Y/N)
Hold Check for Pick-up (Y/N)
Send Check to Dept. (Y/N)
Check #

**Date: November 11, 2005**

**Invoice # Y3-01**

Title: Director
Department: Public Works
Municipality: Billerica

Address: 365 Boston Road
Address:
State: MA
Zip: 01821

Invoice for payment to the SuAsCo Watershed Community Council for the Year 3 products under the "Stormwater Community Assistance Program":

The "Year 3" products are:

- **Stormwater Matters Power Point Presentation** (digital and hard copy) with an aerial photo map of Billerica and a Stormwater Matters banner; and
- **Stormwater Matters Media Tool Kit** (digital and hard copy).

These BMP products are designed for compliance with the Public Education & Outreach and Public Involvement & Participation control measures of the NPDES Stormwater Phase II Program. Implementation of these tools is the responsibility of the community.

**Cost: $2,500 if payment is received by December 30, 2005**
***[NOTE: Cost is $2,900 if payment is received after December 30, 2005]***
**Plus Shipping & Handling: $50**

**Expected delivery date of Year 3 products is February 2006**

***Payable immediately. Please make check payable to: "SuAsCo Watershed Community Council" (The SuAsCo Watershed Community Council federal tax ID # is 04-3535560.)***

*Please mail to:* *Attn: Nancy Bryant, Executive Director*
*SuAsCo Watershed Community Council, Suite 200*
*118 Great Road, Stow, MA 01775*

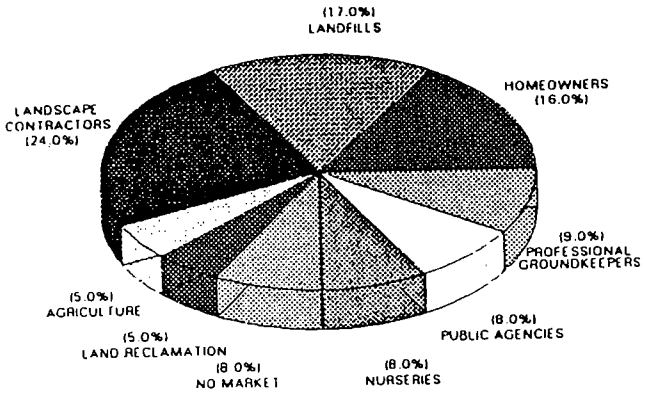
*Please call Nancy Bryant at 978-461-0735 with any questions.*

## ORDERING INFORMATION

Billerica Compost is available free of charge to Billerica residents for home use. Pick-up at the Wastewater Treatment Plant on Letchworth Ave. with suitable containers.

Mon - Fri 1:00 - 3:00 P.M.
Sat 8:00 - 11:00 A.M.

Billerica Compost is available for bulk purchase for commercial users, Call: (978) 671-0956 for details.




### Regulated Substances

| | Billerica Compost Soil Amendment * | State Limits |
|---|---|---|
| Boron | 33.6 ppm | 300 ppm |
| Mercury | 0.4 ppm | 10 ppm |
| Cadmium | 1.98 ppm | 14 ppm |
| Nickel | 4.62 ppm | 200 ppm |
| Lead | 22.6 ppm | 300 ppm |
| Chromium | 16.1 ppm | 1000 ppm |
| Copper | 107 ppm | 1000 ppm |
| Zinc | 277 ppm | 2500 ppm |
| Molybdenum | ND** | |

* Based on December 2003 analysis. Compost analyzed quarterly.

** ND = Non Detectible

# Billerica Compost

TOWN OF BILLERICA
INCORPORATED
1655.
MASSACHUSETTS.


TOWN OF BILLERICA
DEPT. OF PUBLIC WORKS
WASTEWATER TREATMENT FACILITY

LETCHWORTH AVENUE
NORTH BILLERICA, MA
(978) 671-0956


## A GUIDE TO USING MUNICIPAL SLUDGE COMPOST PRODUCT

Join the growing list of responsible Farmers, Topsoil Manufacturers, Contractors, Landscapers and Nurseries already benefiting from quality recycled products.

## BILLERICA COMPOST

### *GENERAL DESCRIPTION*

The Billerica Compost Facility on Letchworth Ave. began operations in August, 1990. The Town has been composting sludge, and wood ash to produce a finished compost that meets all State and Federal standards for land application.

The Massachusetts Department of Environmental Protection (DEP) encourages composting sludge to produce a safe, quality product for beneficial use. Billerica compost soil amendment is suitable for use in residential and commercial landscaping.

**Sludge compost is not recommended for use in vegetable gardens or for any food or forage crop.**

The Town of Billerica and the D.E.P. encourage proper landscape management practices to prevent erosion and surface runoff.

Billerica Compost is a soil enhancing material that will improve soil condition by improving drainage and moisture retention, maintaining an even soil temperature, improving aeration, retaining and distributing plant nutrients and creating a favorable environment for microorganisms, earthworms and other beneficial soil organisms.

## HOW TO USE BILLERICA COMPOST AS A SOIL AMENDMENT

*Perennial and annual flower beds*

Mix 1/3 Billerica Compost with 2/3 garden soil to produce an excellent flower growing medium, or top dress flower beds with compost.

*Tree & Shrub Plantings*

Mix 1/3 Billerica Compost with 2/3 existing soil in a prepared hole for trees or shrubs.

*New Lawns*

Mix 1/3 Billerica Compost with 2/3 topsoil and seed or sod immediately. Apply lime and fertilizer as recommended for best results. For seeded lawns, prevent erosion with straw mulch.

*Existing Lawns*

After aeration, spread Billerica compost lightly over lawn and rake in immediately. Water thoroughly and apply recommended amounts of lime and fertilizer.

*Christmas Trees and Other Tress Plantations*

Spread Billerica Compost lightly over areas to be planted and till in. In established plantings, spread a layer of compost as a soil-enhancing mulch, starting two or three feet from trunk and extending to the drip-line around each tree.

# MAKING COMPOST AT HC

## What Is Composting?

Composting is a means of managing the natural process of organic decay. A great variety of microorganisms, earthworms and other very small animals naturally present in the environment break down the organic materials added to the compost pile, turning them into a fragrant, brown, soil-enhancing material. The composting organisms will do their work naturally if they are provided with food, water, air and a source of nitrogen.

Natural rainfall or an occasional hosing will provide water. Proper construction of the pile and occasional turning with a garden fork will provide adequate aeration. Supply nitrogen by adding grass clippings and small amounts of fresh or dry barnyard manure, or a sprinkling of commercial fertilizer to the pile from time to time. The food will be supplied by the various materials you add to your compost pile.

## What Goes Into Compost?

A wide variety of kitchen, yard wastes and garden waste can be recycled through your backyard compost pile: leaves, weeds, garden trimmings, grass clippings, evergreen needles, kitchen scraps, leftover food, coffee grounds, egg shells, contents of the vacuum cleaner bag, ashes from the wood stove or fireplace. If you trim your own hair or clip your pets, the hair will make a fine, high-nitrogen addition to your compost pile!

## What To Leave Out

Don't add meat scraps, fat, grease or bones to the compost pile. Avoid human wastes, coal ashes and clippings or trimmings from lawns and gardens that have been treated with pesticides or herbicides.

## How To Make Compost

Make your compost in a pile on the ground or in a bin specially designed for the purpose. Snow fencing, recycled lumber, conventional fencing materials, concrete blocks and other inexpensive materials can be used to construct a compost bin. Many department stores and garden centers carry pre-fabricated composting bins.

Locate the compost pile in a well-drained spot in partial shade if possible. The average household can compost all of its yard and kitchen waste in a 5' x 5' x 5' high pile or bin. If your pile gets more than five feet high, begin a new one.

Add materials to your compost pile as they accumulate, making sure to mix coarse and fine materials to achieve good aeration throughout the pile. (A thick layer of leaves or grass clippings, for instance, will mat down and slow the composting process). Periodically add a thin layer of animal manure or commercial fertilizer to supply nitrogen. For best results keep the compost pile thoroughly moist at all times, but never soggy.

Turn the pile thoroughly with a garden fork from time to time. More frequent turning will speed the composting process, but composters who remember to turn their piles only occasionally will also be rewarded with fine compost that simply takes longer to make.

A good composting operation will generate plenty of heat inside the pile. The heat is produced by microorganisms at work breaking down organic matter.

ME

## How To Use Homemade Compost

*Homemade compost is highly recommended for use on vegetable gardens, fruit trees, berry bushes and other food crops.*

*Vegetable Gardens*

Spread compost 1-3 inches deep and leave as a surface much or till in. Use compost in place of soil to fill holes when transplanting seedlings. Top dress mature plantings with compost in midsummer.

*Fruit Trees, Berry Bushes and Stawberry Beds*

Mix equal parts compost and topsoil to add to prepare planting holes when setting out fruit trees, cane fruits, blueberries or stawberry seedlings.

*Flower Beds, Shrubs and Ornamentals*

Mix equal parts compost and topsoil to add to prepare planting holes when setting out seedling, shrubs, trees and other ornamentals.

*New and Existing Lawns*

Apply a thin layer of compost and till in before seeding a new lawn, or spread compost lightly over lawn after aeration and rake it.

## IT'S A DIRTY JOB, BUT WE LOVE IT

- Composting saves tax dollars. The more materials residents recycle through home composting operations the less materials Billerica will need to handle at the curb, transport and pay to process.

- Compostable organic materials, some times called "green waste" collectively make up over one-third of Billerica's waste stream.

- Home composting does not require a lot of space! As organic materials in the pile decompose their volume will decrease dramatically.

- Compost is good for the environment. Composting is a managed process of breaking down organic materials into dark stable humus. Among its many important functions humus in the soil helps retain and distribute moisture and plant nutrients, prevents erosion, buffers the soil from temperature extremes and helps create a loose, open condition that favors easy penetration by plant roots.

- Why buy potting soils and loam when you can make your own compost?

- If you live in a multi-family complex, we will work with you to set up a composition program for your development.

# Stormwater Community Assistance Program

# Stormwater Matters Lesson Plan for 5th or 6th Grade

STORMWATER matters™

SuAsCo Watershed Community Council

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# STORMWATER MATTERS LESSON PLAN FOR 5th or 6th GRADE

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Front Pocket: CD with Lesson Plan in a pdf File Format

# INTRODUCTION

Polluted stormwater is one of the biggest causes of water quality degradation or impairment. This lesson is intended to introduce students to the concept of stormwater, to teach them that storm drains usually transport stormwater to water bodies without treatment, and to help them find things that they can do to reduce stormwater pollution in their community.

Teaching this lesson may lead to many student questions about stormwater and water pollution, as well as related topics such as wastewater treatment and drinking water supply. Several supplemental lesson ideas are provided in this notebook in case you would like to teach additional material beyond the master lesson plan. Teacher background information is also provided, including a list of websites as a useful reference tool for even more detailed information.

Please note that this lesson plan is appropriate for teaching in any watershed.

This stormwater lesson plan material is intended for use only within your community's school system. The lesson plan complies with federal and state permit requirements that mandate community outreach and involvement on stormwater issues.

This lesson plan was created by the SuAsCo Watershed Community Council under its "Stormwater Community Assistance Program". The Council is a non-profit alliance of businesses, municipalities, environmental organizations, and state/federal/regional government agencies in the Sudbury-Assabet-Concord River Watershed in Massachusetts. For more information about stormwater and the Council, you can visit the SuAsCo website at **www.suasco.org.**

**Thank you for taking the time to teach this important lesson. We hope that you and your students will enjoy learning about stormwater!**

# STORMWATER MATTERS
# MASTER LESSON PLAN

**Grade Level:** recommended for 5th or 6th grade

**Objectives:**

To learn what stormwater is and where it goes.
To learn that most storm drains transport stormwater to water bodies without treatment.
To identify how people's actions affect the quality of stormwater.
To identify how students can help to reduce water pollution from stormwater.

**Connection to the Massachusetts Science and Technology Frameworks:**

Strand 1: Earth and Space Science:
Grades 3 – 5: Weather, The Water Cycle, Earth's History
Grades 6-8: Mapping the Earth, Earth's History

**Time Needed:**

This basic lesson is expected to take 45 minutes to one hour to teach. The exact length of this lesson will depend on the extent of discussion and the time allotted for group exploration. Depending on your students' interest and knowledge, you may elect to speed up or slow down the various parts of this lesson plan. The lesson has many obvious breaking points should you elect to divide it into smaller content periods. For instance, you may elect to spend one class period just on examining the maps (Procedure Parts 1 and 2), and spend the next class on the stormwater discussion (Procedure Parts 3 through 8).

**Materials:**

Map of major watersheds in Massachusetts
Town map showing water resources
Notebook containing:

- Master lesson plan: 45-minute class time minimum
- Assessment materials
- Teacher's background information
- Seven supplemental lesson ideas

You will also need:

- Sponge
- Water bottle with drip spout

Note: As a participating community in the SuAsCo Stormwater Community Assistance Program, your town was given five sets of these materials. In teaching this lesson, you may wish to obtain the other sets in order to have more maps to use with your class. Please contact your local stormwater coordinator if so interested.

Administration

Cemetery, Trees & Parks

Engineering

Highway

Wastewater

Water

Snow Removal

Stormwater Management

DPW Home

# STORMWATER MANAGEMENT

## WHAT IS A STORMWATER MANAGEMENT PLAN?

The Environmental Protection Agency (EPA) has mandated that certain communities such as Billerica must file for a permit under the Phase II National Pollutant Discharge Elimination System (NPDES) program. This program requires communities such as Billerica to create a Stormwater Master Plan that address six Minimum Control Measures.

These measures will be addressed by the Town implementing Best Management Practices (BMPs) appropriate for Billerica's community. The BMPs will commence according to the schedules provided in the NPDES Phase II Permit. The six Minimum Control Measures for stormwater enhancements are as follows:

- Public Education & Outreach
- Public Involvement & Participation
- Illicit Discharge Detection & Elimination
- Construction Site Stormwater Runoff Control
- Post Construction Stormwater Runoff Control
- Good Housekeeping in Municipal Operations

For any questions or comments about the Town of Billerica's Stormwater Management Program, please contact Paul Starratt, program coordinator, by email at pstarratt@town.billerica.ma.us or by phone at 978-671-0955.

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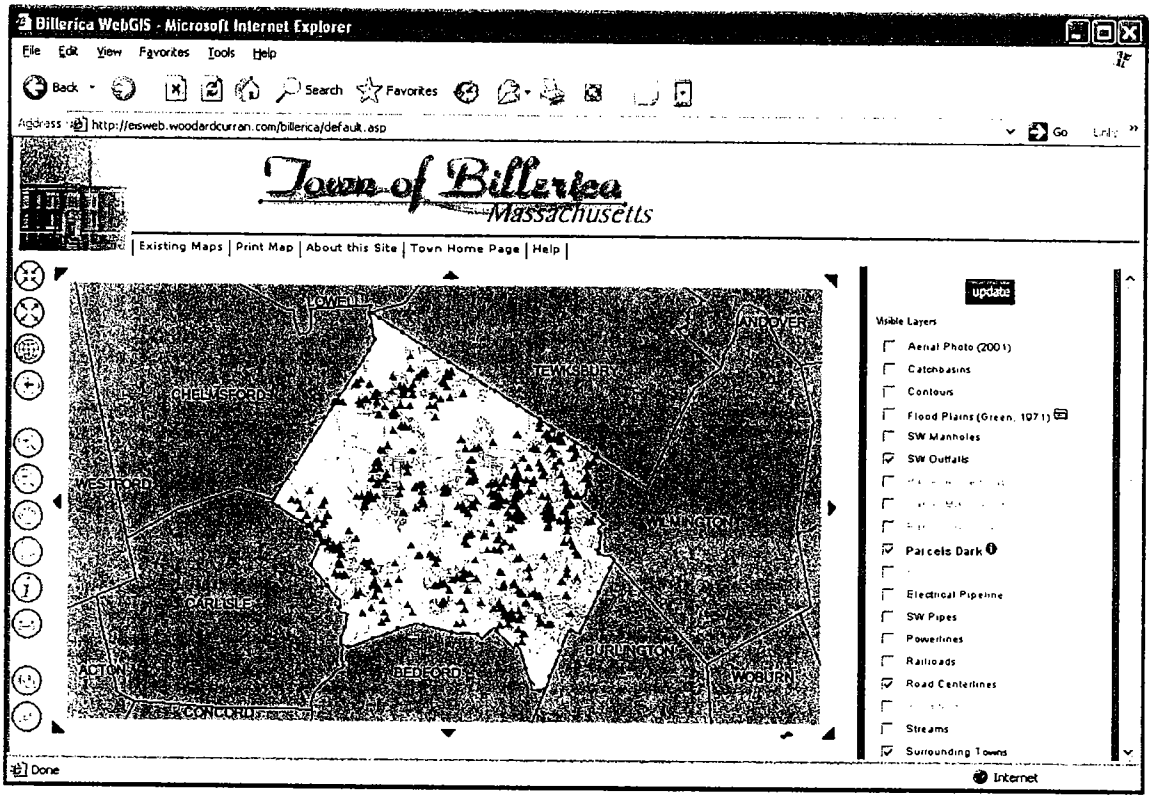
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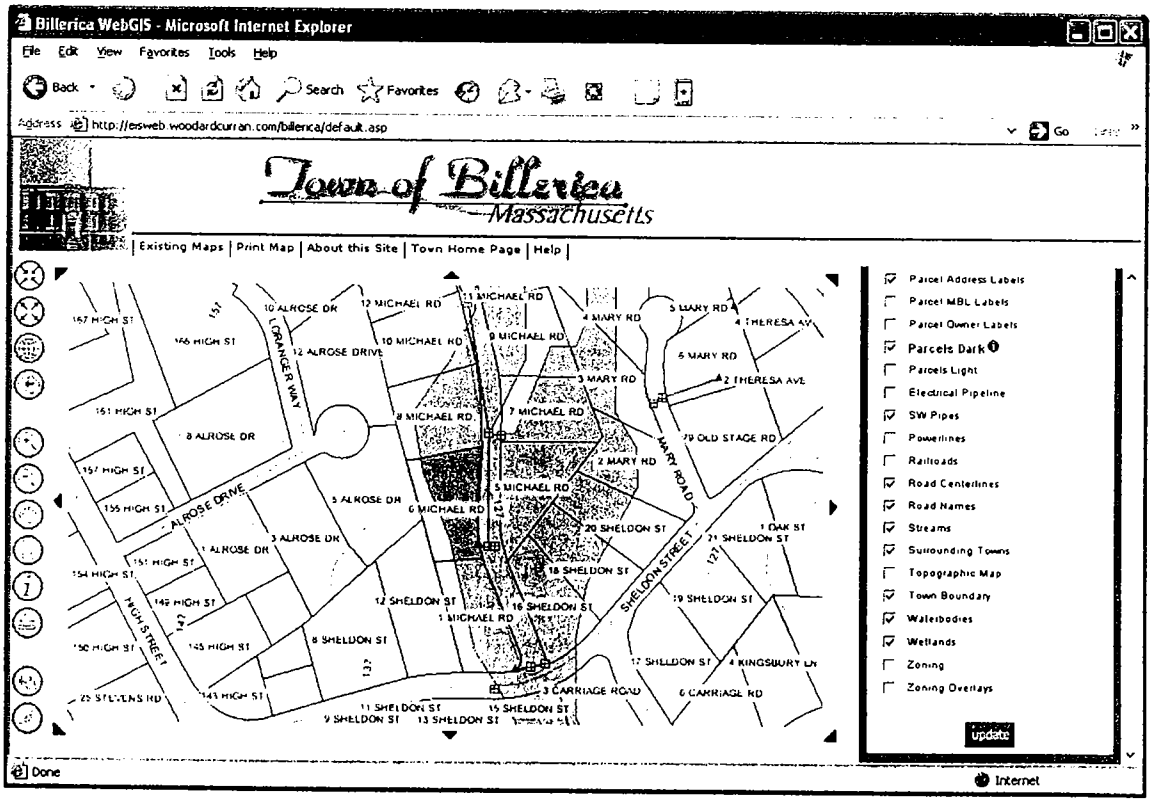
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Railroads
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# STORMWATER COMMUNITY ASSISTANCE PROGRAM

# "YEAR 3" IMPLEMENTATION POINTERS

*Note: these materials have been reviewed and praised by EPA and DEP*

## MEDIA TOOLKIT:

- A hard copy of the Media Toolkit is provided in this folder – the digital version on the CD is in Microsoft Word and is labeled as **"mediatk.doc"**
- The five press releases are intended to serve as a series on stormwater topics that you can sequentially submit to the local newspapers and cable stations
- The press release templates are intended to be modified - copy the digital file on to your system and edit as needed
- All template areas in **underlined bold** must be customized to your community
- The templates may also be further modified according to your needs and situation

## STORMWATER POWERPOINT PROGRAM:

- A hard copy of the PowerPoint program is provided in this folder – the digital version on the CD is in Microsoft PowerPoint and is labeled as **"storm.ppt"**
- Please note that "Talking Points" have been provided to aid in the delivery of the PowerPoint Program – the talking points are in hard copy in this folder, and on the CD in Microsoft Word and labeled as **"talkpts.doc"**
- The PowerPoint Program can be delivered to any audience of any background or age by tailoring your comments to the knowledge level of your audience
- Please **only** present this PowerPoint Program in your community

## STORMWATER SUMMIT TIPS:

- It is recommended that you organize a Stormwater Summit for your community
- The Summit Agenda may include: delivery of the PowerPoint Program, a speaker to explain what your community is doing to comply with the Stormwater Phase II regulations, a discussion on any proposed local stormwater and erosion control bylaws, and a question and answer session
- Potential Summit speakers include representatives from the department of public works, conservation commission, board of health, etc.
- Be sure to advertise the Stormwater Summit – use the summit press release in the media toolkit – contact the local newspapers and cable station and use any other means of meeting notification
- Film the Stormwater Summit so that it can be aired on your local cable station

## ADDITIONAL MATERIALS FOR DISPLAY:

- 2006: "Stormwater Matters" Banner and Aerial Photo Map
- From previous years: tabletop display and any remaining year 1 flyers
- Display at: PowerPoint presentation, stormwater summit, town events, meetings, etc.

