

NEW

GUIDE TO STORM DRAIN MARKING

**TOWN OF WELLESLEY, DPW
ENGINEERING DIVISION**



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Introduction

The purpose of this guide is to provide a how-to instruction for the Town residents and volunteers interested in assisting the Town of Wellesley Department of Public Works (DPW) with the Storm Drain Marking Program, which has been encouraged by the Environmental Protection Agency (EPA) to reduce debris and pollutants from entering waterways. The EPA has assisted with the implementation of Storm Drain Marking Programs throughout the country and this guide is a compilation of those programs and how-to guides.

This guide does not represent a complete or exhaustive approach of marking programs nor is the Town endorsing one program over another. Our hope is to provide schools, civic groups, such as the boys and girls scouts, tools to help implement a successful citizen-education program to reduce dumping and pollutants from entering our local waterways.

What is Nonpoint Source?

Nonpoint Source (NPS) pollution is triggered when rainfall and snowmelt carries debris and pollutants over land to waterways such as streams, rivers, ponds and wetland areas and eventually to the Charles River. We all contribute to NPS many times without meaning to. NPS pollution may consist of fertilizers, grease, oil, gasoline, antifreeze, road salt, paint solvents, animal waste and even grass clippings and fallen leaves. NPS may also consist of atmospheric deposition, sediment and erosion control and seepage of sewerage from septic systems.

Many states have reported that the leading cause of water quality issues are a result of NPS. NPS may effect drinking water supplies, recreation, fisheries and wildlife. For more information, please refer to the follow website form the EPA: <https://www.epa.gov/nps/basic-information-about-nonpoint-source-nps-pollution>

What is a Storm Drain?

The most common route of NPS is through a storm drain system. Storm drainage systems are networks of catch basins, drain manholes, drain pipes, and outlets that are built under roadways, parking lots, fields or any place were stormwater collects and could cause flooding. Other terms that are used in the storm drainage system are curbs, gutters, channels, ditches, pipes or culverts.

Here are some examples of the basic components of a drainage system.

Catch Basin



Drain Manholes



Why be Concerned with What Enters a Storm Drain System?

A drainage system is designed to receive stormwater runoff from pavement, sidewalks, lawn areas into the drainage system via catch basins which discharge to nearby waterbodies. A drainage system is separate from a sanitary sewer system that collects sewerage and discharges to a treatment plant. NPS has the potential to harm the Town's streams, rivers, ponds and wetland areas because the drainage system typically does not pretreat stormwater prior to discharging to our waterways.

Why Mark Storm Drains?

Marking storm drains is a great way to make people aware that dumping into a catch basin is not allowed because the stormwater drains from the catch basin to the Charles River. The storm drain marking is an educational tool to remind people of the connection between the storm drain and local waterways.

Labeling Storm Drains

One of the first visible signs of the program will be the placement of markings on or behind a catch basin. There are three marking options used in the industry; stenciling, glue-on or self-adhesive markers and permanent pre-cast markings. The Town uses a 4" diameter curb marker that is glued-on at behind catch basins. These markers are easily visible from the roadway or sidewalk.

The storm marking program consists of gluing storm drain markers to curbing behind a catch basin. Other drain markers include cast iron metal plaques. Following are two examples of drain markers that are used in Wellesley.

Drain marker behind catch basin



Fig.1

Cast iron plaque



Fig.2

Provided in Appendix A is a copy of the instructions for installing curb markers with an adhesive, which is the type of storm drain marker that the Town of Wellesley uses. The drain marking brand we use is found at the following website. www.dasmanufacturing.com.

The cost for a 4" drain marker is \$4.55 each per 50-249 and the glue costs \$8.75. These prices are as of the date of this guide and subject to change by the manufacturer. Additional vendors and sources of information pertaining to storm drain marking may also be available through other sources.

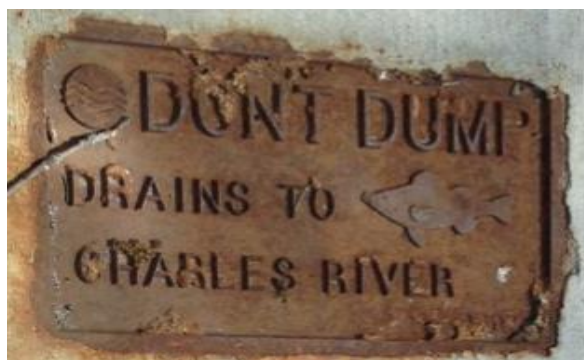
Types of Messages

The purpose of drain markers is to prevent deliberate dumping into the storm drain. The Town's focus is "drains to Charles River" because our main tributary is the Charles River. Many of our brooks such as Fuller Brook drain to the Charles River. Lake Waban and Morse's Pond also drain to the Charles River.

