



# Stormwater Management

## Pollution Prevention for Developers

### What is Stormwater Pollution?

Stormwater is rain or snowmelt that flows over the ground. As stormwater runs over impervious surfaces like driveways, roofs, sidewalks and streets; it can pick up pollutants that have collected on these surfaces - such as motor oil, fertilizers, pesticides, and trash - and allow them to flow into stormwater catch basins. Stormwater flows into the storm drain system and is discharged without treatment into local waterways.

Poor training and material management practices at locations being developed can cause pollutants such as trash, debris, sediment, oil, solvents, and waste to enter our stormwater system. These pollutants can build up in stormwater lines and cause blockages, negatively impact the operation of stormwater retention areas and drywells, or degrade water quality of our streams and rivers. Pathways of this pollution include the direct pouring or dumping by ill-trained employees, poor cleaning habits, improper storage of chemicals and waste, and poor maintenance of waste containers.

### What you can do as a Developer...

Past development practices constructed more roads, driveways and roofs so that water that used to seep into the ground now runs across these impervious surfaces, picking up pollutants. The stormwater then flows into nearby waterways, or the stormwater drainage system; the polluted runoff can cause erosion and flooding, it degrades plant and aquatic life, it can lead to illness and can contaminate drinking water sources.

Here are some innovative practices to lead the way to more effectively and efficiently develop land and reduce stormwater pollution:

- Choose your site wisely - By selecting a site that is already developed you can lower your costs because the infrastructure, such as roads, water, sewer and other utilities are available.
- Avoid putting the development in an area that will have an effect on natural resources. By clustering buildings you will reduce your costs and add open space. Leave half of the property undeveloped, this will allow stormwater to be handled through natural resources.



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- Use Low Impact Development (LID) Practices to developed land to handle stormwater more like how it was handled before the site was developed. Roads, parking lots and other non-porous areas are the largest contributors to stormwater runoff.
  - LID is an innovative stormwater management approach with a basic principle that is modeled after nature: manage stormwater at the source using uniformly distributed decentralized micro-scale controls.
  - The goal of using LID is to mimic a site's pre-development hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source. Techniques are based on the premise that stormwater management should not be seen as stormwater disposal. Instead of conveying, managing and treating stormwater in large, costly end-of-pipe facilities located at the bottom of drainage areas, LID addresses stormwater through small, cost-effective landscape features located at the lot level.
    - An EPA Study found grading, landscaping, paving and infrastructure costs were lower for LID than conventional development. LID techniques can eliminate or reduce the size of stormwater systems and provide more open space for buildable lots.
    - Porous pavement have been found to be especially effective in the winter.
    - Filtering stormwater through infiltration practices can remove pollution and can potentially reduce contaminant levels. Infiltration replenishes groundwater for future use.
    - Studies have shown narrower streets can provide ample access, parking and circulation for residents and emergency vehicles. Some studies have shown that narrower streets are associated with less traffic, slower speeds and fewer accidents.



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## Stormwater Standards for New Construction or Development

Construction projects that are large enough to require Planning Board Review are regulated by the Town's Zoning By-Laws and Subdivision Rules and Regulations. The following are the categories of such projects:

- All commercial, industrial, and manufacturing sites;
- Housing development and redevelopment projects comprised of detached single-family dwellings on five or greater lots;
- Multi-family housing development and redevelopment projects with five or more units, including condominiums, cooperatives, apartment buildings and townhouses; and
- Any housing development and redevelopment projects where stormwater discharges may potentially affect a critical area.

Anyone wishing to perform work within 125 feet of a wetland or 200 feet of a perennial stream, is required by law ([State - M.G.L c. 131 §40](#) and the [Plainville Wetland Bylaw Chapter 472](#)) to file an application called a "Notice of Intent" or "Request for Determination of Applicability" with the Conservation Commission.

## Stormwater Management Plan & Components

Public Works works directly with the Planning Board and the Conservation Commission to review of the stormwater management plans, ensure compliance with Plainville's design and construction standards, and to provide consistent direction and oversight on such projects. The two major components of the plans are the design of the drainage system and the construction erosion and sediment control plan.

- The design of the drainage system must comply with the Massachusetts Department of Environmental Protection (DEP) Stormwater Management Standards, which are included in the Massachusetts Wetlands Regulations ([310 CMR 10.05\(6\)\(k\)](#)). The Stormwater Management Standards and design guidance



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can be found in the DEP's Massachusetts Stormwater Handbook.

- A construction erosion and sediment control plan is the plan for controlling stormwater runoff during construction and must also comply with the Stormwater Management Standards. Such control consists of a combination Best Management Practices (BMPs) that protects abutting properties and the MS4. Several BMPs are identified and described in the Public Works Construction Standards, including fiber rolls (a.k.a. straw wattles), silt fences, and gravel aprons. Other BMPs include but are not limited to silt socks, hay bales, slope stabilization, covered dirt stockpiles, and other storm drain inlet protection. The requirements for this plan are described in the Stormwater Management Standards.