**To purchase extra materials or for any questions,**
**call Nancy Bryant, SuAsCo Watershed Community Council at 978-461-0735**

# STORMWATER MATTERS

# MEDIA TOOLKIT

STORMWATER
matters.

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STORMWATER matters.

# PRESS RELEASE

FOR IMMEDIATE RELEASE
**Date**

For further information contact:
**local name and phone number**
Nancy Bryant, 978-461-0735

*Editor's note: this article is part of a series on "Stormwater Matters" to help inform the public on the effects and clean up of stormwater.*

## WHAT IS STORMWATER AND WHY DOES IT MATTER?

Stormwater is the runoff water from rain and snowmelt. Stormwater picks up pollutants from developed land and carries these pollutants to our streams, ponds, wetlands and the ocean. Stormwater pollutants include litter, sand, bacteria, and chemicals such as fertilizer and herbicides from lawns and oil and gas from cars.

Runoff from paved or impervious surfaces, such as roads, parking lots, driveways and rooftops, can contribute large amounts of polluted stormwater. To prevent flooding, parking lots and streets are often lined with storm drains to quickly move stormwater off the pavement. Because storm drains have underground pipes that channel the stormwater directly to a nearby water body, whatever flows down a storm drain comes out in the closest wetland, stream, or pond, usually with little or no treatment.

Stormwater pollution is one of the most difficult sources of water pollution to control. Because stormwater pollution is caused by the daily activities of people everywhere, public awareness of the steps citizens can take to prevent stormwater pollution will help to protect our water resources. By putting fewer pollutants on the land, stormwater will be cleaner as it flows into our lakes, rivers and the ocean.

Clean water is necessary for drinking, swimming, fishing, boating, and for protecting wildlife. It is far less costly to prevent pollution to waterways than it is to clean them up after the fact. Keeping stormwater clean not only benefits our neighborhood and community, it benefits the entire network of water bodies and land that make up our watershed.

**Include a local quote**

Keeping stormwater clean is a community-wide effort. **Town/city** is required to comply with State and Federal regulations on managing stormwater. Residents can help by properly caring for their lawns and cars, not littering, never putting anything down storm drains, and taking part in local "Stormwater Matters" outreach and education activities.

Watch for the stormwater logo and help spread the word: stormwater matters!

# # # # # # #

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## TIPS FOR REDUCING STORMWATER POLLUTION

Stormwater is the runoff water from rain and snowmelt. Stormwater picks up litter, sand, bacteria and chemicals from developed land and carries these pollutants to our streams, ponds, wetlands and the ocean. Stormwater pollution is one of the most difficult sources of water pollution to control.

Runoff from paved or impervious surfaces, such as roads, parking lots, driveways and rooftops, can contribute large amounts of polluted stormwater. To prevent flooding, parking lots and streets are often lined with storm drains to quickly move stormwater off the pavement. Storm drains have underground pipes that channel the stormwater directly to a nearby water body, usually with little or no treatment.

Whatever flows down a storm drain will come out in a nearby water body. Tips for taking care of storm drains include:

- Never put anything down a storm drain, including pet waste, motor oil, paint, litter, leaves, or sand
- Don't block storm drains with refuse or debris.

Cleaning up stormwater pollution is a task that the whole community can take part in. There are many things that residents can do to clean up stormwater quality.

Lawns can contribute stormwater pollutants through fertilizers, pesticides, and herbicides. Steps that homeowners can take to reduce stormwater pollution from lawns include:

- Use fertilizer, pesticides, and herbicides sparingly
- Try using organic lawn care methods
- Mow 2 to 3 inches high to encourage dense growth and deter weeds
- Mulch lawn clippings and leaves
- Do not over-water your lawn
- Reduce lawn size by planting rock gardens, shrubs and trees
- Replant bare areas to stop erosion
- Maintain native vegetation along streams and lakefronts.

Cars can pollute stormwater with gas, oil, antifreeze, metals, and detergents. Steps that car owners can take to reduce stormwater pollution from cars include:

- Keep your car well maintained to prevent fluid leaks
- Recycle motor oil, antifreeze, tires, and batteries
- Use a commercial carwash or wash your car on the lawn using small amounts of low-phosphate detergents.

Other tips to help clean up stormwater include:

- Pick up after pets and dispose of droppings in the toilet or trash
- Aim roof downspouts away from paved surfaces or into a rain barrel
- Dispose of paint, oil, and other household chemicals at a local hazardous waste collection day
- Don't litter – instead recycle paper, cardboard, cans, plastic and glass
- Start stream teams to help care for neighborhood streams
- Coordinate neighborhood storm drain stenciling activities
- Support community efforts to keep stormwater clean.

Cleaning up pollutants on the land and taking good care of storm drains results in cleaner stormwater, and cleaner stormwater means cleaner water for drinking, swimming, fishing, boating and wildlife.

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## KEEPING UP WITH STORMWATER REGULATIONS

Stormwater, the runoff water from rain and snowmelt, is one of the most difficult sources of water pollution to control. Stormwater picks up pollutants from developed land and carries these pollutants to our streams, ponds, wetlands, and the ocean. Stormwater pollutants include litter, sand, bacteria, and chemicals such as fertilizer and herbicides from lawns and oil and gas from cars.

Runoff from paved or impervious surfaces, such as roads, parking lots, driveways and rooftops, can contribute large amounts of polluted stormwater. To prevent flooding, parking lots and streets are often lined with storm drains to quickly move stormwater off the pavement. Storm drains have underground pipes that channel the stormwater directly to a nearby water body, usually with little or no treatment.

The U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP) began regulating stormwater in 1990 under the National Pollutant Discharge Elimination System permit program. Stormwater Phase I targeted large urban areas with populations of 100,000 or greater, which included Boston and Worcester. Stormwater Phase II compliance began in 2003 for urban areas with populations of less than 100,000.

242 of the 351 municipalities in Massachusetts, as well as many public agencies, are now covered under Stormwater Phase I or II. Regulated municipalities are required to implement a Stormwater Management Program by 2008 that addresses the following six "minimum control measures":

1) Public Education and Outreach
2) Public Involvement and Participation
3) Illicit Discharge Detection and Elimination
4) Construction Site Runoff Control
5) Post-Construction Runoff Control
6) Pollution Prevention/Good Housekeeping for Municipal Operations.

"I believe EPA's Stormwater Program has helped many municipalities focus attention on its often long neglected stormwater infrastructure," says David Gray, Environmental Engineer with EPA's Stormwater Program. "Residents play an essential role in

supporting their municipality's stormwater management program by choosing daily behaviors that reduce or eliminate pollution or other problems at the source, thus avoiding more costly or difficult maintenance or remediation of the stormwater system or receiving waters. By complying with EPA's stormwater regulations, a municipality can experience economic benefits from a decrease in flooding and erosion problems, and a reduction in the degradation of its water resources."

In compliance with the Stormwater Phase II program, **town/city** performs many activities that are critical to keeping stormwater clean. Street sweepers pick up sand and winter debris from the streets so that it won't be washed into storm drains. Storm drains have catch basins, some with sumps to trap heavy particles and hoods to trap oils, that must be cleaned out regularly by the public works department to keep the storm drains clear.

Keeping stormwater clean and complying with the Stormwater Phase II regulations is a community-wide effort. Residents can help by properly caring for their lawns and cars, not littering, never putting anything down storm drains, and taking part in local "Stormwater Matters" outreach and education activities.

#######

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## LOW IMPACT DEVELOPMENT

Increasing development brings new challenges on how to manage stormwater, the runoff water from rainstorms and snowfall. Typically, as development increases, impervious surfaces, such as pavement and rooftops also increase, resulting in fewer areas where stormwater can seep back into the ground. More pavement means more stormwater, which leads to more flooding dangers, erosion, sedimentation and surface water pollution.

Planners have coined the phrase "low impact development" or "LID" to refer to a whole suite of new development design techniques that help to reduce stormwater volume and stormwater pollution. LID strategies follow the lay of the land, preserving natural systems that increase recharge to the groundwater, keep streams and rivers cleaner, and give development a more natural appearance.

LID employs landscaping and design techniques that help to capture rainfall and increase recharge. Many LID techniques are non-structural, simple treatment strategies. LID techniques tend to be more aesthetic and less costly than the typical structural means of managing stormwater. Examples of LID strategies include retention ponds, permeable pavement, vegetated swales, rain barrels, green roofs, bioretention areas, rain gardens, downspout (gutter) disconnections, and special roadway and parking lot designs.

According to Martin Pillsbury, Manager of Regional Planning at the Metropolitan Area Planning Council (MAPC) in Boston, "We need to treat stormwater as a valuable resource, to capture it and retain it in its watershed. LID techniques do just this, helping communities conserve water while keeping the water local."

MAPC has published a guide on how to use LID techniques which is available at MAPC's website, www.mapc.org/lid.

**Add in your own paragraph here on examples of LID in your municipality and/or new or proposed LID bylaws.**

# # # # # # #

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## TOWN/CITY STORMWATER SUMMIT

The **town/city** of _____ department of _____ is hosting a "Stormwater Summit" on **date at time at location**. The general public, local officials, businesses, developers, builders, and the media are encouraged to attend.

Stormwater is the runoff water from rain and snowmelt. Stormwater picks up pollutants from developed land and carries these pollutants to our streams, ponds, wetlands and the ocean. Stormwater pollutants include litter, sand, bacteria, and chemicals, such as fertilizer and herbicides from lawns and oil and gas from cars. Stormwater pollution is one of the most difficult sources of water pollution to control because it is so ubiquitous.

Runoff from paved or impervious surfaces, such as roads, parking lots, driveways and rooftops, can contribute large amounts of polluted stormwater. To prevent flooding, parking lots and streets are often lined with storm drains to quickly move stormwater off the pavement. Storm drains have underground pipes that channel the stormwater directly to a nearby water body, usually with little or no treatment.

Because stormwater pollution is caused by the daily activities of people everywhere, public awareness of the steps citizens can take to prevent stormwater pollution will help to protect our water resources. Speakers at the Stormwater Summit will highlight tips that residents can follow to reduce stormwater pollution, explain what our community is doing to comply with State and Federal stormwater regulations, and discuss the importance of water quantity and quality to **town's/city's** natural resources.

The Stormwater Summit agenda includes a slide show entitled "Stormwater Matters: What is Stormwater and Why Should I Care", a presentation showcasing **town's/city's** stormwater compliance with State and Federal stormwater requirements, **a discussion on the proposed local stormwater bylaw,** and a question and answer session. Informational handouts will be available.

**Include a local quote**

For more information about the Stormwater Summit, contact **name at department at phone number or visit the town's/city's website at website address**.

# # # # # # #

# Stormwater Matters

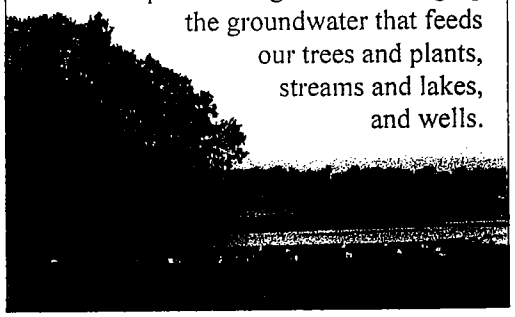
What is Stormwater and Why Should I Care?

When it **rains**

Or **snows**

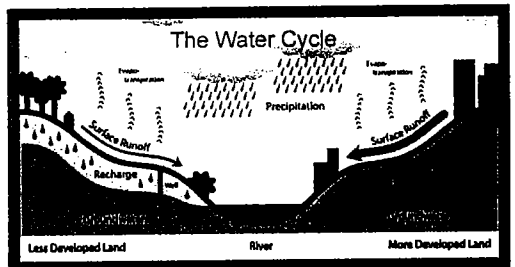
Where does all the water go?

Some precipitation evaporates. Some seeps into the ground, recharging the groundwater that feeds our trees and plants, streams and lakes, and wells.

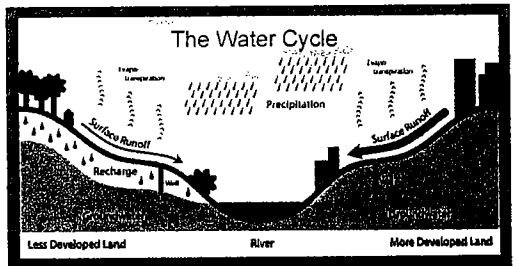


Some precipitation runs off the land and is called…

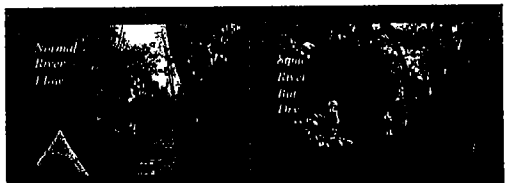
**STORMWATER**




Precipitation seeps into *pervious* surfaces like soil and sand and runs off *impervious* surfaces like pavement and rooftops.




Notice that the groundwater table is higher in the "less developed" land than in the "more developed" land – that's because there's more recharge in areas with less pavement.



More pavement leads to more flooding which leads to more water rushing downstream during storms ("higher highs")

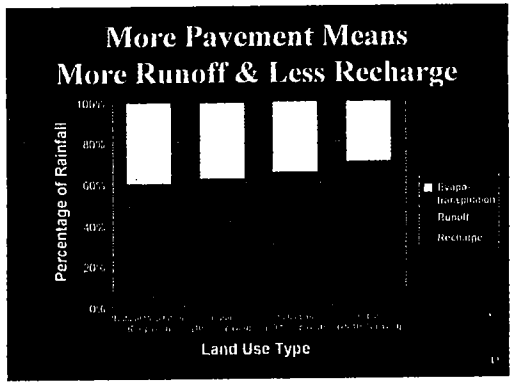
…which means there's less recharge getting into the groundwater to feed river flow during periods of low rainfall ("lower lows").

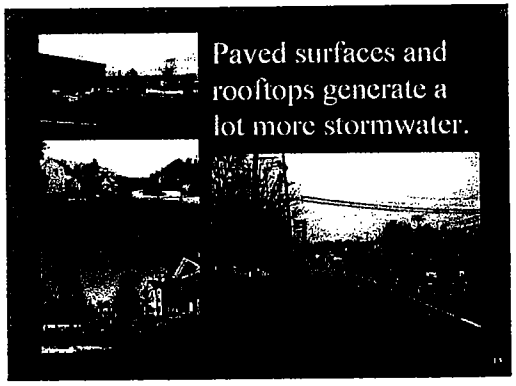
Just how much precipitation do we get in Massachusetts?

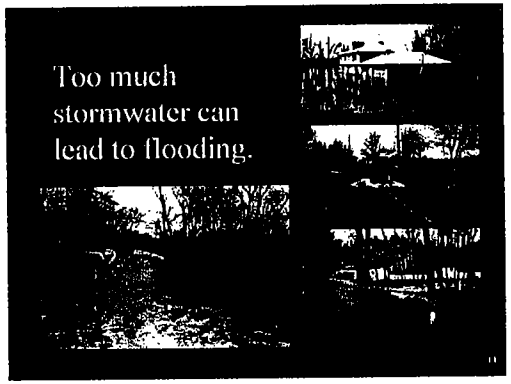
Annually, Massachusetts receives an average of 45 inches of precipitation, that includes rain and melted snow.

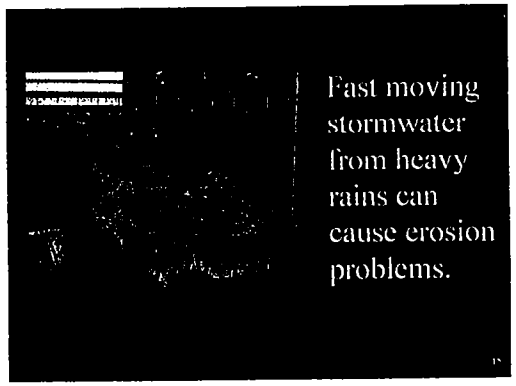
Where all that precipitation goes will depend on how fast it falls...

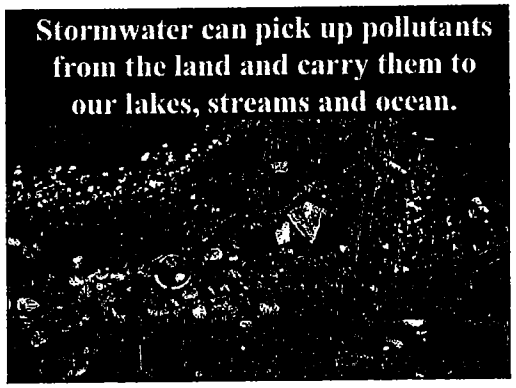
…and the type of surface it falls on.

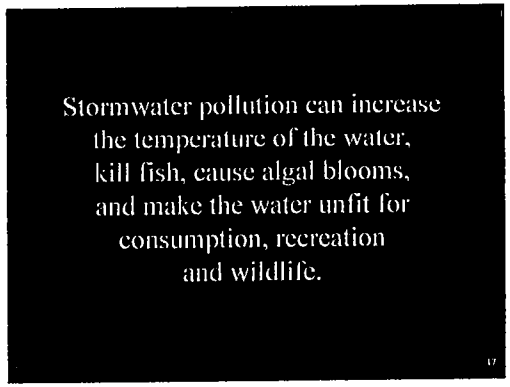


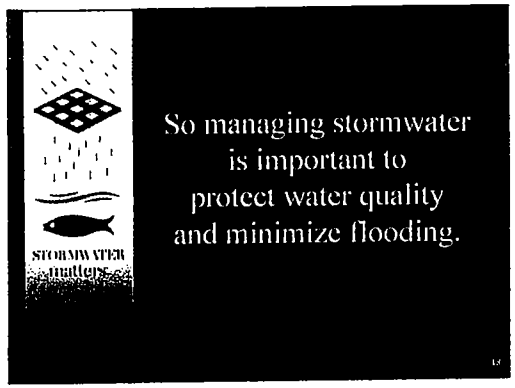

Paved surfaces and rooftops generate a lot more stormwater.

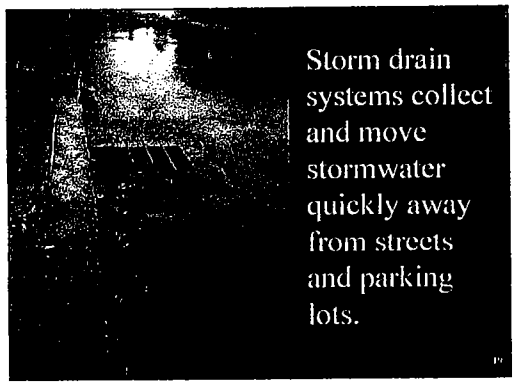

Too much stormwater can lead to flooding.

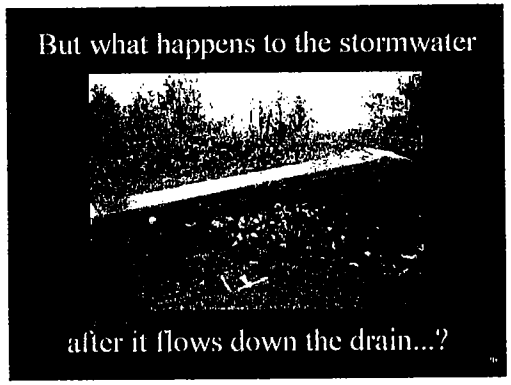

Fast moving stormwater from heavy rains can cause erosion problems.

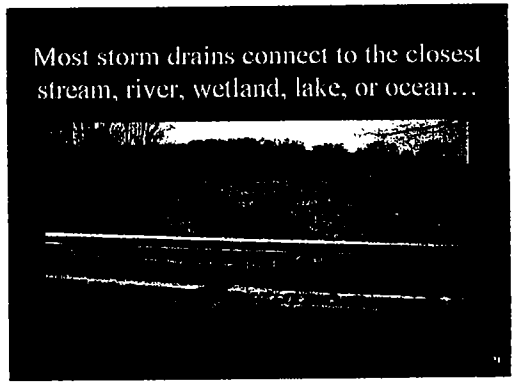

Stormwater can pick up pollutants from the land and carry them to our lakes, streams and ocean.

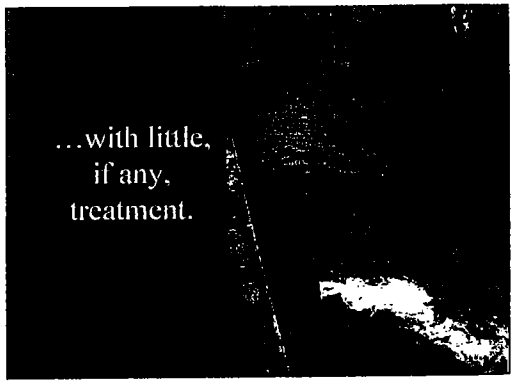

Stormwater pollution can increase the temperature of the water, kill fish, cause algal blooms, and make the water unfit for consumption, recreation and wildlife.

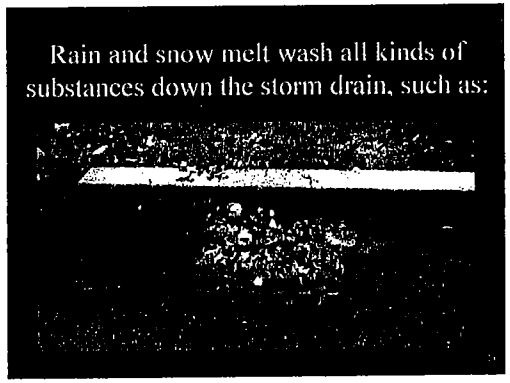

STORMWATER matters
So managing stormwater is important to protect water quality and minimize flooding.

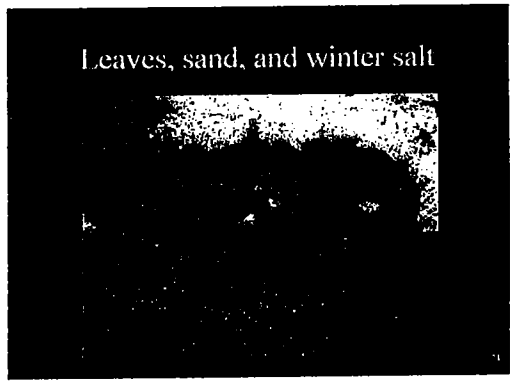

Storm drain systems collect and move stormwater quickly away from streets and parking lots.