Decal



Cast Iron Marker



The placement of the marker is positioned behind a catch basin, as shown on the figure 1 &2. The markers are placed on granite or asphalt curbing directly behind the catch basin, centered on the catch basin. It is our hope that the message will deter littering, dumping chemicals, oils, solvents, paints and other practices that contribute to NPS.

Municipalities Role

The role of the Town of Wellesley DPW is to coordinate the volunteer marking projects. Coordination is as follows:

- Provide marking kits containing all the materials and tools needed to carry out the marking project;
- Provide GIS mapping of the locations identifying catch basins to be marked;
- Train the volunteers of the safety requirements which may include the following equipment: traffic cones, safety vests, masks/goggles and gloves;
- Provide incentives and rewards for volunteer work such as T-shirts, certificates, etc.

Planning Your Marking Project

Before Marking:

- Organizing Volunteers: Volunteers should sign a liability waiver. A sample copy is provided in Appendix B. Make sure the Police Department is informed prior to start of the work.
- Map the neighborhood: Use a GIS map to identify areas where storm drain marking is scheduled to be performed, including those already marked.
- Keep weather in mind: The drain marking project is better performed during dry and warm weather, above 50°. Cold, rainy days will not work due to the glue not properly adhering.
- Notify the Neighborhood: The neighborhood should be notified a week before marking the drains. Flyers may be the best way to notify the neighborhood, explaining the storm drain program and request that people avoid parking cars within 20 feet of a storm drain that is planned to be marked.

Day of the Event:

- Check the weather: If inclement weather exists, consider having an alternative rain date.
- Collect all liability waivers.
- Review all safety procedures: See Appendix C.
- Divide volunteers into working groups: One or two adults should be assigned to supervise each group. A group should consist of four to six people.
- Distribute supplies to each work group.
- Assign work sections to each group: Provide a GIS map for each group.
- Mark: Stenciling and curbing instructions in Appendix A.
- Check for missed drains: Have volunteers from each group check that all the storm drains in the group's area have been marked.
- Clean up: Clean up the work site after completing the markings.
- Celebrate: Thank the volunteers for a job well done. Hand out recognition certificates.

Remember

Mailboxes are only to be used for mail bearing postage. It is illegal to put anything in the mailbox that has not been delivered by the U.S. Postal Service. Do not place any of your educational materials in a mailbox!

On-Line Resources

Vendors

- <https://www.berntsen.com/Parks-Recreation/Storm-Drain-Markers>
- <http://www.dasmanufacturing.com/>
- <https://www.almetek.com/storm-drain-markers/>

CASTINGS

- <https://www.ejco.com/am/en/about-us/locations>

USEPA

<https://www.epa.gov/nps>

<https://cfpub.epa.gov/npstbx/index.html>

<https://www.epa.gov/nps/resources-students-and-educators-about-nonpoint-source-nps-pollution>

What You Can Do to Reduce Nonpoint Source Pollution

NOTE: Feel free to use any of the following USEPA information for articles in your municipal or township newsletter!

Household Chemicals

- Be aware that many chemicals commonly used around the home are toxic. Select less toxic alternatives. Use non-toxic substitutes wherever possible.
- Buy chemicals only in the amount you expect to use, and apply them only as directed. More is not better.
- Take unwanted household chemicals to hazardous waste collection centers; do not pour them down the drain. Pouring chemicals down the drain may disrupt your septic system or else contaminate treatment plant sludge.
- Never pour unwanted chemicals on the ground. Soil cannot purify most chemicals, and they may eventually contaminate runoff.
- Use low-phosphate or phosphate-free detergents.
- Use water-based products whenever possible.
- Leftover household pesticide? Do not indiscriminately spray pesticides, either indoors or outdoors, where a pest problem has not been identified. Dispose of excess pesticides at hazardous waste collection centers.
- Spread mulch on bare ground to help prevent erosion and runoff.
- Test your soil before applying fertilizers. Overfertilization is a common problem, and the excess can leach into ground water or contaminate rivers or lakes. Also, avoid using fertilizers near surface waters. Use slow-release fertilizers on areas where the potential for water contamination is high, such as sandy soils, steep slopes, compacted soils, and verges of water bodies. Select the proper season to apply fertilizers: Incorrect timing may encourage weeds or stress grasses. Do not apply pesticides or fertilizers before or during rain due to the strong likelihood of runoff.
- Calibrate your applicator before applying pesticides or fertilizers. As equipment ages, annual adjustments may be needed.
- Keep storm gutters and drains clean of leaves and yard trimmings. (Decomposing vegetative matter leaches nutrients and can clog storm systems and result in flooding.)