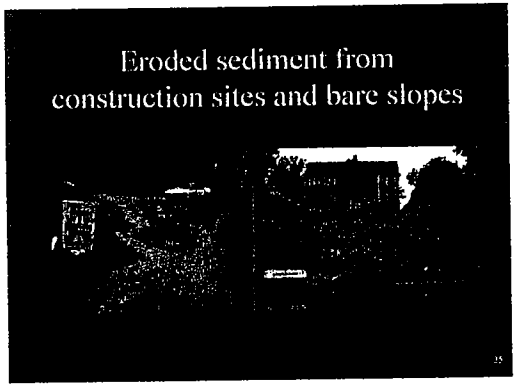

But what happens to the stormwater
after it flows down the drain...?

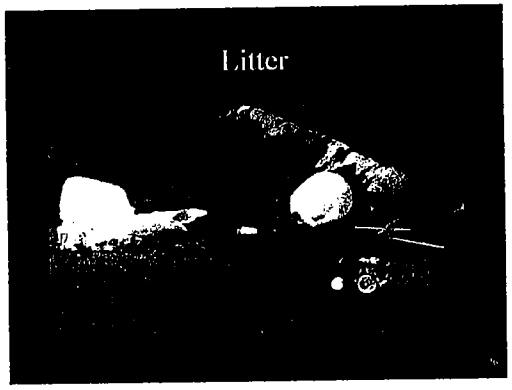

Most storm drains connect to the closest stream, river, wetland, lake, or ocean…

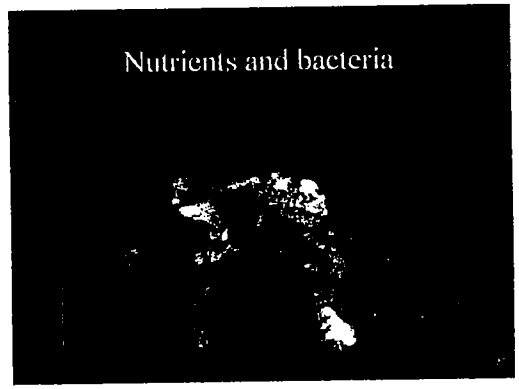

…with little, if any, treatment.

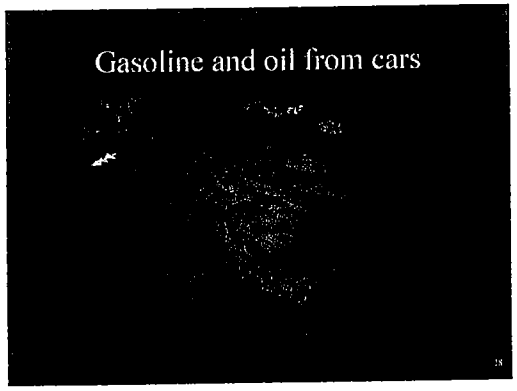

Rain and snow melt wash all kinds of substances down the storm drain, such as:

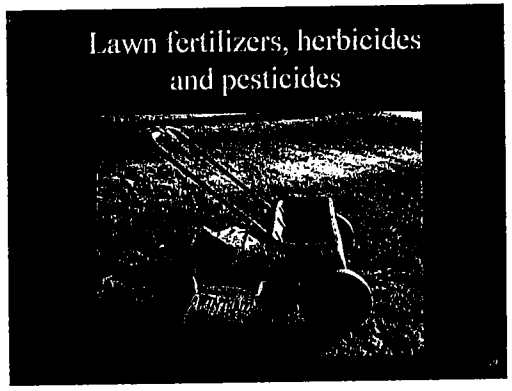

Leaves, sand, and winter salt

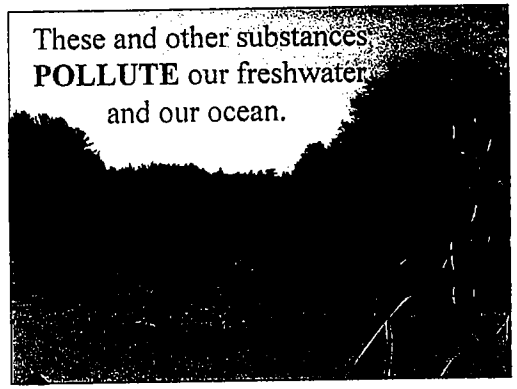

Eroded sediment from
construction sites and bare slopes


Litter

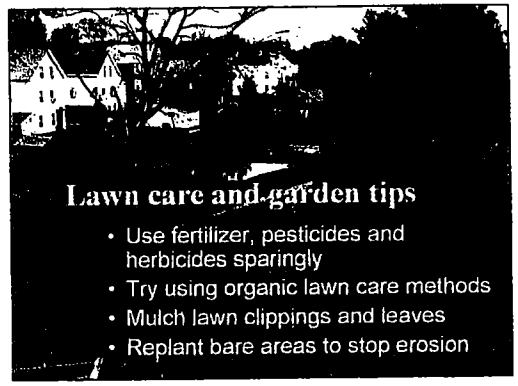

Nutrients and bacteria


Gasoline and oil from cars


Lawn fertilizers, herbicides
and pesticides

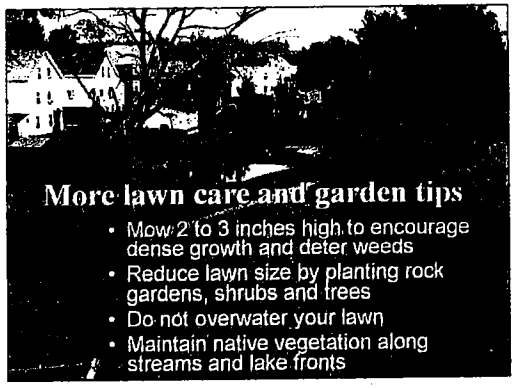

These and other substances
POLLUTE our freshwater
and our ocean.

So what can you do?



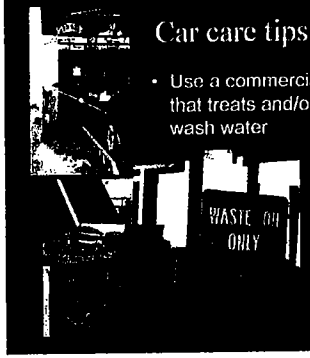
## Lawn care and garden tips

- Use fertilizer, pesticides and herbicides sparingly
- Try using organic lawn care methods
- Mulch lawn clippings and leaves
- Replant bare areas to stop erosion



## More lawn care and garden tips

- Mow 2 to 3 inches high to encourage dense growth and deter weeds
- Reduce lawn size by planting rock gardens, shrubs and trees
- Do not overwater your lawn
- Maintain native vegetation along streams and lake fronts




## Car care tips

- Use a commercial carwash that treats and/or recycles the wash water
- Maintain your car to prevent fluid leaks
- Recycle motor oil, antifreeze, tires, and batteries

## More ideas

- Pick up after your pet - dispose of droppings in the toilet or trash

- Aim your roof downspouts away from paved surfaces or into a rain barrel

- Dispose of paint, oil and other household chemicals at a local hazardous waste collection day
- Recycle paper, cardboard, cans, plastic, and glass

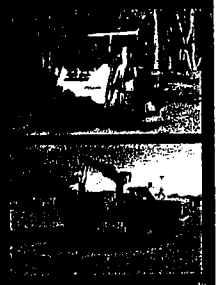
## Teach others about stormwater

## Take care of storm drains:

- NEVER put anything down a storm drain, including pet waste, motor oil, paint, litter, leaves, sand
- Sweep leaves and debris away from storm drains
- Start a storm drain stenciling program in your neighborhood

## Support your town services, such as:

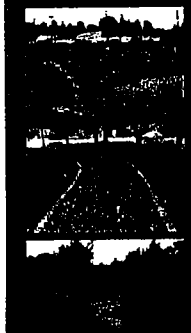
- Street sweeping to pick up sand and winter debris before it gets washed down the storm drain
- Catch basin cleaning to clean out heavy particles caught in the storm drain



A new planning approach called LID or

**Low Impact Development**

also helps to reduce stormwater volume and pollution. LID strategies are landscaping and design techniques that help to capture rainfall and increase recharge.



## Examples of LID strategies include:

- Retention ponds
- Permeable surfaces
- Vegetated swales
- Rain barrels
- Green roofs
- Bioretention areas
- Special roadway and parking lot designs

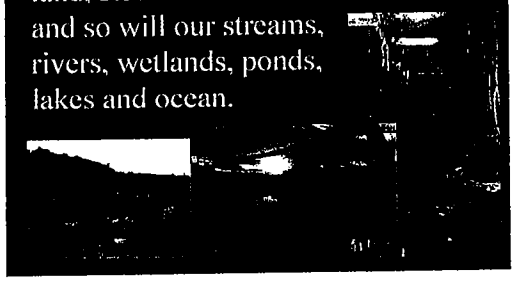
Good stormwater management makes sound economic sense – protecting our water resources saves taxpayers money.

Our community must comply with Federal and State requirements to manage stormwater quality and flow…

…and we need **YOUR** help.

Cleaning up stormwater benefits our neighborhoods and our community by giving us cleaner water for drinking, swimming, fishing, boating, and protecting wildlife.

By putting fewer pollutants on the land, stormwater will be cleaner, and so will our streams, rivers, wetlands, ponds, lakes and ocean.



STORMWATER matters

# Please spread the word:

*Stormwater matters to us all!*

www.stormwatermatters.org

STORMWATER matters

This slide show was produced by the SuAsCo Watershed Community Council. Special thanks to the following Stormwater Committee members and photographers:

- Sara Beckhold
- Nancy Bryant
- Lisa Eggleston
- Steve Lopp
- Roger Hammond
- Linda Hubley
- Marie Jakonski
- Nancy Koehler
- Liz Kolowski
- Denise LeBlanc
- David Manogian
- Phil Nadeau
- Barbara Offenhartz
- George Russell
- Paul Starratt
- Ellen Weitzler

www.stormwatermatters.org

STORMWATER matters.

# "Stormwater Matters" PowerPoint Talking Points

*You can tailor this slide show to any audience*

*Incorporate community-specific information wherever possible*

*If available, use a remote control to advance the slides and a laser pointer*

*Depending on your delivery style and the size of the audience, you may want to encourage dialogue during your presentation or take questions and answers afterwards*

*Make handouts available such as the stormwater flyer from year 1 (if you still have some) and any other relevant materials*

Slide 1:

- Introduction: purpose of presentation is to explain what stormwater is, by the end of the talk it is hoped that you will understand why stormwater matters and have many reasons why you should care

Slide 2:

- Precipitation is rain **and** snow

Slide 3:

- Engage audience to answer question if you wish

Slide 4:

- Recharge is also referred to as "infiltration"
- Interesting factoid: Only 0.1% of the total water supply on the planet is available for use by humans - the rest is oceanic salt water, frozen in ice caps and glaciers, located deep underground, or already contaminated*

Slide 5:

- Stormwater is also referred to as "runoff"

Slide 6:

- You may wish to review the water cycle using the diagram
- Make three main points: 1) Define **pervious and impervious**; 2) Point out difference in **amount of pavement and buildings (rooftops)** between the less and more developed land; 3) Note that **runoff is greater on the more developed land** than the less developed
- Point out natural riparian buffer on the less developed land and note importance

Slide 7:

- Make three main points: 1) Point out **recharge** occurring on less developed land; 2) Note that the **groundwater level is higher under the less developed land** where there is more recharge; 3) Point out **comparison in depth of wells** between less and more developed land

- Discuss the importance of recharge to drinking water sources (wells) and the importance of aquifer protection bylaws

Slide 8:
- Discuss the importance of recharge to the base flow of rivers and streams
- Discuss any local examples of "higher highs" and "lower lows"

Slide 9:
- Engage audience to answer question if you wish

Slide 10:
- Explain that 45 inches is rain and melted snow - note that inches of snowfall are not equivalent to inches of rainfall in terms of the actual amount of precipitation

Slide 11:
- Heavy downpours don't have the time to recharge
- Emphasize the difference between impervious and pervious surfaces

Slide 12:
- Bar graph main point: as pavement increases, recharge decreases (orange bar), runoff increases (red bar), and evapotranspiration decreases (yellow bar)
- Bar graph: note that the landscape type attributed to the pavement percentage was added for illustrative purposes only, not for definition
- Bar graph data source: "Guidance Specifying Management Measures for Sources of Non-Point Source Pollution in Coastal Waters", U.S. Environmental Protection Agency document # 840-B-92-002 as referenced by "Impervious Surface Coverage: The Emergence of a Key Environmental Indicator", Journal of the American Planning Association, Vol. 62, No. 2, Spring 1996
- Interesting factoid: urban stream quality begins to decline sharply once impervious cover in a watershed exceeds 10%*

Slide 13:
- Impervious surfaces generate more stormwater
- Interesting factoid: 1600% more stormwater runoff is produced by a one-acre parking lot than by a one-acre meadow*

Slide 14:
- Explain that heavy rains allow little to no recharge, even on pervious surfaces
- The volume & speed of runoff from paved surfaces can greatly increase flooding
- Discuss any local examples of flooding

Slide 15:
- Construction permits and erosion control bylaws are meant to decrease erosion during construction
- Hay bales in this photo are intended to hold back eroded soil

Slide 16:
- Stormwater is also referred to as "non-point source pollution"

Slide 17:

- Discuss any local examples of stormwater pollution

Slide 18:

- Stormwater management can be done both by the community and by individuals – emphasize we're all in this together

Slide 19:

- Discuss storm drain systems
- Purpose of storm drains to prevent flooding of streets and parking lots
- May want to identify local examples of storm drain system

Slide 20:

- Point out the water body in the background as the answer

Slide 21:

- Discuss the "direct pipe" connection from storm drain to receiving water body

Slide 22:

- May want to describe catch basins, sumps and hoods, but acknowledge that treatment is usually minimal

Slides 23 - 29:

- May want to identify local examples of these pollutants

Slide 30:

- Stormwater pollution is difficult to solve as it comes from so many places

Slide 31 & 32:

- Recruit citizen participation in cleaning up stormwater

Slide 33:

- Emphasize to read labels of fertilizer, herbicide, and pesticide products carefully – emphasize that applying more than the label recommends is NOT better

Slides 34:

- Emphasize that most turf grass species are healthiest when grass blades are at least 2 ½ to 3 inches high
- Interesting factoid: one inch of water a week from all sources is all a lawn needs**
- Mention that water bans on lawn watering are sometimes necessary due to a strain on the water supply

Slide 35:

- Interesting factoid: a single quart of motor oil dumped into a storm drain can create a two-acre oil slick in the receiving water body*
- Mention water bans on car washing are sometimes necessary due to a strain on the water supply

Slide 36:

- Interesting factoid: An average-sized dog dropping produces 3 billion fecal coliform bacteria*

Slide 37:

- Mention what the town/city provides for helpful services re: recycling collection, hazardous waste collection days (locations, times), etc.

Slide 38:

- Mention 5th/6th grade classroom curriculum on stormwater

Slide 39:

- Emphasize the connection between the storm drain and the nearest water body
- Mention local activities such as storm drain stenciling

Slide 40:

- Describe DPW services such as street sweepings and catch basin cleanings, describe schedule of how often done, when and where, etc.

Slides 41 & 42:

- Identify any local examples of LID
- Mention if town/city is enacting a LID bylaw

Slide 43:

- Stress the economic benefits of stormwater management – it is always less expensive to prevent pollution than to clean it up

Slide 44:

- Describe components of Phase II compliance, such as 5-year permit requirements, stormwater committee, finding illicit discharges, creating construction bylaws, etc.

Slides 45 – 46:

- Stress the water quality and quantity benefits of stormwater management

Slide 47:

- Overall message: there's a lot citizens and the community can do to clean up and reduce stormwater
- Point out logo as something they've already seen and will continue to see as stormwater matters education is an ongoing program in the municipality

Slide 48:

- Credits

Interesting factoid sources:

* - Center for Watershed Protection website: www.cwp.org

** - "Guide to Lawn and Landscape Water Conservation", MA Water Resources Commission, 2002

# TOWN OF BILLERICA

DEPARTMENT OF PUBLIC WORKS
365 Boston Road
Billerica, Massachusetts 01821
(978) 671-1313

ABDUL ALKHATIB
Director

January 27, 2006

RE: **DESIGN OPEN HOUSE**
Roadway Reconstruction and Traffic Improvements
Cook Street and Alexander Road

Dear Property Owner:

The Town of Billerica, in conjunction with the Massachusetts Highway Department, is planning to re-design the roadway reconstruction project along Cook Street and Alexander Road in an effort to respond to resident's concerns and make the project more resident friendly.

In general, the project will consist of roadway widening, pavement reconstruction, installation of curb, construction of sidewalks and wheelchair ramps, drainage improvements, as well as new signs and pavement markings throughout.

We will be conducting an **Open House** for you (and any interested residents) to review the plans and become more informed about the project and proposed work. The **Open House** will be held on ***Monday, February 6 between 2:00 pm to 4:00pm and 6:00pm to 8:00pm at the Buck Auditorium at Town Hall.*** You are welcome to attend at anytime over this period to review the plans and ask any related questions you may have. We will have our consultant present to assist you in locating your property on the maps and to help you understand the nature of the proposed easement on your property.

As noted, the project is still in the design phase. When the design is complete we will be contacting you again for the execution of easements and right of entry authorizations where applicable.

The Cook Street/Alexander Road Project will make very positive improvements to the roadway and its adjacent areas. We encourage you to attend the Open House and learn more about the project. If you have any questions, feel free to contact my office at *(978) 671-1313*.

Sincerely,

Abdul H. Alkhatib
Director of Public Works
Town of Billerica

# TOWN OF BILLERICA

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
365 Boston Road
Billerica, Massachusetts 01821
(978) 671-0955

Kelley J. Conway, P.E.
Town Engineer


March 1, 2006

Re: Michael Road Stormwater Improvements

Dear Property Owner:

As you may know, the Town of Billerica is designing improvements to Michael Road and the surrounding neighborhood to eliminate the long-standing drainage issues in the area.

We will be conducting a neighborhood meeting for you and any interested residents to become more informed about the project and the proposed work. The purpose of the meeting is to have our design consultant explain the results of their study, conceptual design, and to solicit input from residents.

The meeting will be held on Thursday, March 9, 2006 at 7:00pm at the Buck Auditorium at Town Hall.

We encourage you to attend the meeting. If you have any questions, please do not hesitate to contact the Engineering Division at 978-671-0955.

Sincerely,

Kelley Conway

Kelley J. Conway, P.E.
Town Engineer

*G:\Projects\Drainage\Michael Road\030106 Neighborhood Meeting Notice.doc*

PRESERVING BILLERICA'S NATURAL TREASURES

# TOWN WIDE CLEAN-UP
# April 15 to May 6, 2006

It has been a very long winter and much work is needed to put our best foot forward.

## How can you help?

Ask your friends, family, neighbors, co-workers, church group, scout or youth group to help clean-up Billerica.

## When?

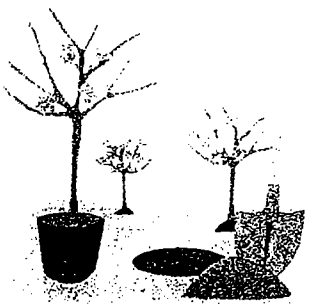
Select a day and time for your clean-up that works best for your group.
Contact the Recreation Department to register your group.
If you have a location that you wish to clean, just let us know.
Need ideas? We have a list to choose from.

## What you will need?

Gloves, rakes, water and snacks. We will provide bags and trash pick-up after clean-up is completed.

## Questions or more information!

Call Peggy at Billerica Recreation 978.671.0921.



PRESERVING BILLERICA'S NATURAL TREASURES

# TOWN WIDE GREEN-UP May 20, 2006

Help us beautify our town by planting flowers in our parks, town commons and other public spaces in Billerica.

## How can you help?

Ask your friends, family, neighbors, co-workers, church group, scout or youth group to help plant flowers around Billerica.
Contact the Recreation Department to register your group.

## When?

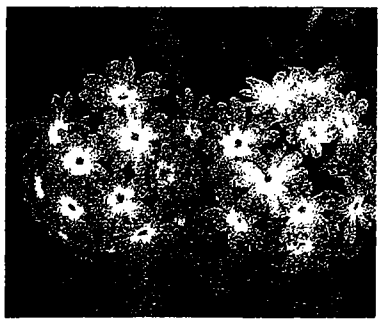
May 20, 2006
Plants will be available at the Town Hall from 8:00-9:00am.
We have a list of sites that you can to choose from.

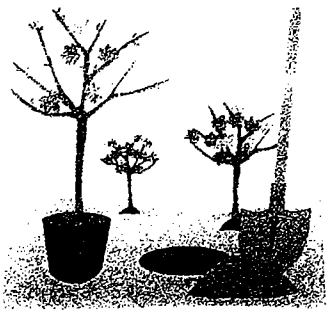
## What you will need?

Gloves, shovels, rakes, water and snacks.

## Questions or more information!

Call Peggy at Billerica Recreation 978.671.0921.





# TOWN OF BILLERICA
# RECREATION DEPARTMENT

248 BOSTON ROAD
BILLERICA, MA 01862
978-671-0921 * FAX 978-671-0927
E-MAIL – billericarecreation@town.billerica.ma.us


January 12, 2006

Commonwealth of Massachusetts
Middlesex Sheriffs Office
Community Work Program
269 Treble Cove Road
Billerica, MA 01862

Dear Mr. Leone,

The Town of Billerica Recreation Department would like to submit a request for a community work crew for 2006. As you know, we do not have any maintenance personnel in our department and have relied upon your work crews to help us through out the year in preparing our parks and playgrounds for use by the citizens of our community.

We would like to request work crews for the weeks of April ~~9th~~ 10th and ~~16th~~ 17th; June ~~4th~~ 5 and ~~11th~~ 12; and September ~~10th~~ 11 and ~~17th~~ 18. They would assist with cleaning and preparation of parks, playgrounds, and beach performing such tasks as: trash removal, brush removal, general grounds work, painting, repair work, beach work, and landscaping. This is all work that would not be able to be completed due to financial and personnel limitations.

We would provide all materials and supplies needed for the projects, lunch and a volunteer to work with your supervisor.

Okay'd For 2006

Thank you for considering this request. If you have any questions, please contact me or Peggy Hannon-Rizza at 978-671-0921.

Sincerely,

Joe Higgins

Joseph Higgins, Jr

CC: Rocco Longo Town Manager ✓
William Greene, Jr. State Representative

# Town of Billerica 2006

## *Recycling and Trash Collection Guide for Residents*

Dear Billerica Residents,

The Town of Billerica is providing this guide to assist you with proper disposal methods and collection dates for weekly solid waste, weekly recycling, CRT disposal, Household Hazardous Waste disposal, leaf collection, and other disposal programs provided for town residents.

The town will still have AW (Allied Waste) collecting solid waste since they are under a five year contract which expires June 30, 2006, and the towns waste will continue to be transported and disposed of at Wheelabrator, a trash incineration plant located in North Andover. We encourage residents to recycle weekly to reduce our tonnage charges at Wheelabrator.

We hope that you find this guide useful and please feel free to contact us if you have any questions or suggestions regarding solid waste collection and disposal in the Town of Billerica.

Sincerely:
Neville Rivet
Solid Waste and
Recycling Coordinator

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**If your trash or recycling is not picked up on Monday, please contact Neville Rivet at 978-436-9178 by 3 p.m. Tuesday and it will be picked up on Wednesday.**

## BILLERICA RECYCLES WEEKLY !!!

All recyclable material must be placed curbside the same day as trash collection.
You may purchase recycling bins from the Treasurers Office
located in the Town Hall.
There is a $5.00* charge per bin.
Recycling Stickers for other suitable containers are available at no charge.
For Problems with Trash, Recycling, White Goods, TV's, Computer Monitors (CRT's)
or Leaf Collection
Please call AW Customer Service at 1-800-442-9006
or
Neville Rivet at (978) 436-9178
*The cost of recycling bins is subject to change.

# 2006 COLLECTION CALENDAR

### JANUARY 2006

| Su | Mo | Tu | We | Th | Fr | Sa |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | 31 | | | | |

### FEBRUARY 2006

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| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | | | | |

### MARCH 2006

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| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 | |

### APRIL 2006

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| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | | | | | | |

### MAY 2006

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| 28 | 29 | 30 | 31 | | | |

### JUNE 2006

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| 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 | |

### JULY 2006

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| 30 | 31 | | | | | |

### AUGUST 2006

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| 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 27 | 28 | 29 | 30 | 31 | | |

### SEPTEMBER 2006

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| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |

### OCTOBER 2006

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|---|---|---|---|---|---|---|
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| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | 31 | | | | |

### NOVEMBER 2006

| Su | Mo | Tu | We | Th | Fr | Sa |
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| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | | |

### DECEMBER 2006

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| 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | | | | | | |

**CALENDAR LEGEND:**

- ○ **HOLIDAYS**
- ◇ **WHITE GOODS & CRT/TV PICKUP**
- **LEAF COLLECTION**
- △ **HOUSEHOLD HAZARDOUS WASTE COLLECTION DAY** OCT 21, 2006
- ▤ **WASTE OIL COLLECTION** at DPW
- ✧ **CAR TIRES/BATTERY COLLECTION at HOLLANDS** (March-October ONLY)

# TRASH COLLECTION RULES AND REGULATIONS
# CHAPTER 5, SECTION 5.7.002

**5.7.002** Municipal Solid Waste Disposal and Collection: Collection dates and routes will be determined by the Board of Health and may be subject to change pending contractual obligations or other circumstances.

(1 ) HOLIDAY COLLECTIONS: If a holiday falls on the scheduled collection day for a collection route, collection will commence on the following day.

(2) CURRENT ACCEPTABLE WASTES: Acceptable wastes shall mean all solid waste which can be placed into acceptable containers, excluding, inherently dangerous, toxic and hazardous wastes which shall from time to time be designated as "hazardous wastes" by State or Federal regulatory authorities having appropriate jurisdiction.

(3) CURRENT UNACCEPTABLE WASTES: As of the adoption of this regulation,

(a) Demolition debris.
(b) Any of the following, in whole or in part: Auto hulks, engine blocks, transmission blocks, heavy machinery, skimobiles, motorcycles or tractors.
(c) Stumps, regardless of size, and limbs or branches exceeding two and one half (2½) inches in diameter or four (4) feet in length.
(d) Pathological wastes.
(e) Toxic and volatile chemicals, such as but not limited to: Oil based paint, paint thinner, paint remover, insecticides, herbicides, pool chemicals, household solvents, driveway sealers, hazardous craft supplies, wood strippers, or any other household chemicals.
(f) Explosives.
(g) Automobile batteries, tires, motor oil and antifreeze.
(h) Florescent bulbs.
(i) Propane gas tanks or other flammable materials.
(j) Items not appearing as unacceptable waste may still he unacceptable. Residents are required to contact the Board of Health or its contractor for the proper determinations.

(4) CONTAINER: Shall be a suitable receptacle, with a capacity no greater than thirty-five (35) gallons, constructed of plastic, metal or fiberglass, having handles of adequate strength for lifting and having a tight fitting lid capable of preventing entrance into the container by vectors and spillage. The mouth of a container shall have a diameter greater than or equal to that of the base. The weight of a container and its contents shall not exceed seventy-five (75) pounds. Pasteboard cartons, paper bags, and wooden crates are not suitable receptacles for weekly collection and may not be collected by the contractor. Plastic rubbish bags (3-ply minimum) are acceptable.

(5) Refuse shall be placed curbside no later than 7:00 AM of the day of collection and the contractor shall not commence collection earlier.

(6) Prior to collection it is the resident's responsibility to maintain safe and sanitary conditions at the curbside collection point and to otherwise comply with these regulations.

(7) Containers shall be removed within twelve (12) hours after daily collection and must be stored out of sight of public view in a secure location.

(8) BULK WASTE COLLECTION: Residents may place one (1 ) bulk item curbside weekly for collection and disposal. Bulk items are considered to be sofas, chairs, bed mattresses and boxsprings, tables, desks, etc.

*Notice: These Rules and regulations are subject to change.*

## TRASH COLLECTION RULES AND REGULATIONS
## CHAPTER 5, SECTION 5.7.002
**(cont'd)**

(9) LEAF COLLECTION: Leaf and other yard waste will be collected curbside during special collections in the fall and spring or as otherwise determined by the Board of Health. These items may not be placed curbside for weekly collection and must be collected during special collection periods. Leaf and yard waste must be placed in paper biodegradable bags.

(10) APPLIANCES/WHITE GOODS: Items such as, but not limited to, refrigerators, freezers, washing machines, dryers, hot water heaters, ovens, dishwashers, air conditioners, trash compactors, dehumidifiers, etc., are collected bi-weekly and require a permit from the Board of Health. The fee for a permit shall be in accordance with the most current Board of Health fee schedule.

(11 ) CATHODE RAY TUBES (CRT) ITEMS: Televisions, computer monitors, and other CRT items must be collected separately and is scheduled for collection by the Board of Health. Residents must contact the Board of Health or the Town's current Solid Waste Disposal Contractor to schedule pickup and disposal.

(12) CONSTRUCTION AND BUILDING MATERIALS INCLUDING EARTH AND GRAVEL WILL NOT BE COLLECTED: Building contractors will be responsible for the proper disposal of all construction and building material or other debris resulting from work performed around residences. Residents performing home improvements are responsible for proper disposal of building materials. Residents cannot dispose of these materials with weekly curbside pick up.

*Notice: These Rules and regulations are subject to change.*

### DISPOSAL OF AUTOMOBILES

To dispose of working or non-working automobiles you can make a donation to the Billerica Boys and Girls Club by calling 1-800-246-0493. Inform the company that the donation is provided for the Billerica Boys and Girls Club. A local towing company will then schedule to pickup the automobile for you.

### RESIDENTIAL WASTE OIL

To dispose of Waste Oil you may bring it to the DPW Yard located at 250 Boston Road every third Saturday of the Month from 9:00 am to 1:00 pm. Oil will only be accepted in regulation DPW issued containers available for sale at the DPW (978-671-0951)
The following sizes and prices are available:
5 gallon container for $12.60*
Payable only by check.

*These prices are subject to change without notice.

### DISPOSAL OF PROPANE TANKS

You may dispose of propane tanks at the following locations:

| | |
|---|---|
| O'Connors Hardware<br>446 Boston Road<br>Billerica, MA<br>978-663-3520 | There is a fee of<br>$5.00*<br>Call for times<br>of operations |
| Taylor Rental<br>61 Parkhurst Road<br>Chelmsford, MA<br>978-937-5544 | There is a fee of<br>$5.00* |

*Small propane cylinders that are completely empty and with the valve removed can be recycled at a scrap metal facility (see Metal Items) or placed in the normal trash collection.*

### CAR TIRES AND BATTERIES

To dispose of car tires and batteries, you may bring these items to Holland's Auto Parts on Treble Cove Road every third Saturday of the month from 9:00 am to 1:00 pm.
This collection is for the months of March - October only.
There is a $1.00 charge per tire on or off the rim.
*These prices are subject to change without notice.

## LEAF AND YARD COLLECTION

The 2006 Spring and Fall Leaf Collection dates are: May 1 - June 3 and October 30 - December 1. Leaf pickup is on your **FORMER** trash pickup day, instead of every Monday.

All leaves must be placed curbside in Bio-degradable paper bags or leaves can be placed in covered trash barrels clearly labeled **YARD WASTE** with no plastic liners.

If you have any problems with leaf pickup call BFI at 1-800-442-9006, Customer Service Dept. or Neville Rivet at 978-436-9178.

## DISPOSAL OF BULK ITEMS

You are allowed to dispose of one bulk item a week with your normal trash curbside. The following items are considered bulk items:

| | |
|---|---|
| Mattress | Recliners |
| Box Spring | Table |
| Chairs | Love Seat |
| Sofa | etc. |

## CHRISTMAS TREE REMOVAL

To discard Christmas Trees, you must place the bare tree curbside. It will be collected the same day as trash collection during the first two weeks of January.

**NO WREATHS WILL BE ACCEPTED**

## LATEX PAINT

COLLECTED AT CURB

LATEX PAINT & LATEX PAINT CANS
Dried out latex paint may be taken with weekly trash if lid is removed & paint is completely dried out. Kitty litter may speed drying. Do NOT dump paint down your drain. It will harm your septic system.
**(Latex paint is not accepted at the Household Hazardous Waste Drop-off)**

## COMPOST BINS AVAILABLE

Compost Bins are now available for purchase for the discounted price of $25.00 per bin. Please contact Neville Rivet for more information at 978-436-9178.

## MERCURY RECOVERY PROGRAM

Do not throw products containing mercury in the trash such as thermostats, mercury switches, glass mercury thermometers or button cell batteries found in watches, cameras, calculators, hearing aids, and personal organizers. To properly dispose of these items or exchange your glass fever thermometer, while supplies last, bring it to the Board of Health Office Monday - Friday
8:30 am - 4:00 pm.

## SMOKE ALARMS

Old Smoke and Fire alarms may be returned to the manufacturer. Newer models may be disposed of in your trash.

## FIRE EXTINGUISHERS

Home Use extinguishers that are completely empty may be placed in the normal trash. These are only the small Kitchen Type Extinguishers. Industrial Type Extinguishers must be disposed of as scrap metal.

## MOSQUITO CONTROL

The Board of Health coordinates annual aerial spraying and catch basin treatments for West Nile Virus Mosquitoes. The State West Nile Virus phone number is 1-866-627-7968. All dead birds must be reported to them before the Board of Health. Please obtain a case number from the State before reporting dead birds to the Board of Health.

## BEAVER CONTROL

The Board of Health responds to flooding problems caused by beaver dams. These problems should also be reported to the Billerica Conservation Commission at 978-671-0966. All permits issued for Beaver Control by the Board of Health are subject to review and approval by the Conservation Commission according to the state law.

## WHITE GOODS PICKUP

To dispose of white goods you must purchase a White Good Sticker from the Treasurers Office located at the Town Hall for a fee of $5.00* per item. After purchasing a sticker, you must call BFI to make arrangements for the pickup. Please make sure appliance is curbside by 7:00 a.m. the day of the pickup and the sticker is visible.

The following is a list of appliances that require stickers:

- Air Conditioners
- Cast Iron Tubs
- Copy Machines
- Dehumidifiers
- Dishwashers
- Dryers
- Freezers (doors removed and in upright position)
- Furnace
- Hot Water Heater
- Metal File Cabinet
- Metal Table
- Ovens
- Refrigerators (doors removed and in upright position)
- Snowblower & Ride-On lawnmowers (remove cover & drain fluids)
- Steel Sinks/Steel Tubs
- Table Saw
- Trash Compactors
- Treadmill
- Washing Machines
- Water Coolers
- Wood Burning Stove

- **Please contact AW at 1-800-442-9006 if you have an appliance not listed to see if a sticker is required.**
- **Microwave ovens do not require a White Good Sticker to be disposed of. Please place microwave oven curbside with regular trash.**
- **Refrigerators and Freezers must be kept in an upright position with Doors removed. DO NOT LAY DOWN**
- **If pickup falls on or after a holiday, pickup will be delayed one day** (please refer to calendar)

## CRT AND TV PICKUP

Computer monitors and televisions do not require disposal stickers. You must call BFI at 1-800-442-9006 to schedule a pickup. Please refer to collection 2006 calendar for exact dates.

## CONSTRUCTION & DEMOLITION DEBRIS
**(NOT COLLECTED CURBSIDE)**

ASBESTOS – Have Licensed Contractor Remove Asbestos. A permit is required from the Board of Health.
LEAD PAINT – Should be removed by professionals. Refer to the Yellow Pages for assistance.

ASPHALT, GRAVEL, STONE, BRICK, CONCRETE
TAKE TO: Agretech Corporation
Merrimack St. Rt. 110
Dracut, MA 978-475-8153

BRICK, CONCRETE
TAKE TO: J.R. Pacella Development
49 N. Main Street
Westford, MA 978-692-3532

FIBERGLASS INSULATION PLASTER WALLBOARD, ROOFING & SIDING, SHINGLES (no asbestos shingles), WOOD FENCING, LARGE WOOD PIECES, AND CLEAN CONSTRUCTION WOOD (no painted or pressure treated)
Also accepts logs, stumps, brush, leaves & pallets (grass clippings only no charge)
TAKE TO: B.M.C. Corporation
1079 South Street
Tewksbury, MA 978-667-2171

BRICK, CONCRETE, FIBERGLASS INSULATION PLASTER WALLBOARD, ROOFING & SIDING, SHINGLES (no asbestos shingles), WOOD FENCING LARGE WOOD PIECES, AND CLEAN CONSTRUCTION WOOD (no painted or pressure treated)
TAKE TO: E.L. Harvey & Sons ($95 ton, min. of $50)
68 Hopkinton Road
Westborough, MA 1-800-321-3002
TAKE TO: C.J. Mabardy
Cambridge, MA 1-617-354-7580

CLEAN CONSTRUCTION WOOD, BRUSH, GRASS, LEAVES & PALLETS
TAKE TO: Landscape Express, Inc.
218 New Boston Street
Woburn, MA 1-781-933-3818

WE GET RID OF IT (PICKUP AND CLEANOUT)
Everything except Hazardous Waste
CALL: David Fountaine 1-866-952-8400
Open 7 days 8 a.m. to 8 p.m.
Website: www.wegetridofit.com

CHECK YELLOW PAGES UNDER "RUBBISH & TRASH REMOVAL"
OR have contractor remove

# NOT EXACTLY SURE HOW & WHAT & WHEN & WHERE TO RECYCLE? DIAL "E-CALL" FOR FREE ANSWERS

## HOUSEHOLD HAZARDOUS WASTE COLLECTION INFORMATION

Household Hazardous Waste Day Collection is scheduled for Saturday, October 15, 2005 at the DPW yard located at 250 Boston Road. The collection center will be open from 9:00 am to 1:00 pm.

**Acceptable Waste**

Radiator cleaners
Oven cleaners
Photo chemicals
Metal polish
Arts & Crafts supplies
Floor cleaners
Dry cleaning fluids
Rust preventatives
Moth balls
Wood preservatives
Wood strippers
Oil based paints
Paint thinner
Solvents
Insect spray
Degreasers
Engine / radiator flushes
Gasoline
Antifreeze
Kerosene
Brake Fluid
Ammonia
Pesticides
Rat poison
Pool chemicals
Muriatic acid
Cesspool cleaners
Creosote
Non Alkaline batteries
Old chemistry sets
Transmission fluid
Sealants
Herbicides
Flourescent bulbs

**Unacceptable Waste**

Waste automobile oil
Latex paint
Commercial wastes
Gas cylinders
Car Tires
Radioactive materials
Industrial wastes
Pathological wastes
Ammunition
Fireworks
Explosives
Drugs regulated by Drug Enforcement Agency
Alkaline Batteries*
*Alkaline batteries may be thrown away with your regular trash
Lead acid batteries
Fire extinguishers
Smoke alarms
Small propane cylinders

MISSED THE COLLECTION?
TO INQUIRE WHERE TO TAKE HAZARDOUS WASTE, PLEASE GO TO THIS WEB SITE.
Go to:
ci.lexington.ma.us
click onto Health Dept and go to Household hazardous waste.

Clean Harbors in Braintree
Call 1-800-444-4244 for info.

PROOF OF RESIDENCY WILL BE REQUIRED TO DROP OFF ANY HOUSEHOLD HAZARDOUS WASTE.

## BRUSH BURNING

**PLEASE REMEMBER !!!!**

**Brush Burning is only allowed January 15 - April 30.**

Registration by phone with the center fire station is required.
Please call (978) 671-0940 for details

## METAL ITEMS

Small large and bulky metal items including but not limited to plumbing parts, grills, swing sets, auto parts, doors and door frames, chain link fencing, metal furniture, gutters and sheet metal (sheds, pools) may be brought to the following facilities:

C.J. Marbardy in Cambridge: 617-354-7580

Waste Management Transfer Facility in Leominster: 978-840-9557

We Get Rid of It: 1-866-952-8400

# TOWN OF BILLERICA CURBSIDE RECYCLING

| Material | What to Recycle | How to prepare | Do not include |
|---|---|---|---|
| PAPER | • Chipboard (cereal boxes, shoeboxes, etc.) Beer and Soda carriers.<br>• Newspapers/inserts<br>• Magazines and catalogs<br>• Junk mail<br>• Phone Books<br>• Office Paper<br>• Corrugated cardboard | • Place newspapers and magazines in paper bag and set in, beside or on top of recycling bin. | • No plastic grocery bags.<br>• No waxed or Asian boxes (pale yellow) |
| GLASS | • Clear, green and brown food and beverage cans | • Rinse clean<br>• Remove lids, collars, neck rings, corks, etc.<br>• Paper labels may be left on | • No broken glass<br>• No other glass items such as window glass, pyrex, ceramics, etc. |
| METAL | • Aluminum and steel (tin) food and beverage cans | • Rinse clean<br>• Flatten or nest to save space<br>• Labels may be left on | • No aluminum foil pie pans or trays<br>• No paint<br>• No other metal items<br>• No aerosol cans |
| PLASTIC | • Plastic milk, juice or water jugs<br>• Soda bottles<br>• Detergent bottles<br>• All number plastic containers accepted | • Rinse clean<br>• Remove lids and neck rings<br>• Crush or nest | • No plastic bags<br>• No motor oil containers |

***REMEMBER***

RINSE ALL CONTAINERS CLEAN, REMOVE CAPS FROM GLASS BOTTLES AND JARS
FOR A NEW OR REPLACEMENT BIN CALL: 978-436-9178
LEAVE BIN FOR NEXT RESIDENT WHEN YOU MOVE

**Town of Billerica**
**365 Boston Road**
**Billerica, MA 01821**

Pre-sorted Standard
U.S. Postage
**PAID**
No. Billerica,MA
PERMIT # 3

RESIDENTIAL
CUSTOMER

## ILLEGAL DUMPING !!

If you see any illegal dumping or other environmental hazards occurring in your neighborhood, please call your local Board of Health at 978-671-0931 or the DEP Environmental Strike Force at 617-556-1000

# The Commonwealth of Massachusetts

## Executive Office of Environmental Affairs

Office Of Technical Assistance For Toxics Use Reduction
100 Cambridge Street, Suite 900
Boston, MA 02114-2524

Mitt Romney
GOVERNOR

Kerry Healey
LIEUTENANT GOVERNOR

Steven Pritchard
SECRETARY

Paul Richard
DIRECTOR

Tel: (617) 626-1060
Fax: (617) 626-1095


April 6, 2006

Abdul Alkhatib
Director of Public Works
Town of Billerica
365 Boston Rd.
Billerica, MA 01862

Dear Mr. Alkhatib,

Thank you for inviting the Massachusetts Office of Technical Assistance (OTA) to visit the Town of Billerica's Highway Department. Enclosed is information which our office determined would be most useful to consider for your facilities' operations.

**I. Stormwater Management**

The majority of the Town of Billerica is designated as a Regulated Small MS4 by the National Pollutant Discharge Elimination System (NPDES) Stormwater Phase II Final Rule. The Phase II Rule defines a small MS4 stormwater management program as a program comprising of six elements:

1. Public Education and Outreach
2. Public Participation/Involvement
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff Control
5. Post-Construction Runoff Control
6. Pollution Prevention/Good Housekeeping

Particular attention should be paid to item 6, as it applies to municipal operations in order to improve or protect receiving water quality by altering municipal operations. Attachment A to this report is the EPA fact sheet detailing this minimum control measure.

Listed below is a summary of Best Management Practices and Good Housekeeping Measures covering the categories of stored fill, stored deicing chemicals (salt), and proper catch basin operation that are recommended for your site:

Stockpile of Fill:

- Spread grass seed onto the stockpile to stabilize the surface and prevent sediment erosion from the pile. The only area that does not need stabilizing is the active borrow area of the

pile. Also, if the pile remains inactive during the winter season, temporarily seed the entire pile in the fall so that the pile is stabilized for the inactive period.