Landscaping and gardening

- When landscaping your yard, select plants that have low requirements for water, fertilizers, and pesticides.
- Cultivate plants that discourage pests. Minimize grassed areas which require high maintenance.
- Preserve existing trees, and plant trees and shrubs to help prevent erosion and promote infiltration of water into the soil.
- Use landscaping techniques such as grass swales (low areas in the lawn) or porous walkways to increase infiltration and decrease runoff.
- Leave lawn clippings on your lawn so that nutrients in the clippings are recycled and less yard waste goes to landfills.
- If you elect to use a professional lawn care service, select a company that employs trained technicians and follows practices designed to minimize the use of fertilizers and pesticides.
- Compost your yard trimmings. Compost is a valuable soil conditioner which gradually releases nutrients to your lawn and garden. (Using compost will also decrease the amount of fertilizer you need to apply.) In addition, compost retains moisture in the soil and thus helps you conserve water.

Septic Systems

- Improperly maintained septic systems can contaminate ground water and surface water with nutrients and pathogens. By following the recommendations below, you can help ensure that your system continues to function properly.
- Inspect your septic system annually.
- Pump out your septic system regularly. (Pumping out every three to five years is recommended for a three-bedroom house with a 1,000-gallon tank; smaller tanks should be pumped more often.)
- Do not use septic system additives. There is no scientific evidence that biological and chemical additives aid or accelerate decomposition in septic tanks; some additives may in fact be detrimental to the septic system or contaminate ground water.
- Do not divert storm drains or basement pumps into septic systems.
- Avoid or reduce the use of your garbage disposal. (Garbage disposals contribute unnecessary solids to your septic system and can also increase the frequency your tank needs to be pumped.)
- Don't use toilets as trash cans! Excess solids may clog your drain field and necessitate more frequent pumping.

Source: EPA Journal article, November/December 1991

Water Conservation

Homeowners can significantly reduce the volume of wastewater discharged to home septic systems and sewage treatment plants by conserving water. If you have a septic system, by decreasing your water usage, you can help prevent your system from overloading and contaminating ground water and surface water. (Seventy-five percent of drain field failures are due to hydraulic overloading.)

- Use low-flow faucets, shower heads, reduced-flow toilet flushing equipment, and water saving appliances such as dish and clothes washers. (See table on water savings possible with conservation devices.)
- Repair leaking faucets, toilets, and pumps.
- Use dishwashers and clothes washers only when fully loaded.
- Take short showers instead of baths and avoid letting faucets run unnecessarily.
- Wash your car only when necessary; use a bucket to save water. Alternatively, go to a commercial carwash that uses water efficiently and disposes of runoff properly.
- Do not over-water your lawn or garden. Overwatering may increase leaching of fertilizers to ground water.
- When your lawn or garden needs watering, use slow watering techniques such as trickle irrigation or soaker hoses. (Such devices reduce runoff and are 20percent more effective than sprinklers.)

Other Areas Where You Can Make a Difference • Clean up after your pets. Pet waste contains nutrients and pathogens that can contaminate surface water.

- Drive only when necessary. Driving less reduces the amount of pollution your automobile generates. Automobiles emit tremendous amounts of airborne pollutants, which increase acid rain; they also deposit toxic metals and petroleum byproducts into the environment. Regular tune-ups and inspections can help keep automotive waste and byproducts from contaminating runoff. Clean up any spilled automobile fluids.
- Recycle used oil and antifreeze by taking them to service stations and other recycling centers. Never put used oil or other chemicals down stormdrains or in drainage ditches. (One quart of oil can contaminate up to two million gallons of drinking water!)



Community Action

- Participate in clean-up activities in your neighborhood.
- Write or call your elected representatives to inform them about your concerns and encourage legislation to protect water resources.
- Get involved in local planning and zoning decisions and encourage your local officials to develop erosion and sediment control ordinances.
- Promote environmental education. Help educate people in your community about ways in which they can help protect water quality. Get your community groups involved.



Source: Village of Lincolnshire

Source: EPA Journal article, November/December 1991