- Install a filter berm (Attachment B) of crushed stone along the Jersey barrier that lines the unnamed tributary that cuts through the DPW site. This will help filter sediment from the stormwater runoff from the stockpile.

Salt Pile Storage:
Salt storage buildings should be designed to provide sufficient capacity, protection of salt, and easy access. Salt piles should be stored on impermeable surfaces. Salt piles should not be located adjacent to surface waters.

- Attachment C is a DEP Guideline document for Deicing Chemical Storage
- Doors to the salt storage building should be kept closed when loading/unloading is not taking place.
- Provide adequate space for storage piles to prevent salt from spilling out of the storage building.
- Any salt material spilled during loading/unloading should be swept back into the storage building.
- At a minimum the emergency salt pile shed that is located adjacent to the unnamed tributary should have a door that is kept closed when not in use. The door should be effective in keeping any salt inside the structure. We also recommend that this shed be moved to a less sensitive location.
- We recommend that the deicing chemical storage tanks located adjacent to (with in a few feet) the unnamed tributary should be moved to a less sensitive location.

Stormwater Catch Basin:

- There is one stormwater catch basin located on the site, in a high traffic area that could be receiving stormwater runoff from the garage. A catch basin insert should be installed that can handle the removal of oil/grease, sediment, and other potential pollutants. A list of technologies that can be used in this situation can be found at www.mastep.net.

**II. Street Sweepings**
The Town of Billerica also collects street sweepings for reuse and incorporates the street sweepings into the stockpile of fill. Attachment D is a MA DEP policy on the "Reuse and Disposal of Street Sweepings". This policy restricts the reuse of street sweepings.

Street sweepings can be used as fill in public ways and amended to compost – however in both circumstances they can not be used in residential areas, not used with in the 100 foot buffer zone of a wetland or within wetland resource areas including riverfront areas, and not used within 500 feet of a ground or surface drinking water supply. Therefore residents of the municipality should not be permitted to use compost/fill amended with the street sweepings.

The temporary storage of collected street sweepings is allowed if specific conditions are satisfied. The storage pile must be protected from wind and rain to prevent dust, erosion and off-site migration. The storage pile can not be stored within the 100 foot buffer zone of a wetland or within 500 feet of a ground or surface water supply.

Based upon this policy, the Billerica Highway Department cannot allow members of the community to use the fill if you amend your stock pile with street sweepings. Regardless, the Highway Department should ensure that the fill pile is not located within the 100 foot buffer zone of a wetland or within 500 feet of a ground or surface water supply, and must move the pile if it does not meet with this requirement.

## III. Motor Vehicle Storage

In addition to the potential for pollution of the waterways and wetlands surrounding the site mentioned above, there is one other obvious source. There are numerous old or inoperable pieces of equipment and machinery, including motor vehicles, stored on the property. There is no provision to catch any potential leaks of motor vehicle oil, antifreeze, battery acid or other fluids.
All of this machinery is stored on the ground, where leaking material could permeate through to groundwater and to the surrounding wetlands.

## IV. SPCC Plan and Fuel Dispensing

Spill Prevention Control & Countermeasures (SPCC) Plans:
SPCC plans are required for certain facilities that have storage capacity for large quantities of oils which is interpreted to include gasoline, diesel, animal or vegetable oils, and motor oils. Facilities meeting all three of the following criteria must have an SPCC plan:

- it must be non-transportation related
- it must have an aggregate aboveground storage capacity greater than 1,320 gallons or a completely buried storage capacity greater than 42,000 gallons, and
- there must be a reasonable expectation of a discharge into or upon navigable waters of The United States or adjoining shorelines.

The Billerica Highway Department facility appears to meet all three of these criteria. The requirements of an SPCC plan are included in Attachment E.

Diesel Dispensing:
During OTA's visit, you asked whether your current diesel dispensing equipment is acceptable. In 1997 the Massachusetts Department of Fire Services issued an advisory stating that fueling motor vehicles from a tank vehicle is allowed under certain conditions. Please find enclosed with this letter as Attachment F a copy of the advisory and review it carefully to be sure that you are meeting all of these requirements.

## V. Lead-acid Battery Management

Although lead-acid batteries contain lead and sulfuric acid, both of which are considered hazardous, environmental regulations allow these batteries to be treated as a "universal waste" to encourage recycling. In order to meet the requirements of universal waste regulations, batteries must be stored in a separate area marked "Universal Waste Accumulation Area" and individual batteries or containers of batteries must be marked "Universal Waste--Battery(ies)," or "Universal Waste--Waste Battery(ies)," or "Universal Waste--Used Battery(ies)". In addition, any battery that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions must be put into a container. This container must be closed, structurally sound, compatible with the contents of the battery, and sufficiently contain anything that might leak from the battery. Waste batteries cannot be kept for longer than one year, and you are required to keep information to document this.

## VI. Safety

Cylinder Safety:
Fire prevention regulation 527 CMR 14.03(12)(d) requires that flammable gases be stored in approved cylinders which shall be adequately capped or regulated and secured to prevent falling or being knocked over. "Empty" cylinders should be handled with the same care as full cylinders since they cannot be emptied completely and there will still be some remaining product in them.

Flammable Storage:
According to 527 CMR 10.04 requirements:
Flammable or combustible liquids stored or transported in other than a cargo tank, portable tank or transfer tank shall be in approved containers. Approved containers shall include those built to U. S. DOT standards, listed and labeled by an NRTL, or approved by the State Fire Marshal. When not in use, containers shall be in a secured, upright position with all openings tightly closed.

In addition, according to 527 CMR 14.03(8), facilities are required to have a permit from the fire department specifying the quantities of flammable or combustible materials allowed at the location and the conditions for keeping and storing of these quantities. This regulation applies to locations which have a total gasoline can storage capacity of 7 gallons or more.

Fire Extinguishers
According to OSHA regulation 1910.157, if your portable fire extinguishers are intended for use by Town of Billerica employees, you must have both a written emergency action plan and a written fire prevention plan which you have reviewed with your employees, and must also:
1) Provide portable fire extinguishers and mount, locate, and identify them so that they are readily accessible to employees without subjecting the employees to possible injury, and
2) Assure that portable fire extinguishers are maintained in a fully charged and operable condition and kept in their designated places at all times except during use.
3) Annually train employees in fire extinguisher use and the hazards associated with fighting the fires where they might use a portable extinguisher.

This forbids the practice of storing fire extinguishers behind trash cans or other obstructions and would require that if you have a "fire extinguisher" sign posted, there must actually be an extinguisher at that location.

A fire extinguisher must be located between 10 and 25 feet away from any flammable or combustible liquid storage area at your facilities. An exception to this would be if these liquids were stored in a fire resistant storage room, the extinguisher would need to be outside the room and not more than 10 feet from its door.

We hope that the information provided is useful and assists you with meeting your compliance and pollution prevention efforts. If you have further questions concerning the items in this report or if any additional issues arise that you would like OTA's assistance with, please do not hesitate to contact us.

Sincerely,

Scott Fortier
Environmental Chemist

Michelle Miilu
Environmental Engineer

Denise Zambrowski
Environmental Analyst

Attachments:
A) Stormwater Phase II Final Rule, Pollution Prevention/Good Housekeeping Minimum Control Measure,U.S. EPA
B) Erosion and Sediment Control Practices
C) MA DEP Guidelines On Deicing Chemical (Road Salt) Storage
D) MA DEP Final Policy # BWP-94.092, Refuse and Disposal of Street Sweepings
E) SPCC What Do I Have to Do Now?
F) MA Department of Fire Services Advisory on Fuel Dispensing

Attachment A

# Stormwater Phase II Final Rule

## Pollution Prevention/Good Housekeeping Minimum Control Measure

**Stormwater Phase II Final Rule Fact Sheet Series**

**Overview**

1.0 – Stormwater Phase II Final Rule: An Overview

**Small MS4 Program**

2.0 – Small MS4 Stormwater Program Overview

2.1 – Who's Covered? Designation and Waivers of Regulated Small MS4s

2.2 – Urbanized Areas: Definition and Description

***Minimum Control Measures***

2.3 – Public Education and Outreach

2.4 – Public Participation/ Involvement

2.5 – Illicit Discharge Detection and Elimination

2.6 – Construction Site Runoff Control

2.7 – Post-Construction Runoff Control

2.8 – Pollution Prevention/Good Housekeeping

2.9 – Permitting and Reporting: The Process and Requirements

2.10 – Federal and State-Operated MS4s: Program Implementation

**Construction Program**

3.0 – Construction Program Overview

3.1 – Construction Rainfall Erosivity Waiver

**Industrial "No Exposure"**

4.0 – Conditional No Exposure Exclusion for Industrial Activity

This fact sheet profiles the Pollution Prevention/Good Housekeeping for Municipal Operations minimum control measure, one of six measures the operator of a Phase II regulated small municipal separate storm sewer system (MS4) is required to include in its storm water management program to meet the conditions of its National Pollutant Discharge Elimination System (NPDES) permit. This fact sheet outlines the Phase II Final Rule requirements and offers some general guidance on how to satisfy them. It is important to keep in mind that the small MS4 operator has a great deal of flexibility in choosing exactly how to satisfy the minimum control measure requirements.

### Why Is Pollution Prevention/Good Housekeeping Necessary?

The Pollution Prevention/Good Housekeeping for municipal operations minimum control measure is a key element of the small MS4 stormwater management program. This measure requires the small MS4 operator to examine and subsequently alter their own actions to help ensure a reduction in the amount and type of pollution that: (1) collects on streets, parking lots, open spaces, and storage and vehicle maintenance areas and is discharged into local waterways; and (2) results from actions such as environmentally damaging land development and flood management practices or poor maintenance of storm sewer systems.

While this measure is meant primarily to improve or protect receiving water quality by altering municipal or facility operations, it also can result in a cost savings for the small MS4 operator, since proper and timely maintenance of storm sewer systems can help avoid repair costs from damage caused by age and neglect.

### What Is Required?

Recognizing the benefits of pollution prevention practices, the rule requires an operator of a regulated small MS4 to:

- ❑ Develop and implement an operation and maintenance program with the ultimate goal of preventing or reducing pollutant runoff from municipal operations into the storm sewer system;
- ❑ Include employee training on how to incorporate pollution prevention/good housekeeping techniques into municipal operations such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance. To minimize duplication of effort and conserve resources, the MS4 operator can use training materials that are available from EPA, their State or Tribe, or relevant organizations;
- ❑ Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure. Some program implementation approaches, BMPs (i.e., the program actions/activities), and measurable goals are suggested below.

Attachment B



## Maintenance

Respray area as necessary to keep dust to a minimum.

## References

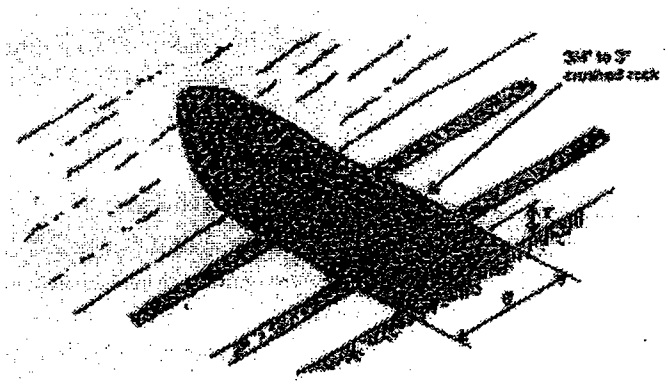
Massachusetts Department of Environmental Protection, Office of Watershed Management, Nonpoint Source Program, Massachusetts ***Nonpoint Source Management Manual,*** Boston, Massachusetts, June, 1993.

U.S. Environmental Protection Agency, ***Storm Water Management For Construction Activities***, EPA-832-R- 92-005, Washington, DC, September, 1992.

Washington State Department of Ecology, ***Stormwater Management Manual for the Puget Sound Basin***, Olympia, WA, February, 1992.

# Filter Berm

A filter berm is a temporary ridge constructed of loose gravel, stone, or crushed rock. It slows and filters flow, diverting it from an exposed traffic area. It is used to retain sediment from traffic areas.



## Where Practice Applies

Where a temporary measure is needed to retain sediment from rights-of-way or in traffic areas on construction sites.

## Advantages

This is an efficient method of sediment removal.

Reduces the speed of runoff flow.

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

Attachment C

ARGEO PAUL CELLUCCI
Governor

JANE SWIFT
Lieutenant Governor

BOB DURAND
Secretary

LAUREN A. LISS
Commissioner

BUREAU OF RESOURCE PROTECTION
DRINKING WATER PROGRAM
GUIDELINES ON DEICING CHEMICAL (ROAD SALT) STORAGE

Effective Date: December 19, 1997 Guideline No. DWSG97-1

Applicability: Applies to all parties storing road salt or other chemical deicing agents.

Supersedes: Fact Sheet: DEICING CHEMICAL (ROAD SALT) STORAGE (January 1996)

Approved by: Arleen O'Donnell, Asst. Commissioner for Resource Protection.

PURPOSE: To summarize salt storage prohibition standards around drinking water supplies and current salt storage practices.

APPLICABILITY: These guidelines are issued on behalf of the Bureau of Resource Protection's Drinking Water Program. They apply to all parties storing road salt or other chemical deicing agents.

# DEICING CHEMICAL (ROAD SALT) STORAGE

I. **The Road Salt Problem**: Historically, there have been incidents in Massachusetts where improperly stored road salt has polluted public and private drinking water supplies. Recognizing the problem, state and local governments have taken steps in recent years to remediate impacted water supplies and to protect water supplies from future contamination. As a result of properly designing storage sheds, new incidents are uncommon. These guidelines summarize salt storage prohibition standards around drinking water supplies and current salt storage practices.

II. **Salt Pile Restrictions in Water Supply Protection Areas**: Uncovered storage of salt is forbidden by Massachusetts General Law Chapter 85, section 7A in areas that would threaten water supplies. The Drinking Water Regulations, 310 CMR 22.21(2)(b), also restrict deicing chemical storage within wellhead protection areas (Zone I and Zone II)

This information is available in alternate format by calling our ADA Coordinator at (617) 574-6872.

DEP on the World Wide Web: http://www.state.ma.us/dep
Printed on Recycled Paper

Attachment D

# REUSE AND DISPOSAL OF STREET SWEEPINGS

## DEPARTMENT OF ENVIRONMENTAL PROTECTION

## BUREAU OF WASTE PREVENTION

## FINAL POLICY # BWP-94.092

This Policy provides guidance on the Department of Environmental Protection's requirements, standards, and approvals for handling, reuse and disposal of street sweepings.

_____
Date

By Signature on Original
Carl F. Dierker,
Assistant Commissioner,
Bureau of Waste Prevention

## 1 POLICY STATEMENT AND SCOPE

This Policy explains the Department of Environmental Protection's requirements for managing street sweepings. Street sweepings are solid waste subject to the Massachusetts solid waste regulations. The options for managing street sweepings are as follows.

1. Use the street sweepings in accordance with the pre-approved uses described in Section 4 of this policy.

2. Use the street sweepings for a beneficial use after obtaining prior approval from the Department under the provisions of the solid waste regulations, 310 CMR 19.060, Beneficial Use of Solid Wastes.

3. Dispose of street sweepings at a permitted solid waste landfill.

The provisions and requirements for managing street sweepings under these options are the subject of this policy.

## 2 APPLICABILITY

This policy applies to the reuse or disposal of street sweepings that are generated in the ordinary and customary maintenance of roadways. The policy does not apply to catch basin cleanings or street sweepings mixed with catch basin cleanings or other wastes. The policy does not apply to the material generated as the result of the clean up of an oil or hazardous material spill.

Street sweepings are not exempt from the Hazardous Waste Regulations, 310 CMR 30.000, and must be handled as hazardous waste when they exhibit any of the characteristics of a hazardous waste. If there is no evidence of unusual contamination, the Department does not require street sweepings to be routinely tested, but, as is the case with any waste, the generator has the ultimate responsibility for determining whether the waste is a hazardous waste.

## 3 DEFINITIONS

Department or DEP means the Massachusetts Department of Environmental Protection.

Public Way means the strip of land over and under a publicly owned, paved road or highway and includes the publicly owned land adjacent to the road or highway.

Street Sweepings means materials consisting primarily of sand and soil generated during the routine cleaning of roadways but may also contain some leaves and other miscellaneous solid wastes collected

Street sweepings shall be used as an additive to compost without prior approval from the Department only when the following restrictions and conditions are observed:

The sweepings have not been collected from Urban Center Roads (see definition);

The compost is used only in public ways;

The compost is not used in residential areas;

The compost is kept above the level of the groundwater;

The compost is not used in designated "No Salt Areas";

The compost is not used within the 100 foot buffer zone of a wetland or within wetland resource areas including bordering vegetative wetlands and riverfront areas;

The compost is not used within 500 feet of a ground or surface drinking water supply.

## 5 OTHER USES

Any use not pre-approved in the preceding section requires prior Department approval under the Beneficial Use provisions of the Solid Waste Management Facility Regulations at 310 CMR 19.060. A "Beneficial Use Determination" or BUD can be made only after the submission of an application characterizing the waste and describing the proposed beneficial use.

## 6 DISPOSAL

While the beneficial use of street sweepings is strongly encouraged, the Department does not prohibit the disposal of street sweepings. Street sweepings may be disposed in either lined or unlined permitted solid waste landfills without prior approval from the Department.

## 7 HANDLING

### 7.1 Collection of Street Sweepings

Although DEP does not regulate the collection of street sweepings, collection practices should be compatible with intended uses. For example, sweepings from Urban Center Roads are not approved for the uses allowed for sweepings from other areas. Keeping sweepings from

### 7.2 Storage

Street sweepings shall be temporarily stored prior to use, only when the following conditions are satisfied:

Storage must be at the site where the sweepings are generated (in the public way) or at a location, such as a DPW yard, that is under the control of the governmental entity which is doing the sweeping or has contracted for the sweeping;

The sweepings shall be protected from wind and rain to the extent necessary to prevent dust, erosion and off-site migration;

The sweepings shall not be stored within the 100 foot buffer zone of a wetland or within wetland resource areas including bordering vegetative wetlands and riverfront areas;

The sweepings shall not be stored within 500 feet of a ground or surface drinking water supply;

Storage shall incorporate good management practice and result in no public nuisance;

Storage must be temporary. Street sweepings shall be used within one year of collection unless the DEP Regional Office in the region where the sweepings are stored grants a written extension. An extension may be granted when it is demonstrated that all storage conditions will continue to be satisfied and the stored sweepings will be put to a specific identified use prior to the expiration of the extension period.

### 7.3 Preparation Prior to Use

Solid waste, such as paper, auto parts and other trash, shall be removed from the sweepings prior to use. Leaves, twigs and other organic matter should also be removed when good engineering practice indicates this is necessary to produce a material that is suitable for the intended use.

## 8 BACKGROUND

The Department has consistently classified street sweepings as solid waste subject to Massachusetts General Law Chapter 111, Section 150A and the Massachusetts Solid Waste Regulations (Site Assignment Regulations for Solid Waste Facilities, 310 CMR 16.00 and Solid Waste Management Facility Regulations, 310 CMR 19.000). There has been confusion among some in the regulated community about this classification.

## 9 ADDITIONAL INFORMATION

For additional copies of this policy, permit application forms or other DEP documents (except regulations) call any DEP Regional Office and ask for the Service Center or call the DEP Infoline in Boston. The permit application number for a Beneficial Use Determination is BWP SW-13 (Major) and BWP SW-30 (Minor).

Many DEP documents, including this policy, are available via modem from the DEP electronic bulletin board system, (617)292-5546. Information about the DEP and some documents are also available from the DEP's internet site at http://www.magnet.state.ma.us/dep.

Copies of all Massachusetts regulations, including the solid waste regulations, may be purchased from the State House Bookstore, (617)727-2834. The solid waste regulations are:

310 CMR 16.000, Site Assignment Regulations for Solid Waste Facilities

310 CMR 19.000, Solid Waste Management Facility Regulations

### Questions about the Provisions of the Policy

If you have technical questions about the policy, please call any DEP office and ask to speak with a staff member about the provisions of the policy.

DEP InfoLine: from area code 617 and outside MA: (617)338-2255
from area codes 413 and 508: (800)462-0444
e-mail: infoline@state.ma.us

DEP Western Regional Office
436 Dwight Street
Springfield, MA 01103
Main Number: (413)784-1100
Service Center: extension 214

DEP Central Regional Office
627 Main Street
Worcester, MA 01605
Main Number: (508)792-7650
Service Center: (508)792-7683

DEP Northeast Regional Office
10 Commerce Way
Woburn, MA 01801
Main Number: (617(932-7600
Service Center: (617)932-7677

DEP Southeast Regional Office
20 Riverside Drive
Lakeville, MA 02347
Main Number: (508)946-2700
Service Center: (508)946-2714

DEP Boston Office
Division of Solid Waste
One Winter Street
Boston, MA 02108
(617)292-5960

Attachment E

## What do I have to do now?

A facility which meets the four criteria described above must comply with the SPCC rule. The SPCC rule requires the owner or operator of a facility existing before August 16, 2002, to amend, if necessary, the SPCC Plan on or before February 17, 2003, and to implement the amended Plan by August 18, 2003. The owner or operator of a facility that becomes operational after August 16, 2002, through August 18, 2003, must prepare and implement a Plan on or before August 18, 2003. The owner or operator of a facility which becomes operational after August 18, 2003, must prepare and implement a Plan before beginning operations. This Plan must be prepared in accordance with good engineering practices.

No matter who prepares your SPCC Plan, remember that ultimately it is the owner or operator who is responsible for complying with the rule. A copy of the rule is available on our website at *www.epa.gov/oilspill*. You may also call or write to the nearest EPA office listed on the following page.

Although each SPCC Plan is unique to the facility, there are certain elements that must be included in order for the SPCC Plan to comply with the provisions of 40 CFR 112. Three areas which should be addressed in the Plan are: 1) operating procedures the facility implements to prevent oil spills; 2) control measures installed to prevent oil from entering navigable waters or adjoining shorelines; and 3) countermeasures to contain, cleanup, and mitigate the effects of an oil spill that has an impact on navigable waters or adjoining shorelines. Some other important elements of an SPCC Plan include, but are not limited to, the following:

- Professional Engineer certification
- Plan must follow the sequence of 40 CFR 112.7 or provide cross-references to the requirements in 40 CFR 112.7
- Facility diagram
- Oil spill predictions
- Facility drainage
- Facility inspections
- Site security
- Five-year Plan review
- Management approval
- Appropriate secondary containment or diversionary structures
- Loading/unloading requirements and procedures for tank car and tank trucks
- Personnel training and oil discharge prevention briefings
- Brittle fracture evaluations
- Bulk storage container compliance
- Transfer procedures and equipment (including piping)

Attachment F







# ADVISORY

**To:** Head of Fire Departments

**From:** Stephen D. Coan, State Fire Marshal

**Date:** August 26, 1997

**Re:** Fueling Motor Vehicles from a Tank Vehicle

## Fueling Motor Vehicles from a Tank Vehicle

It has been brought to our attention that many fleet operators are seeking alternatives to storing motor fuel in underground storage tanks. One of the options is to fuel motor vehicles from a tank vehicle.

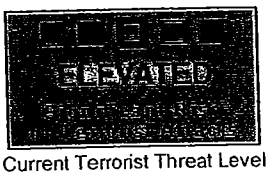
Be advised 527 CMR 5.08:(6) of the board of Fire Prevention Regulations allows the dispensing of motor fuel in the open from a tank vehicle to a motor vehicle or other motorized equipment located at commercial, industrial, governmental, construction sites, or manufacturing establishments not open to the public, and intended for fueling vehicles used in connection with their businesses, provided:

- An inspection of the premises and operations has been made by the head of the fire department.
- A permit has been obtained by the owner/operator of the premises for such fueling operation from the head of the fire department of the city or town where the fueling is to take place.
- The tank vehicle must comply with 527 CMR 8.00: TRANSPORTATION OF FLAMMABLE AND COMBUSTIBLE LIQUIDS.
- The tank vehicle operator or other competent person must be in constant attendance at the dispensing nozzle during the filling operation and must have a copy of the permit in his possession.
- The dispensing nozzle must be a listed self-closing type without a hold-open clip.
- Deliveries must be made in adequately lighted areas.
- The tank vehicle flashing lights must be in operation while dispensing.
- Fuel expansion space must be left in each tank being filled to prevent overflow in event of temperature increases.
- Smoking or the use of open flames within 25 feet of the fueling operation and related equipment shall be prohibited.
- Filling operations must be carried out in an outdoor area. Filling vehicles inside garages is prohibited.

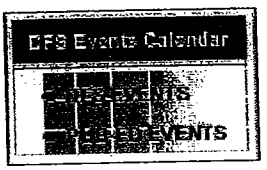
Further, the head of the fire department may prescribe conditions under which the fueling may be conducted.

If you have any further questions, you may call Wayne Delaney, Compliance Officer, Office of the State Fire Marshal, at 978-567-3300.

DFS Photo




Current Terrorist Threat Level



Attachment

Search by Keywords

Search

Advanced Search

Displayed: All Records

Status **rating** describes the availability of reliable *data* on product performance. It does not reflect the pollution removal effectiveness of the product itself. Link to Data Review Explanation.

| # | Status | Tested by | Model | Technology |
|---|---|---|---|---|
| 1 | 3 | TSS, TN, NH4+, TP, EC | VS40 | VortSentry :: **BMP Type:** Swirl or vortex separator *(Sedimentation Unit)*. **Pollutants Addressed:** Suspended sediment concentration; Total suspended solids; Total solids; Oil and grease; Debris - floatables; Debris- sinking; Zinc; Copper; Lead; Iron; Chromium; Mercury; Cadmium; Ammonium; Hydrocarbons; Organic contaminants; Salt; Fecal coliform; E. coli; Enterococcus; Total nitrogen; Total Phosphorus; Temperature ] **Product of** Vortechnics Inc. |
| 2 | 2 | TSS, SSC | STC 1200 | In-Line Stormceptor :: **BMP Type:** Oil/sediment separator *(Sedimentation Unit)*. **Pollutants Addressed:** Mercury; Cadmium; Ammonium; Hydrocarbons; Total Keldhal Nitrogen; Total Phosphorus; Suspended sediment concentration; Total suspended solids; Oil and grease; Zinc; Copper; Lead; Iron; Chromium ] **Product of** Stormceptor |
| 3 | 2 | TSS | 4-FT | Downstream Defender :: **BMP Type:** Swirl or vortex separator *(Sedimentation Unit)*. **Pollutants Addressed:** Total suspended solids; Total solids; Oil and grease; Debris - floatables ] **Product of** Hydro International |
| 4 | 0 | TSS, SSC, DS, O/G, Floatables | HG 6 | Hydroworks HG (Hydroguard) Separator :: **BMP Type:** Swirl or vortex separator *(Sedimentation Unit)*. **Pollutants Addressed:** Suspended sediment concentration; Total suspended solids; Oil and grease; Debris - floatables; Debris- sinking; Hydrocarbons ] **Product** |

| | | | | |
|---|---|---|---|---|
| | | | | of Hydroworks LLC |
| 5 | 2 | TSS | Various (VF4r to VF1218) | VortFilter :: **BMP Type:** Inorganic Filter *(Filtration - Media filter)*. **Pollutants Addressed:** Total suspended solids; Total solids; Oil and grease; Debris - floatables; Debris- sinking; Zinc; Copper; Lead; Iron; Chromium; Mercury; Cadmium; Ammonium; Total nitrogen; Total Phosphorus ] **Product of** Vortechnics Inc. |
| 6 | 3 | TSS | PMSU20_20_5 | CDS Inline Unit :: **BMP Type:** Swirl or vortex separator *(Sedimentation Unit)*. **Pollutants Addressed:** Total suspended solids; Oil and grease; Debris - floatables ] **Product of** CDS Technologies, Inc. |
| 7 | 0 | TSS, NH4+, TKN, TP, O/G | SD-100 | AquaFilter Stormwater Filtration System :: **BMP Type:** Hydrodynamic device - other *(Sedimentation Unit)*. **Pollutants Addressed:** Total suspended solids; Oil and grease; Lead; Chromium; Ammonium; Total Keldhal Nitrogen; Total Phosphorus; Temperature ] **Product of** AquaShield |
| 8 | 3 | TSS | StarFilter disks + Arkal Media Filters AGF | Arkal Pressurized Stormwater Filtration System :: **BMP Type:** Synthetic Filter *(Filtration - Media filter)*. **Pollutants Addressed:** Total suspended solids ] **Product of** Arkal Filtration Systems |
| 9 | 3 | TSS, TKN, TP, Pb | Not specified | StormTreat System (TM), Inc. :: **BMP Type:** Oil/sediment separator *(Sedimentation Unit)*. **Pollutants Addressed:** Total suspended solids; Zinc; Lead; Chromium; Fecal coliform; Total Keldhal Nitrogen; Total Phosphorus ] **Product of** StormTreat Systems |
| 10 | 0 | TSS, TP, O/G | FGP-24F | FloGard+Plus :: **BMP Type:** Catch Basin Insert *(Pretreatment Technology)*. **Pollutants Addressed:** Total suspended solids; Oil and grease; Total Phosphorus ] **Product of** Kristar Enterprises, Inc. |
| 11 | 3 | TSS, NO3/NO2, Floatables, TS, SSC | 1056 | CrystalStream Water Quality Vault :: **BMP Type:** Hydrodynamic device - other *(Sedimentation Unit)*. **Pollutants Addressed:** Suspended sediment concentration; Total suspended solids; Total solids; Debris - floatables; Debris- sinking; Nitrate-nitrite ] **Product of** CrystalStream Technologies |
| 12 | 2 | TSS, Zn, Cu | StormFilter | Stormwater Management StormFilter :: **BMP Type:** Inorganic Filter *(Filtration - Media filter)*. **Pollutants Addressed:** Total suspended solids; Zinc; Copper; Hydrocarbons ] **Product of** Stormwater Management Inc. |
| 13 | 3 | TSS | Module II | Hancor Storm Water Quality Unit :: **BMP Type:** Oil/sediment separator *(Sedimentation Unit)*. **Pollutants Addressed:** Total suspended solids; Oil and grease; Debris - floatables; Hydrocarbons ] **Product of** Hancor Inc. |
| 14 | 3 | EC, TN, TP, FC, Ent | 7000 and 1000 | Vortechs System :: **BMP Type:** Swirl or vortex separator *(Sedimentation Unit)*. **Pollutants Addressed:** Suspended sediment concentration; Total suspended solids; Total dissolved solids; Total volatile solids; Total solids; Oil and grease; Debris - floatables; Debris- sinking; Zinc; Copper; Lead; Iron; Chromium; Mercury; Cadmium; Hydrocarbons; Organic contaminants; Salt; |

| | | | | |
|---|---|---|---|---|
| | | | | Fecal coliform; E. coli; Enterococcus; Total nitrogen; Total Phosphorus ] **Product of** Vortechnics Inc. |
| 15 | 3 | TSS | n/a | Cultec Stormfilter :: **BMP Type:** Screen separator *(Sedimentation Unit)*. **Pollutants Addressed:** Total suspended solids ] **Product of** Cultec |
| 16 | 3 | TSS, TKN, TP, Floatables | not specified | Grate Inlet Skimmer Box :: **BMP Type:** Catch Basin Insert *(Pretreatment Technology)*. **Pollutants Addressed:** Total Keldhal Nitrogen; Total Phosphorus; Total suspended solids; Debris - floatables ] **Product of** Suntree Technologies Inc. |
| 17 | 3 | TSS, TS | 4 cartridge 6 x 12 vault | StormScreen :: **BMP Type:** Synthetic Filter *(Filtration - Media filter)*. **Pollutants Addressed:** Total suspended solids; Total solids; Debris - floatables; Debris- sinking ] **Product of** Stormwater Management Inc. |
| 18 | 2 | TSS, SSC | 1K | BaySaver Separation System :: **BMP Type:** Oil/sediment separator *(Sedimentation Unit)*. **Pollutants Addressed:** Debris - floatables; Suspended sediment concentration; Total suspended solids; Oil and grease; Debris- sinking ] **Product of** Baysaver |
| 19 | 3 | Floatables, DS | FG-TDG42 | Flo-Gard Trash & Debris Guard :: **BMP Type:** Catch Basin Insert *(Pretreatment Technology)*. **Pollutants Addressed:** Debris - floatables; Debris- sinking ] **Product of** Kristar Enterprises, Inc. |
| 20 | 3 | TSS | Several | Cultec Contactor and Cultec Recharger :: **BMP Type:** Chamber - Plastic *(Infiltration)*. **Pollutants Addressed:** Total suspended solids ] **Product of** Cultec |
| 21 | 3 | TSS, TP | Several | V2B1 :: **BMP Type:** Swirl or vortex separator *(Sedimentation Unit)*. **Pollutants Addressed:** Total suspended solids; Oil and grease; Debris - floatables; Total Phosphorus ] **Product of** Environement21 LLC |
| 22 | 3 | TSS, O/G | 4105-L | Hydrocartridge :: **BMP Type:** Catch Basin Insert *(Pretreatment Technology)*. **Pollutants Addressed:** Total suspended solids; Oil and grease ] **Product of** Advanced Aquatic Products |
| 23 | 3 | Floatables | Floating | Netting Trash Trap :: **BMP Type:** Advance inlet structure *(Pretreatment Technology)*. **Pollutants Addressed:** Debris - floatables ] **Product of** Fresh Creek Technologies Inc. |
| 24 | 3 | TSS, TP, O/G, Zn, Cu | BMP01 | Clearwater Solutions BMP01 :: **BMP Type:** Catch Basin Insert *(Pretreatment Technology)*. **Pollutants Addressed:** Total suspended solids; Oil and grease; Debris - floatables; Debris-sinking; Zinc; Copper; Lead; Total Phosphorus ] **Product of** Clearwater Solutions |
| 25 | 3 | TSS, O/G, TPH | Drop Inlet | DrainPac :: **BMP Type:** Catch Basin Insert *(Pretreatment Technology)*. **Pollutants Addressed:** Total suspended solids; Oil and grease; Hydrocarbons ] **Product of** United Stormwater Inc. |

| | | | | |
|---|---|---|---|---|
| 26 | 2 | EC, Ent | Models DI and CO | Ultra -Urban® Filter with Smart Sponge Plus 4 Antimicrobial :: **BMP Type:** Catch Basin Insert *(Pretreatment Technology)*. **Pollutants Addressed:** Enterococcus; Total suspended solids; Oil and grease; Debris - floatables; E. coli ] **Product of** Abtech Industries |
| 27 | 3 | TSS, TPH | n/a | Hydro-Kleen.™ Filtration System :: **BMP Type:** Catch Basin Insert *(Pretreatment Technology)*. **Pollutants Addressed:** Total suspended solids; Hydrocarbons ] **Product of** Hydro Compliance Management Inc. |
| 28 | 3 | TSS, O/G | Oil and Sediment Model # 9217 | UltraDrainguard® :: **BMP Type:** Catch Basin Insert *(Pretreatment Technology)*. **Pollutants Addressed:** Total suspended solids; Oil and grease; Debris- sinking ] **Product of** UltraTech International |

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STORMWATER TECHNOLOGIES CLEARINGHOUSE © 2004

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THE COMMONWEALTH OF MASSACHUSETTS
STATE RECLAMATION & MOSQUITO CONTROL BOARD

# CENTRAL MASSACHUSETTS MOSQUITO CONTROL PROJECT

111 Otis Street, Northborough, MA 01532-2414
Telephone (508) 393-3055 • Fax (508) 393-8492
www.cmmcp.org

# ANNUAL REPORT 2005

## PREFACE

The 2005 Annual Report of the Central Massachusetts Mosquito Control Project (the Project) has been prepared to provide the citizens and officials of the member cities and towns with information pertaining to the Project's control procedures and related activities.

As you read through this report you will notice that the Project is committed to an Integrated Mosquito Management (IMM) program. IMM utilizes a variety of control techniques and evaluation procedures. All control efforts are undertaken only after surveillance data has been collected and analyzed. This allows control decisions to be made based on the exact need that exists at each specific site. Environmental considerations are paramount when prescribing various control techniques.

The CMMCP Board of Commission is appointed by the State Reclamation and Mosquito Control Board to represent your community's interest. The Commissioners meet with the Executive Director and Director of Operations on a regular basis to discuss and formulate policies, and to provide their expertise in the operation of the Project. The Commissioners welcome your input, and we encourage you to schedule an appointment to visit our Project headquarters.

Copies of this report are distributed to key officials and departments in our member communities, as well as to the public libraries. We would encourage officials to take time from their busy schedule to read this report. Project personnel are available to answer questions you may have, and to meet with you to discuss out procedures and techniques. The Project's website at **www.cmmcp.org** has extensive information on mosquito control in Central Massachusetts.

The Project's goal is to provide effective and environmentally sound mosquito control, reducing mosquito annoyance and the potential for the transmission of mosquito-borne diseases. Our staff of competent, well-trained employees are known throughout the member communities as individuals who take great pride in their work.

Thank you,

Richard J. Day, Chair
Board of Commissioners
Central Massachusetts Mosquito Control Project

**THE COMMONWEALTH OF MASSACHUSETTS**

State Reclamation & Mosquito Control Board
251 Causeway Street Suite 500
Boston, Massachusetts 02114

http://www.mass.gov/agr/mosquito/

**State Reclamation Board - Members**

Mr. Mark Buffone (DAR) - Chair

Mr. Charles Burnham (DCR)

Mr. Gary Gonyea (DEP)

Ms. Donna Mitchell - Projects Administrator

**Commissioners of Central Massachusetts Mosquito Control Project**
commission@cmmcp.org

Mr. Richard J. Day - Chair
Chelmsford, Massachusetts

Mr. Dean Mazzarella
Leominster, Massachusetts

Mr. Pablo E. Noguera
Londonderry, New Hampshire

Mr. George Smith
Northborough, Massachusetts

Mr. Paul Mazzuchelli
Milford, Massachusetts

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**Office Manager**

Ms. Karen Millet
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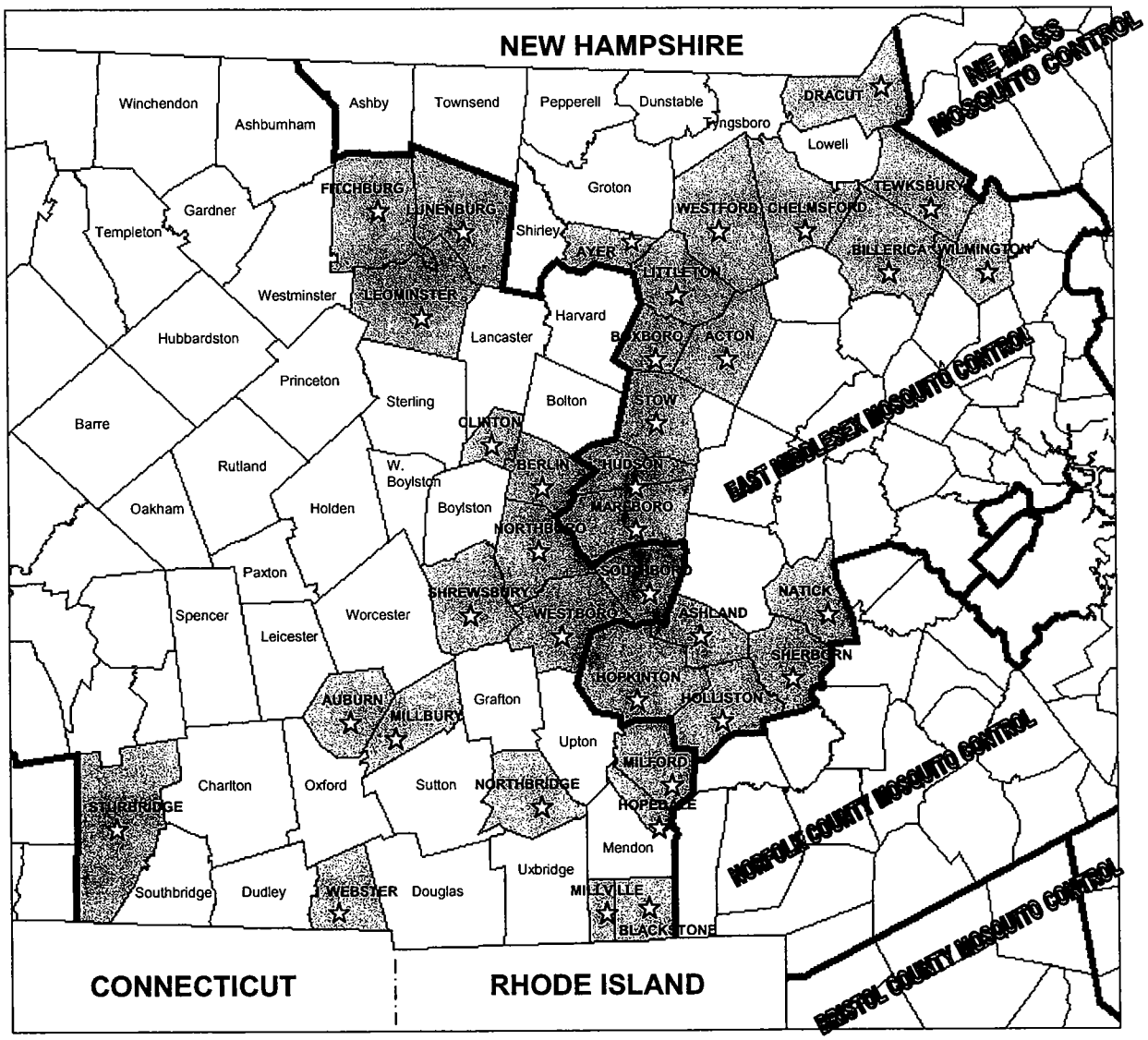
## LIST OF MEMBER COMMUNITIES

| TOWN | SQUARE MILES |
|---|---|
| **DISTRICT ONE** | |
| BILLERICA | 25.96 |
| CHELMSFORD | 22.70 |
| DRACUT | 20.90 |
| LITTLETON | 16.60 |
| TEWKSBURY | 20.70 |
| WESTFORD | 30.60 |
| WILMINGTON | 17.12 |
| **DISTRICT TWO** | |
| ACTON | 20.00 |
| AYER | 9.00 |
| BOXBOROUGH | 10.40 |
| FITCHBURG | 27.80 |
| LEOMINSTER | 28.90 |
| LUNENBURG | 26.40 |
| STOW | 17.60 |
| **DISTRICT THREE** | |
| BERLIN | 12.90 |
| CLINTON | 5.70 |
| HUDSON | 11.50 |
| MARLBOROUGH | 21.10 |
| NORTHBOROUGH | 18.50 |
| SHREWSBURY | 20.70 |
| SOUTHBOROUGH | 14.10 |
| **DISTRICT FOUR** | |
| ASHLAND | 12.40 |
| HOLLISTON | 18.70 |
| HOPEDALE | 5.27 |
| HOPKINTON | 26.60 |
| MILFORD | 14.60 |
| NATICK | 15.10 |
| SHERBORN | 16.00 |
| WESTBOROUGH | 20.50 |
| **DISTRICT FIVE** | |
| AUBURN | 15.40 |
| BLACKSTONE | 10.90 |
| MILLBURY | 15.70 |
| MILLVILLE | 4.92 |
| NORTHBRIDGE | 17.20 |
| STURBRIDGE | 37.40 |
| WEBSTER | 12.50 |
| Total Square Miles | 642.37 |

# CMMCP SERVICE AREA




## ~ 2005 ~

= member towns

## MOSQUITO CONTROL ACTIVITIES

One basic fact of the mosquito's biology is the dependence on still, stagnant water to complete its life cycle from egg to adult. Currently, there are two basic control methods practiced by the Project to disrupt this process. The first and most permanent method is called "*water management, source reduction or wetlands restoration*". This method reduces or eliminates the source of a potential mosquito problem, and consists of cleaning road-side ditches and culverts, removal of brush and accumulated debris from streams, and removal of containers which contain water. All of the above mentioned methods serve to accomplish the same goal - they permit water to flow freely, and reduce the likelihood for stagnant areas, areas in which the mosquito needs to reproduce. Source reduction is practiced year-round, and is done only after extensive examinations, and permission is received by the property owner(s).

There are places where water management is neither practical nor feasible for one reason or another. In these situations, we practice a method called *larviciding*. After a field technician has determined that larval mosquitoes are present, a small amount of environmentally sensitive product is applied to the area according to label directions. This is often a very effective control method, reducing the emergence of the adult mosquito from that area. Larviciding is practiced from late-March to September. Bti is the product of choice for larviciding in wetlands.

A third method is to attempt to control the adult mosquito. The control of adult mosquitoes is done on a *request-only* basis, and the presence of adult mosquitoes is confirmed before any application is done. Adulticiding can be an effective method of *temporary* control, which can be beneficial prior to public gatherings, outdoor events and festivals, or when mosquito populations have been determined to be intolerable. Since this part of the program is done **opponrt** , this allows the individual resident to have the ultimate discretion on mosquito spraying in their area - how much or how little. Exemptions for spraying are handled through the City/Town Clerk and the Project office, and are updated each year. Adulticiding is done from approximately Memorial Day to Labor Day, depending on prevalent mosquito populations and the mosquito-borne disease situation.

All products used by the Project have been extensively tested by manufacturers, the US government and mosquito control agencies for many years. They are registered by the EPA and the Mass. Pesticide Bureau. Labels and fact sheets are available upon request to the public from the Project's office, or from our website.

We operate a full surveillance program in our service area. The landing rates performed by our field staff are brought back to the Project lab to be keyed out to species, allowing us to tailor our larviciding program and reduce future dependence on adulticides. We have a mobile team of specialized mosquito traps, called *gravid traps*, designed to capture virus-bearing mosquitoes. These mosquito collections, called *pools*, are sent into the Mass. Dept. of Public Health (MDPH) laboratory in Jamaica Plain for testing of West Nile Virus, Eastern Equine Encephalitis, and other arboviruses of concern by MDPH. These traps are used in a rotation throughout our service area, and are then concentrated in areas showing arboviral activity to supplement MDPH's collection protocols. Additional trap types are utilized in suspect areas to monitor and evaluate the risk of viral transmission to the local populace.

A comprehensive educational program is offered to area schools and civic groups. The program is aimed towards mosquito biology, mosquito habitat, and efforts citizens can undertake to reduce the potential for mosquito populations in their own neighborhood. This program is tailored to suit the requirements of the individual group, from elementary school children, to high school, to adult groups.

## PROGRAM EVALUATION

This is a part of the program which many people involved directly never see. It must begin with a carefully planned program, one designed so that the data obtained during surveys before treatment and the surveys taken after treatment can be analyzed by statistically sound methods. Only by doing this can the value of a mosquito control program be determined. We will then know what type (species) of mosquito we are dealing with; what the population density is; what method(s) of control provide the most economical and efficient results.

Then and only then can we say that we have or have not affected mosquito control on a level that is acceptable to the community.

## SEASONAL OUTLINE OF MOSQUITO CONTROL PROGRAM

1. Vehicle and equipment repair and storage - November through March
2. Wetlands Restoration - throughout the year
3. Program Preparation - December through March
4. Map compilation and training - throughout the year
5. Larviciding - May through September
6. Adulticiding - June through September
7. Catch Basin Treatment - May through September

Any mosquito control being done by individual member communities must, by law, be coordinated through the Central Massachusetts Mosquito Control Project.

TOWN OF BILLERICA

| DATE | WORK DONE | LOCATION |
|---|---|---|
| 01-03-05 | Public Relations | Satuckett Lane |
| | Stream Cleaning 100' | Concord Road |
| | Stream Cleaning 45' | Concord Road |
| | Stream Cleaning 30' | River Hurst Road |
| | Stream Cleaning 45' | Ossamequin Street |
| | Stream Cleaning 40' | Satuckett Lane |
| | Stream Cleaning 30' | Osceola Lane |
| | Stream Cleaning 20' | Osceola Lane |
| | Stream Cleaning 50' | Concord Road |
| | Stream Cleaning 40' | Concord Road |
| | Stream Cleaning 40' | Dudley Road |
| | Stream Cleaning 15' | Dudley Road |
| | Stream Cleaning 25' | Nashua Road |
| | Stream Cleaning 30' | Nashua Road |
| | Culvert Cleaning (14) | Concord Road, River Hurst Road, Ossamequin Street, Satuckett Lane, Osceola Lane, Dudley Road, Nashua Road |
| 03-04-05 | Stream Survey | Ichabod Lane |
| 03-07-05 | Brush Cutting 130' | Shane Lane |
| 03-10-05 | Brush Cutting 130' | Shane Lane |
| 03-11-05 | Brush Cutting 55' | Shane Lane |
| 03-15-05 | Brush Cutting 200' | Shane Lane |
| 03-16-05 | Brush Cutting 375' | Shane Lane |
| 03-17-05 | Brush Cutting 200' | Ichabod Lane |
| 03-17-05 | Stream Cleaning 200' | Ichabod Lane |
| 03-18-05 | Brush Cutting 100' | Ichabod Lane |
| | Stream Cleaning 200' | Ichabod Lane |
| 03-21-05 | Brush Cutting 225' | Ichabod Lane |
| | Stream Cleaning 200' | Ichabod Lane |
| 03-22-05 | Brush Cutting 250' | Ichabod Lane |
| 03-23-05 | Stream Cleaning 350' | Ichabod Lane |
| 03-24-05 | Brush Cutting 65' | Ichabod Lane |
| | Stream Cleaning 400' | Ichabod Lane |
| 03-25-05 | Brush Cutting 250' | Ichabod Lane |
| | Stream Cleaning 400' | Ichabod Lane |
| 04-12-05 | Administrative Contact | Town Hall - Clerk's Office |
| | Administrative Contact | Board Of Conservation |
| | Public Relations | Salem Street, Gray Street, Belmont Road, Short Street, Concord Road, Osceola Lane, Riverhurst Road |
| | Larval Survey | Salem Street, Belmont Road, Arey Street, Technology Park Drive, Concord Road, Old Concord Road, Quaker Lane |
| | Larviciding | Gray Street, Technology Park Road, Osceola Lane, Roosevelt Road |
| 04-13-05 | Public Relations | Salem Road |
| | Larviciding | Salem Road |
| 04-14-05 | Administrative Contact | Town Hall |
| 04-20-05 | Public Relations | Andover Road, Dignon Road, Buckingham Drive, Glad Valley Road, Campbell Road, Concord Road, Ricca Farm Road, Nashua Road, Pelham Street, Carter Avenue |
| | Larval Survey | Dignon Road, Wed Meadow Lane, Ricca Farm Lane, Simonds Farm Road, Nashua Road, Pelham Street, Colby Street, Carter Road, Rangeway Road, Boston Road, Burnham Road, Arakelian Drive, Riverside Road |
| | Larviciding | Andover Road, Campbell Road, Concord Road, Rangeway, Road, Simonds Farm Road, Nashua Road, Pelham Street, Carter Road |
| 04-22-05 | Larval Survey | Rangeway Road, Boston Road, Burnham Road, Arakelian Drive, Riverside Road, Alexander Road, Salem Road |
| | Larviciding | Riverside Road, Shawsheen Road, Salem Road |
| 04-28-05 | Town Hall | Town Clerk |
| 04-30-05 | Public Relations | Simmons Lane, Salem Road, Gray Street, Green Acre Drive, George Brown Road, Putney Circle, Handle Road, Bellflower Road, |
| | Larval Survey | Gray Street, Putney Circle |
| | Larviciding | Simmons Lane, Salem Road, Green Acre Drive, Bellflower Road, George Brown Street, Handle Road |

TOWN OF BILLERICA

| DATE | WORK DONE | LOCATION |
|---|---|---|
| 05-02-05 | Public Relations | Fourth Avenue, Jefferson Road, Connolly Road, Crimson Road, Pelham Street, Colson Street, High Street, Silver Smith Way |
| | Stream Cleaning 50' | Fourth Avenue |
| | Culvert Cleaning (1) | Fourth Avenue |
| | Larval Survey | Longfellow Lane, Hattie Lane, Pelham Street, Colson Street, High Street, Susanna Road, Hardwood Drive, Town Farm Lane, Driftwood Lane, Corthell Road, Sheldon Street |
| | Larviciding | Fourth Avenue, Jefferson Road, Connolly Road, Crimson Road, Longfellow Lane, Hattie Lane, Old Elm Street, High Street, Silver Smith Way, Hard Wood Drive, Corthell Road, Bart Road, South Madison Road, South Monroe Street |
| 05-06-05 | Public Relations | Rolling Hill Road, Neighborly Way, Sachem Street, Glade Street, Monson Street, Cove Street |
| | Stream Cleaning 70' | Arcadia Road |
| | Stream Cleaning 70' | Farm Street |
| | Larval Survey | Rolling Hill Road, Arcadia Road, Boston Road, Bank Side Drive, Topliff Street, Mcginness Way, Bicknell Road, Cook Street, Farm Street, Alexander Road, Monson Street |
| | Larviciding | Garden Brook, Main Street, Griffin Circle, Neighborly Way, Cook Street, Sachem Street, Bicknell Road, Pheasant Road, Cook Street, Glade Street, Connolly Road, Shelburne Avenue, Cove Street, Campbell Street |
| 05-12-05 | Public Relations | Fardon Street, Albion Road, Argonne Road, Shawsheen Road, Sheridan Street, Ravine Road |
| | Stream Cleaning 50' | Glad Valley Drive |
| | Culvert Cleaning (2) | Glad Valley Drive, Shawsheen Road |
| | Larval Survey | Sheridan Street, River Bank Terrance, Fardon Street, Judy Street, Anthony Lane, Shawsheen Road, Argonne Road, Innis Drive, Wild Crest Drive, |
| | Larviciding | Glad Valley Drive, Innis Drive, Boston Road, Shawsheen Road, Albion Road, Nashua Road, Community Road, River Bank Terrance, Wildcrest Drive, Adelman Road, Marshbrook Road, Ravine Road |
| 05-18-05 | Public Relations | Saville Street |
| | Trap Site Survey | Saville Street |
| 05-23-05 | Trap Site Survey | Saville Street |
| 05-24-05 | Set Trap | Saville Street |
| 05-25-05 | Pick Up Trap | Saville Street |
| 05-27-05 | Public Relations | Boston Road, Rangeway Road, Gov. Saltonstall Road |
| | Larval Survey | McLennan Way, Boston Road, Rangeway Road, Sullivan Road, Go. Fuller Road |
| | Larviciding | Boston Road, Rangeway Road, Old Rangeway Road, Charter Way, Sullivan Road, Treble Cove Terrace, Winning Road, Gov. Saltonstall Road |
| 05-31-05 | Administrative Contact | Police Department, Town Clerk, Board Of Health |
| | Public Relations | Wild Brook Road, Fredrickson Road, Anthony Lane, Topliff Street, Edgebaston Road, Connolly Road, Pheasant Road, Rangeway Road, Boston Road, Alpine Street, Wallace Road, Pond Street, Gov. Saltonstall Road, Andrea Road, Verbena Drive, Lois Lane, Millers Farm Road |
| | Landing Count | Rangeway Road, Boston Road, Alpine Street, Andover Road, Millers Farm Road |
| | Larval Survey | Alpine Street, Wildbrook Road |
| | Larviciding | Alpine Street |
| | Adulticiding | Pond Street, Pheasant Road, Connolly Road, Edgebaston Road, Topliff Street, River Bank Terrace, Anthony Lane, Fredrickson Road, Wildbrook Road, Millers Farm Road, Lois Lane, Verbena Drive, Andover Road, Gov. Saltonstall Road, Wallace Road, Alpine Street, Boston Road, Rangeway Road |
| | Set Trap | Saville Road |
| | Pick Up Trap | Saville Road |
| 06-07-05 | Set Trap | Saville Road |

TOWN OF BILLERICA

| DATE | WORK DONE | LOCATION |
|---|---|---|
| 06-08-05 | Administrative Contact | Board Of Health, Police Department, Billerica Public Library |
| | Public Relations | Simmons Lane, Market Street, Oak Street, Burnham Road, Ashdale Drive, Silver Smith Way, High Street, Alpine Street, White Gate Road, Horman Road, Simmons Lane, Todd Lane, Etta Road, Andover Road, Freddy Road, Concord Road, Pelham Street, Dudley Road, Larsen Lane, Edgehill Road, Liberty Drive, Riveredge Road, Fawn Lane, |
| 06-08-05 | Public Relations | Timber Creek Lane |
| | Landing Count | Market Street, Silver Smith Way, Horman Road, Todd Lane |
| | Larviciding | Oak Street |
| | Adulticiding | Concord Road, Dudley Road, Timber Creek Lane, Fawn Lane, Doe Drive, Simmons Lane, Horman Road, White Gate Road, High Street, Alpine Street, Todd Lane, Freddy Road, Ashdale Drive, Burnham Road, Oak Street, Market Street, Silver Smith Way, Andover Road, Etta Road |
| | Pick Up Trap | Saville Road |
| 06-09-05 | Administrative Contact | Police Department |
| | Public Relations | Ellingwood Avenue |
| | Adulticiding | Ellingwood Avenue, Pelham Street |
| | Landing Count | Ellingwood Avenue |
| 06-14-05 | Administrative Contact | Board Of Health, Police Department |
| | Public Relations | Simmons Lane, Shelburne Avenue, Irene Avenue, Olney Street, Bruning Street, Green Leaf Street, Crimson Road, Lincoln Road, Bicknell Road, Shawsheen Road, Wild Brook Road, Jef Road, Meade Road, Fredrickson Road, Monson Street, Pond Street Ext. Cove Street, Fardon Street, Glad Valley Drive, Anthony Lane, Garden Brook Road, Arcadia Road, Devon Shire Drive, Aynsley Circle, Minton Road, Gilman Road, Rangeway Road, Ridge Road, Springs Road, Queensland Road, Outlook Road, Larson Lane, Nashua Road, Timber Creek Lane, Sugar Lane, Cinnamon Drive, Casey Street, Estey Road, Tirone Path, Jennings Road, Cinnamon Drive, Gilman Road, Nashua Road, Moran Road |
| | Landing Count | Anthony Lane, Simmons Lane, Shelburne Avenue, Shawsheen Road |
| | Larval Survey | Outlook Road, Gilman Road |
| | Adulticiding | Springs Road, Casey Road, Estey Road, Tirone Path, Jennings Road, Ridge Road, Nashua Road, Rangeway Road, Cinnamon Drive, Sugar Lane, Moran Road, Gilman Road, Outlook Road, Queensland Road, Larsen Lane, Timber Creek Lane, Anthony Lane, Glad Valley Drive, Fardon Street, Cove Street, Pond Lane Ext. Monson Street, Fredrickson Road, Meade Road, Jef Road, Wildbrook Road, Shawsheen Road, Bicknell Road, Lincoln Road, Crimson Road, Green Leaf Street, Burning Street, Olney Street, Gould Street, Irene Avenue, Shelburne Avenue, Simmons Lane, Minton Road, Aynsley Circle, Devonshire Drive, Arcadia Road, Garden Brook Road |
| | Set Trap | Saville Street |
| 06-15-05 | Pick Up Trap | Saville Street |
| 06-16-05 | Administrative Contact | Police Department |
| | Public Relations | Treble Cove Road, Patricia Road, Pequot Street |
| | Adulticiding | Treble Cove Road, Patricia Road, Pequot Street |
| 06-20-05 | Administrative Contact | Police Department |
| | Public Relations | Intervals Road, Sylvan Road, Allen Road, Topliff Street, Sachem Street, Fourth Avenue, Olney Street, Acton Street, Blossom Drive, Harrington Road, Andover Road, Ross Road, Staples Street, Newport Drive, Lampson Lane, Brittany Lane, Whipple Road, Jordan Road, Harjean Road, Harnden Road, D Street, C Street, Grove Street, Greenville Street, Sheridan Street, Chelmsford Road, Forest Park Avenue, Donna Road, Twin Pines Avenue, Boston Road, Sugar Lane, Treble Core Road, Jennings Road, Pelham Street, Liberty Drive, Rexhame Street, Savoy Road, River Street, River Street Ext., Westwood Avenue, Elsie Avenue, Rosewood Avenue, Oakwood Avenue, |

TOWN OF BILLERICA

| DATE | WORK DONE | LOCATION |
|---|---|---|
| 06-20-05 | Public Relations | Maplewood Avenue, Canterbury Street, Perreault Avenue, Cady Street, Doe Drive, Ridge Road, Nashua Road, Concord Road, |
| | Landing Count | Harjean Road, Andover Road, Olney Street, Alton Street, Sylvan Road, Boston Road, Sugar Lane, Pelham Street, River Street Ext. |
| | Adulticiding | Chelmsford Road, Boston Road, Twin Pines Avenue, Donna Road, Forest Part Avenue, Sugar Lane, Cinnamon Drive, Treble Cove Road, Jennings Road, Nashua Road, Doe Drive, Concord Road, Ridge Road, Savoy Street, Walton Street, Rexhame Street, Liberty Drive, Pelham Street, Thoreau Street, Colby Street, River St. Ext. Westwood Avenue |
| 06-20-05 | Adulticiding | Elsie Avenue, River Street, Rosewood Avenue Ext., Oakwood Avenue, Maplewood Avenue, Canterbury Street, Sunrise Avenue, Perreault Avenue, Cady Street, Friendship Street, Harjean Road, Jordan Road, Whipple Road, Brittany Lane, Lampson Lane, Newport Drive, Staples Street, Ross Road, Andover Road, Harrington Road, Blossom Drive, Alton Street, Olney Street, Fourth Avenue, Sachem Street, Topliff Street, Sylvan Road, Allen Road, Interval Road, Baldwin Road, Greenville Street, Grove Street, C Street, D Street, Sheridan Street, Harnden Road |
| 06-21-05 | Set Trap | Saville Street |
| 06-22-05 | Pick Up Trap | Saville Street |
| 06-23-05 | Administrative Contact | Police Department, Board Of Health |
| | Public Relations | Allen Road, Baldwin Road, Millers Farm Road, Charles Gate Road, Radcliff Road, Pattern Road, Ridge Road Gov. Hutchinson Road, Gov. Doherty Road, Baker Street, Sinclair Street, Glad Valley Drive, Boston Road, Garden Brook Road, Arcadia Road, Marsh Brook Road, Jordan Road, Brittany Lane, Ironwood Street, Richards Road, Sequoia Street, Heritage Road, Boston Road, Ridge Road Town Farm Lane, Salem Road, Pollard Street, Shaffer Street, Mary Road, Burnham Road, Hayden Circle, Treble Cove Road, Twin Pines Road, Alpine Street |
| | Landing Count | Baldwin Road, Heritage Road |
| | Adulticiding | Heritage Road, Gov. Hutchinson Road, Gov. Doherty Road, Market Street, Sequoia Street, Ironwood Street, Pattern Road, Brittany Lane, Jordan Road, Radcliff Road, Allen Road, Baldwin Road, Charles Gate Road, Millers Farm Road, Marsh Brook Road, Garden Brook Road, Arcadia Road, Boston Road, Glad Valley Drive, Sinclair Street, Baker Street, Ridge Road, Sheldon Street, Mary Road, Burnham Road, Hayden Road, Horman Road, Pollard Street, Town Farm Lane, Hampstead Road, Treble Cove Road, Manor Road, Twin Pines Road, Alpine Street |
| 06-28-05 | Set Trap | Saville Street |
| 06-29-05 | Administrative Contact | Police Department |
| | Public Relations | Allen Road, Tower Farm Road, Salem Road, Waverly Street, Burnham Road, Corthell Road, Hardwood Road, Pattern Road, Staples Street, Lampson Lane, Freddy Road, Georgianna Road, Lantern Lane, Green Acre Drive, Allen Road, Sheffield Drive, Charlesgate Road, Ben Place, Albert Street, Forest Street, Sachem Road, Riverside Road, Naushon Road, Meade Street, Heritage Road, Donna Road, Forest Park Avenue, Preston Street, Simmons Lane, Freedom Way, Rosewood Avenue, Kilsyth Road, Colonial Drive, Osceola Lane, Ossamequin Road, Timber Creek Circle, Nashua Road, Woodside Drive, Arey Street, New Street, Simmons Lane, Pollard Street, Kilsyth Road |
| | Landing Count | Green Acre Drive, Nashua Road, Ossamequin Road, Donna Road, Rosewood Avenue, Colonial Drive |
| | Larval Survey | Donna Road, Preston Street |

TOWN OF BILLERICA

| DATE | WORK DONE | LOCATION |
|---|---|---|
| 06-29-05 | Adulticiding | Timber Creek Lane, Kilsyth Road, Rosewood Avenue, Simmons Lane, Preston Street, Pollard Street, New Street, Arey Street, Colonial Drive, Donna Road, Forest Park Avenue, Woodside Road, Nashua Road, Osceola Lane, Ossamequin Road, Cardinal Street, Green Acre Drive, Lantern Lane, Charles Gate Road, Meade Street, Naushon Road, River Side Road, Sachem Road, Forest Street, Ben Place, Allen Road, Sheffield Drive, Albert Street, Tower Farm Road, Corthell Road, Hardwood Road, Burnham Road, Waverly Street, Salem Road, Patten Road, Freddy Road, Lampson Lane, Staples Street, Georgianna Road, Heritage Road |
| | Pick Up Trap | Saville Street |
| 07-05-05 | Administrative Contact | Police Department, Board Of Health |
| | Public Relations | Blossom Drive, Green Acre Drive, Staples Street, Whipple Road, Brookside Drive, Richards Road, Sequoia Street, Michael Road, Theresa Avenue, Franklin Street, Donna Road, Forest Park Avenue, Boston Road, Chelmsford Road, Schaefer Street, Laila Lane, Bicknell Road, Sachem Street, Shawsheen Road, Bertha Circle, Whipple Road |
| 07-05-05 | Landing Count | Bertha Circle, Green Acre Drive, Staples Street |
| | Adulticiding | Chelmsford Road, Forest Park Avenue, Donna Road, Boston Road, Franklin Street, Theresa Avenue, Michael Road, Whipple Road, Sequoia Street, Brookside Drive, Staples Street, Green Acre Drive, Blossom Drive, Frost Street, Bertha Circle, Shawsheen Road, Sachem Street, Bicknell Road, Laila Lane, Schaefer Street |
| 07-06-05 | Set Trap | Saville Street |
| 07-07-05 | Administrative Contact | Police Department |
| | Public Relations | Beaver Place |
| | Adulticiding | Beaver Place |
| | Pick Up Trap | Saville Street |
| 07-12-05 | Administrative Contact | Police Department, Board Of Health |
| | Public Relations | Concord Road, Wilson Road, High Street, Burnham Road, Mary Road, Pond Street, Market Street, Salem Road, Gray Street, Gov. Doherty Road, Andover Street, Brittany Lane, Whipple Road, Harjean Road, Charm Road, Keyes Road, Bellflower Road, Castle Wood Drive, Alton Street, Handle Road, Allison Road, Sandberg Road, Marlyn Road High Street, Middlesex Turnpike, Elm Tree Road, Fuller Road, Baker Street, Morgan Road, Satuckett Lane, Doe Drive, Ridge Road, Nashoa Road, Ricca Farm Road, Coach Road, Rangeway Road, Chelmsford Road, Cottage Street, Morgan Road, Colonial Drive |
| | Landing Count | Gov. Doherty Road, Bellflower Road, Acton Street, Handle Road, High Street |
| | Adulticiding | Keyes Road, Charm Road, Harjean Road, Brittany Lane, Whipple Road, Andover Road, Staples Street, Gov. Doherty Road, Gray Street, Salem Road, Market Street, Pond Street, Mary Road, Burnham Road, High Street, Wilson Street, Marlyn Road, Sandberg Road, Handle Road, Alton Street, Castlewood Drive, Bellflower Road, Concord Road, Bennett Library, River Street, Rosewood Avenue, Donna Road, Forest Park Avenue, Chelmsford Road, Rangeway Road, Nashua Road, Ridge Road, Doe Circle, Satuckett Lane, Morgan Road, Baker Street, Fuller Street, Cottage Street, Middlesex Turnpike |
| | Set Trap | Saville Street |
| 07-13-05 | Pick Up Trap | Saville Street |
| 07-18-05 | Administrative Contact | Police Department, Board Of Health |
| | Public Relations | Cheryl Lane, Andover Road, Salem Road, Charme Road, Patten Road, Gray Street, Tercentennial Drive, Champa Road, Rosa Circle, Pondover Road, Bennett Circle, Islington Street, Albert Street, Olney Street, Pheasant Road, Pines Road, Topliff Street, Kenilworth Street, Glenside Avenue, Grove Street, Hamilton Avenue, Champa Road, Baldwin Road, Rangeway Road, Coach Road, |

TOWN OF BILLERICA

| DATE | WORK DONE | LOCATION |
|---|---|---|
| 07-18-05 | Public Relations | Ash Tree Lane, Ricca Farm Road, Walton Street, Larchwood Street, Nashua Road, Doe Drive, Elm Tree Road, Tremont Street, Sunrise Avenue, Whittier Road, Oxford Road, Corthell Road, Alice Avenue, Pinewood Avenue, Oakwood Avenue |
| | Landing Count | Kenilworth Street, Champa Road, Pheasant Road, Albert Street, Rangeway Road, Coach Road, Ricca Farm Road, Tremont Street, Whittier Road |
| | Adulticiding | Pines Road, Topliff Street, Olney Street, Albert Street, Andover Road, Baldwin Road, Rosa Circle, Pondover Road, Charme Road, Salem Road, Patten Road, Gray Street, Champa Road, Tercentennial Drive, Cheryl Lane, Hamilton Avenue, Grove Street, Sheridan Street, Glenvale Avenue, Glenside Avenue, Islington Street, Kenilworth Street, Pheasant Road, Bennett Circle, Rangeway Road, Alice Avenue, Corthell Road, Oxford Road, Pinewood Avenue, Coach Road, Ash Tree Lane, Ricca Farm Road, Walton Street, Larchwood Street, Nashua Road, Doe Drive, Elm Tree Road, Tremont Street, Sunrise Avenue, Whittier Road |
| | Set Trap | Lampson Lane |
| 07-19-05 | Pick Up Trap | Lampson Lane |
| | Set Trap | Donna Road, Saville Street |
| 07-20-05 | Administrative Contact | Police Department |
| | Public Relations | Concord Road (Bennett Library) |
| | Adulticiding | Bennett Library |
| | Pick Up Trap | Saville Street |
| | Set Trap | Saville Street |
| 07-21-05 | Administrative Contact | Police Department |
| | Public Relations | Forest Park Avenue, Silversmith Way, Donna Road, Treble Cove Road, Ricca Farm Road, Moran Road, Nashua Road, Doe Drive, Ossamequin Road, Springs Road, New Street, Longfellow Lane, Wheeler Road, Silversmith Way, Bertha Circle, Garden Brook Road, Devonshire Drive, Endleigh Avenue, Mchugh Avenue, Bicknell Road, Sachem Street, Hamilton Avenue, Harnden Road, Shawsheen Road, Naushon Road, Shalloo Road, Wild Brook Drive, Jef Road, Wyman Road, High Street, Whitegate Road, Pollard Street, Chadwick Street, Simmons Lane, Etta Road, Colonial Drive, Poe Road, Tower Farm Road, Marriott Place, Cheryl Lane, Tercentennial Drive, Castlewood Drive, Charme Road, Jamieson Way, Lampson Lane |
| | Landing Count | Forest Park Avenue, Nashua Road, Doe Drive, Springs Road, Longfellow Lane, Shawsheen Road, Jef Road, Bicknell Road, Sachem Street, |
| | Adulticiding | Forest Park Avenue, Silversmith Way, Donna Road, Treble Cove Road, Ricca Farm Road, Moran Road, Nashua Road, Doe Drive, Ossamequin Road, Springs Road, New Street, Longfellow Lane, Wheeler Road, Donna Road, Shawsheen Road, Devonshire Drive, Garden Brook Road, Grand View Road, Harnden Road, Hamilton Avenue, Sachem Street, Bicknell Road, Beard Road, Clarence Street, Mchugh Avenue, Endleigh Avenue, Jef Road, Wildbrook Road, Albion Road, Shalloo Road, Naushon Road, Wyman Road, Bertha Circle, High Street, Whitegate Road, Pollard Street, Chadwick Street, Simmons Lane, Etta Road, Colonial Drive, Poe Road, Handel Road, Towner Farm Road, Cheryl Lane, Tercentennial Drive, Castlewood Drive, Jamieson Way, Lampson Lane |
| | Larval Survey | Moran Road |
| | Pick Up Trap | Donna Road |
| | Set Trap | Nashua Road |
| 07-22-05 | Pick Up Trap | Simmons Lane |
| 07-25-05 | Set Trap | Saville Street, Arcadia Lane |
| 07-26-05 | Pick Up Trap | Arcadia Lane |
| 07-27-05 | Administrative Contact | Police Department, Board Of Health |

TOWN OF BILLERICA

| DATE | WORK DONE | LOCATION |
|---|---|---|
| 07-27-05 | Public Relations | Heritage Road, Marriot Place, Tower Farm Road, Putney Circle, Norman Road, Garden Brook Road, Devonshire Drive, Shawsheen Road, Partridge Road, Fredrickson Road, Whitefield Avenue, Broad Street, Pheasant Road, Greenleaf Street, Fardon Street, Hattie Lane, Osceola Lane, High Street, Silversmith Way, Franklin Street, Alpine Street, Donna Drive, Forest Park Avenue, Pollard Street, Whitegate Road, Water Street |
| | Landing Count | Greenleaf Street |
| | Adulticiding | Broad Street, Greenleaf Street, Fardon Street, Hattie Lane, Whitegate Road, High Street, Wallace Street, Silversmith Way, Osceola Lane |
| | Pick Up Trap | Arcadia Lane, Saville Street |
| 07-28-05 | Administrative Contact | Police Department |
| | Public Relations | Silver Smith Way, Franklin Street, Alpine Street, Forest Park Avenue, Donna Road, Rangeway Road, Pollard Street, Marriot Place, Tercentennial Drive, Norman Road, Putney, Circle, Garden Brook Road, Marshbrook Road, Devonshire Drive, Shawsheen Road, Partridge Road, Grove Street, Mchugh Avenue, Pheasant Road, Fredrickson Road, Forest Park |
| | Landing Count | Alpine Street, Rangeway Road, Marriot Place, Shawsheen Road |
| 07-28-05 | Adulticiding | Silversmith Way, Forest Park Avenue, Donna Road, Franklin Street, Fredrickson Road, Pheasant Road, Mchugh Avenue, Whitefield Avenue, Hamilton Road, Grove Street, Partridge Road, Shawsheen Road, Devonshire Drive, Marshbrook Road, Garden Brook Road, Putney Circle, Norman Road, Tercentennial Drive, Marriot Place, Pollard Street, Rangeway Road, Alpine Street |
| 08-01-05 | Set Trap | Pond Street |
| 08-02-05 | Administration Contact | Police Department |
| | Public Relations | Donald Road, Norman Road, Sheridan Street, C Street, Doherty Avenue, Arcadia Road, Blossom Lane, Simmons Lane, Freedom Way, Rio Vista Street, Nashua Road, Outlook Road, Ridge Road, New Street, Freedom Way |
| | Adulticiding | Donald Road, Norman Road, Sheridan Street, C Street, Doherty Avenue, Arcadia Road, Blossom Lane, Simmons Lane, Freedom Way, Rio Vista Street, Nashua Road, Outlook Road, Ridge Road, New Street |
| | Set Trap | Saville Street |
| | Pick Up Trap | Pond Street |
| 08-03-05 | Pick Up Trap | Saville Street |
| 08-04-05 | Administrative Contact | Police Department, Board Of Health |
| | Public Relations | Putney Circle, Vincent Street, Riverside Drive |
| | Adulticiding | Putney Circle, Vincent Street, Riverside Drive |
| 08-08-05 | Administrative Contact | Police Department, Board Of Health |
| | Public Contact | Bridle Road, Nashua Road, Fawn Lane, Edgar Road, Lupine Lane, Arey Street, Arcadia Road, Greenville Street, Grove Street, Woodbury Road, Alpine Street, Forest Park Avenue, Donna Road |
| | Adulticiding | Donna Road, Forest Park Avenue, Alpine Street, Grove Street, Woodbury Road, Mclennan Way, Greenville Street, B Street, Arcadia Road, Crimson Road, Arey Street, Edgar Road, Fawn Lane, Nashua Road, Bridle Road |
| | Larval Survey | Nashua Road, Arcadia Road |
| 08-09-05 | Set Trap | Saville Street, Pond Street |
| 08-10-05 | Pick Up Trap | Saville Street, Pond Street |
| 08-11-05 | Administrative Contact | Police Department, Board Of Health |
| | Public Relations | East Gate Road, Margret Lane, Blossom Lane, Cook Street, Gov. Endicott Road, Ossamequin Road, Alpine Street, Gov. Hutchinson Road |
| | Adulticiding | Twin Pine Avenue, Alpine Street, Endicott Road, Blossom Lane, Margret Lane, East Gate Road, Cook Street, Ossamequin Road, Simmons Lane |
| 08-16-085 | Set Trap | Saville Street, Pond Street |

TOWN OF BILLERICA

| DATE | WORK DONE | LOCATION |
|---|---|---|
| 08-17-05 | Administrative Contact | Police Department, Board Of Health |
| | Public Relations | Donna Road, Forest Park Avenue, Edison Lane, Simmons Lane, Doe Drive, Nashua Road, Pelham Street |
| | Adulticiding | Simmons Lane, Forest Park Avenue, Donna Road, Doe Drive, Nashua Road, Edison Lane, Jordan Road |
| | Larval Survey | Jordan Road, Carter Avenue, Outlook Road, Pequot Street, Pelham Street, Colby Street, Treble Cove Road |
| | Larviciding | Edison Lane, Nashua Road, Gilman Road, Moran Road, Pelham Street |
| | Pick Up Trap | Saville Street |
| 08-23-05 | Administrative Contact | Police Department, Board Of Health |
| | Public Relations | Boston Road, Burnham Road, Gov. Hutchinson Road, Andover Road, Anthony Lane, Fourth Avenue, New Street, Walton Street, Queensland Road |
| | Adulticiding | Boston Road, New Street, Anthony Lane, Fourth Avenue, Islington Street, Jefferson Street, Gov. Hutchinson Road, Burnham Road, Walton Street, Queensland Road, Arey Street, Marshall Street |
| | Set Trap | Saville Street, Pond Street |
| 08-24-05 | Pick Up Trap | Saville Street, Pond Street |
| 08-25-05 | Administrative Contact | Police Department |
| | Public Relations | White Gate Road, Wheeler Road, Glad Valley Drive |
| | Adulticiding | White Gate Road, Wheeler Road |
| 08-29-05 | Administrative Contact | Police Department, Board Of Health |
| | Public Relations | Bellflower Road, Brandon Street, Shawnee Circle |
| | Adulticiding | Bellflower Road, Brandon Street |
| | Larval Survey | Bellflower Road, Baldwin Road, Comanche Circle, Shawnee Circle, Chatham Road, Buckingham Drive, Vincent Street, Islington Street, Jefferson Road, Fourth Avenue, Kingston Street, Fourth Avenue, Alexander Road, Cook Street |
| | Larviciding | Alexander Road |
| 08-30-05 | Set Trap | Saville Street |
| 08-31-05 | Pick Up Trap | Saville Street, Pond Street |
| | Set Trap | Margaret Lane, Francesca Way, Green Acre Drive |
| 09-01-05 | Administrative Contact | Police Department |
| | Public Relations | Broadway Street, Schaffer Street, Simmons Lane, Francesca Way |
| | Adulticiding | Broadway Street, Schaffer Street, Simmons Lane, Francesca Way |
| | Pick Up Trap | Margaret Lane, Francesca Way, Green Acre Drive |
| 09-06-05 | Administrative Contact | Police Department, Board Of Health |
| | Public Relations | Kingston Street, Memory Lane |
| | Adulticiding | Margaret Lane, Pond Street, Memory Lane |
| 09-06-05 | Set Trap | Saville Street, Pond Street |
| 09-07-05 | Pick Up Trap | Saville Street, Pond Street |
| 09-13-05 | Set Trap | Margaret Lane, Pond Street, Saville Street |
| 09-14-05 | Administrative Contact | Police Department |
| | Public Relations | Ossamequin Road, Simmons Lane |
| | Adulticiding | Ossamequin Road, Simmons Lane |
| | Pick Up Trap | Margaret Lane, Pond Street, Saville Street |
| 09-15-05 | Administrative Contact | Police Department, Board Of Health |
| | Public Relations | New Street |
| | Adulticiding | New Street |
| 09-19-05 | Set Trap | Margaret Lane |
| 09-20-05 | Pick Up Trap | Margaret Lane |
| | Set Trap | Margaret Lane, Pond Street, Saville Street |
| 09-21-05 | Administrative Contact | Police Department, Board Of Health |
| | Public Relations | Jordan Road |
| | Adulticiding | Jordan Road |
| | Set Trap | Margaret Road |
| | Pick Up Trap | Saville Street, Pond Street |
| 09-20-05 | Pick Up Trap | Margaret Lane |
| | Set Trap | Margaret Lane |
| 09-23-05 | Pick Up Trap | Margaret Lane |
| 09-26-05 | Set Trap | Margaret Lane, Pond Street |

TOWN OF BILLERICA

| DATE | WORK DONE | LOCATION |
|---|---|---|
| 09-27-05 | Pick Up Trap | Margaret Lane, Pond Street, Saville Street |
| | Set Trap | Pond Street |
| 09-28-05 | Pick Up Trap | Pond Street |
| 09-29-05 | Larval Survey | Treble Cove Road, Jenkins Drive, Meadow Glen Road, Treble Terrace |
| | Larviciding | Elsie Avenue, Treble Cove Road, Old Treble Cove Road, Jenkins Drive, Baniulis Road |
| 09-30-05 | Pick Up Trap | Pond Street |
| 10-11-05 | Administrative Contact | Town Clerk |
| | Stream Survey | Jef Road, Clermore Road, Putney Circle |
| 10-18-05 | Stream Cleaning 20' | Allen Road |
| | Stream Cleaning 20' | Arakelian Drive |
| | Stream Cleaning 20' | Cheryl Lane |
| | Stream Cleaning 20' | Aldie Lane |
| | Stream Cleaning 20' | Ichabod Lane |
| | Stream Cleaning 20' | Shane Lane |
| | Stream Cleaning 20' | Putney Circle |
| | Stream Cleaning 25' | Putney Circle |
| | Stream Cleaning 20' | Putney Circle |
| | Stream Survey | Shane Lane |
| | Culvert Cleaning (25) | Allen Road, Arakelian Drive, Miller Farm Lane, Cheryl Lane, Aldie Lane, Allen Road, Ichabod Lane, Shane Lane, Jobe Lane, Baldwin Road, Putney Circle, Eldora Road, Radcliffe Road, Buckingham Drive, Gray Street, Harvard Road, Andover Road |
| 11-01-05 | Brush Cutting 400' | Clermore Road |
| 11-02-05 | Brush Cutting 300' | Clermore Road |
| 11-03-05 | Brush Cutting 470' | Clermore Road |
| 11-07-05 | Brush Cutting 360' | Clermore Road |
| 11-08-05 | Stream Cleaning 660' | Clermore Road |
| 11-09-05 | Brush Cutting 150' | Putney Circle |
| | Stream Cleaning 450' | Putney Circle |
| 11-10-05 | Brush Cutting 150' | Putney Circle |
| | Stream Cleaning 500' | Putney Circle |
| 11-21-05 | Brush Cutting 475' | Putney Circle |
| | Stream Cleaning 475' | Putney Circle |

# 2005 SUMMARY

The Central Massachusetts Mosquito Control Project (the Project) currently provides its services to 36 cities and towns throughout Middlesex and Worcester Counties. The Project's headquarters is located at 111 Otis Street, Northboro, MA. Tours of the headquarters or visits to field work sites may be arranged by calling the office in advance. Please call (508) 393-3055 during business hours for more information. The Project practices Integrated Mosquito Management (IMM), blending state of the art methods and techniques with expertise, experience, and scientific research to provide our member communities with environmentally sound and cost effective mosquito control.

During 2005 the Project received seven thousand and eighty five (7,085) requests for service from town residents and officials. A total of over six thousand (6,000) pounds of Bti (*Bacillus thuringiensis israelensis*) was applied by helicopter in 2 towns, Chelmsford & Billerica, and seven thousand, two hundred and ninety nine (7,299) pounds by hand throughout our service area were applied to area wetlands to reduce the emergence of adult mosquitoes. This represents over two thousand and sixty (2,060) acres of wetland that was treated with this mosquito-specific bacterium, significantly reducing adult mosquito populations in these areas. Thirty two thousand, for hundred and forty four (32,444) catch basins were treated with larvicidal product to control the mosquitoes that seek out these cool dark wet areas to breed, including the *Culex* mosquito, a major target for West Nile Virus transmission. Seven thousand, seven hundred and thirty seven (7,737) culverts were cleaned in an attempt to eliminate unnecessary standing water and reduce mosquito breeding. This work was done in conjunction with cleaning, clearing, and digging of one hundred and sixty eight thousand, three hundred and fifty two (168,352) feet of streams, brooks and ditches. This represents almost thirty two (32) miles of waterways which were cleaned and improved by Project personnel in 2005.

The Mosquito Awareness Program which we offer to elementary schools and other civic organizations in our district has become very popular. Project staff meets with students, teachers or concerned residents to discuss mosquito biology, mosquito habitat, and control procedures. Much of the presentation is directed towards what children and their families can do to prevent mosquitoes from breeding around their homes. Slides, videos, coloring books and other handouts make this an interesting program. This program is tailored to meet the needs of the specific audience. One thousand, six hundred and nineteen (1,619) students attended these programs.

As part of our effort to reduce the need for pesticides we continue to expand our wetlands restoration program. By cleaning clogged and overgrown waterways, mosquito breeding can be reduced and drainage areas are restored to historic conditions.

Bti mosquito larvicide is used to treat areas where mosquito larvae are found. We routinely check known breeding sites kept in out database, but also encourage the public to notify us of any areas they suspect could breed mosquitoes. Our field crews will investigate all such requests and treat the area only if surveillance gathered at the time shows an imminent threat of mosquito emergence.

Our goal is to manage all mosquito problems with education, wetlands restoration or larviciding, but we recognize that there are times when adult mosquito spraying is the only viable solution. In such cases specific areas are treated with either hand-held or pickup truck mounted sprayers if surveillance gathered at the time exceeds a pre-determined threshold to warrant an application. This program is offered on a **request-only** basis, and the exclusion process allows residents and/or town officials to exclude areas under their control from this or any part of our program.

The Project's surveillance program monitors adult mosquito and larval population density, and is the backbone for prescribing various control techniques. Specialized mosquito traps are deployed throughout the Project's service area to sample for mosquitoes that may be transmitting mosquito-borne diseases. In conjunction with the Mass. Dept. of Public Health we sample in areas suspected of harboring WNV and other viruses. One thousand, one hundred and fifty three (1,153) pools (collections) of mosquitoes totaling eleven thousand, nine hundred and twenty eight (11,928) specimens were tested for mosquito-borne viruses this year. Two (2) pools of *Cs. melanura* in Westborough were confirmed to be infected with the EEE virus. 6 pools of West Nile Virus were confirmed, 4 in Westborough (3 *Culex* and 1 *Cs. melanura*) and one each in Holliston and Wilmington, both *Culex* species. MDPH identified EEE in Holliston but subsequent surveillance did not confirm any additional virus isolates. No human or horse cases were identified with WNV or EEE in 2005 in our service area.

Educational pamphlets are available to anyone interested in learning about mosquito control and the services provided by the Project, and these items are routinely stocked in member Town/City Halls and libraries. Display boards with information on our program are rotated through area Town Halls throughout the year. We also have a website, **www.cmmcp.org** that has extensive information on mosquito biology, our control procedures, etc. This website has become a model for other Mosquito Projects and has been widely used throughout our service area and beyond.

We would like to thank you for your support during 2005 and we look forward to helping you and your community with its mosquito problems in 2006 and beyond.