

Low Impact Development Strategies use careful site design and decentralized stormwater management to reduce the environmental impact of new growth. This approach improves water quality, minimizes the need for expensive pipe-and-pond stormwater systems, and creates more attractive developments.

MASSACHUSETTS LOW IMPACT DEVELOPMENT TOOLKIT

AN INTRODUCTION TO LOCAL STORMWATER BYLAWS AND LOW IMPACT DEVELOPMENT

A local stormwater bylaw is a good way for communities to promote Low Impact Development (LID) techniques. Numerous communities in the Commonwealth have recently developed stormwater bylaws that incorporate LID, and the Executive Office of Environmental Affairs has included a model stormwater/LID bylaw in the Massachusetts Smart Growth Toolkit. This primer describes the key elements of a stormwater bylaw, recognizing that any such bylaw should be tailored to local conditions.

Why a local stormwater bylaw?

Stormwater is currently regulated under the Federal Clean Water Act (National Pollution Discharge Elimination System) which applies to municipal stormwater systems and construction areas over an acre; and under the Massachusetts Wetlands Protection Act (MA Stormwater Policy), enforced by local conservation commissions in and near jurisdictional wetlands. In many communities, a patchwork of local codes (zoning, subdivision rules and regulations, board of health regulations) may provide overlapping and sometimes conflicting regulation of stormwater discharges; a municipal stormwater bylaw can replace this patchwork with a single set of standards, resulting in environmentally sensitive development throughout the community. The bylaw will also provide developers with more predictability, efficiency, and rapid review due to the consistency of site design standards in all permitting processes. These standards should be reflected in all applicable local regulations such as subdivision regulations, wetland regulations, site plan regulations, etc.

How does a stormwater bylaw work?

A stormwater bylaw establishes a *Stormwater Authority*—which may be the Planning Board, Conservation Commission, Building Inspector, or another entity—and requires that all projects over certain thresholds obtain a stormwater permit from the Stormwater Authority.

The bylaw and/or accompanying regulations should also specify permit procedures and performance standards, which must meet or exceed the standards of the Massachusetts

Stormwater Policy, in order to prevent conflicting standards near wetland areas. Performance standards should include recharge volumes, peak discharge rates, and water quality volumes, as well as special requirements that apply near environmentally sensitive areas or at stormwater ‘hotspots’ (such as gas stations.) The bylaw and regulations can also specify the engineering methodologies that should be used to model stormwater runoff.

How does a bylaw promote Low Impact Development?

Any stormwater bylaw should be structured so that it promotes the use of Low Impact Development techniques, including low impact site design, innovative stormwater techniques (such as bioretention), and nonstructural practices for stormwater management. This can be done through a system of *stormwater credits* that become part of the sites engineering calculations. By accounting for the treatment provided by low-cost, low-impact techniques, stormwater credits provide an incentive for engineers and developers to use low impact techniques to reduce their reliance on conventional stormwater structures.

Credits may be given for “environmentally sensitive development” with preserved open space, limited impervious coverage, stream buffers, and open section roadways; such a development might be assumed to meet certain water quality and recharge standards. Other credits might be associated with ‘disconnection’ of rooftops or impervious surfaces, whereby the runoff from roof drains and impervious surfaces is directed to vegetated areas where it will infiltrate; the ‘disconnected’ area is deducted from the impervious surface area used to calculate water quality treatment volumes, and the infiltration of this runoff can help to satisfy recharge requirements. The use of grass channels or vegetated stream buffers might also qualify for credits that acknowledge the water quality and recharge benefits of these techniques.

The stormwater bylaw should allow the stormwater authority to permit the use of innovative structural practices (such as bioretention) not included in the Massachusetts Stormwater Manual, provided proper documentation of effectiveness has been provided.

Implementation and Expert Review

The stormwater bylaw can assign any existing board or department as the official Stormwater Authority, depending on local conditions, existing regulations, and current permitting processes. Often, stormwater bylaws assign the Planning Board or Conservation Commission as the Stormwater Authority; planning boards already have a community-wide

authority, while conservation commissions already have some experience with stormwater permitting through the Wetlands Protection Act. In some communities, the department of public works may be the most appropriate entity due to their experience with stormwater. In any case, the review process should provide a mechanism for other boards with a demonstrated interest in drainage issues (such as the Board of Health) to review stormwater plans and provide comments to the Stormwater Authority.

Regardless of what entity is designated as the Stormwater Authority, the bylaw should outline a mechanism for expert review where necessary. This is usually done through an engineering and consultant review fee assessed to the proponent, a mechanism commonly used for wetland applications and subdivision reviews. Developers may be concerned about the cost and time involved in consultant review, but as with wetland and subdivision reviews, a thorough, well-prepared application that includes all the necessary information (including all calculations) will generally result in a rapid and favorable review. A unified stormwater review process will also be more efficient for developers than the current patchwork of regulations.

Exemptions

The stormwater bylaw should provide for exemptions, so that minor projects with limited stormwater consequences will not require a stormwater permit. Commonly, exemptions are granted for small projects (e.g., less than 5,000 square feet); agricultural activities; maintenance and landscaping; fences; and gas, water, electric, or telecommunication utilities. Single family homeowners should be exempt for most activities such as roof replacement, patio construction, outbuilding construction, home additions, driveway resurfacing, etc. The stormwater authority should also be able to grant waivers for certain projects and for certain standards where they are not pertinent.

The bylaw must include standards for redevelopment projects; the Massachusetts Stormwater Policy currently requires such projects to meet standards to the maximum extent practicable, and any local bylaw should be compatible with this requirement.

Maintenance

It is critical for a stormwater bylaw to require all applicants to submit an operations and maintenance plan. The O & M plan should specify the parties responsible for the system, a map of the system, and a schedule for maintenance tasks. Particular attention should be

given to the inspection and cleaning of pre-treatment devices, including removal of trash and sediment. The plan should also grant the Stormwater Authority all necessary easements for inspection and maintenance, if necessary. Where stormwater management structures are located on private property, the developer may need to create deed restrictions that require property owners to maintain stormwater structures in functional condition in perpetuity. Some communities also require a permanent surety bond from developers to cover any unforeseen contingencies.

How does it relate to other local codes?

A stormwater bylaw is intended to replace the current patchwork of stormwater standards that exists in most communities. In order for this to work, other local bylaws and regulations of must be reviewed and modified where necessary to ensure consistency with the new stormwater bylaw. In particular, boards should delete any clauses that require applicants to obtain a drainage permit from anyone other than the new Stormwater Authority, and they should eliminate local performance standards that differ from those of the stormwater bylaw, in order to avoid confusion. (Because Conservation Commissions are required to enforce the Massachusetts Stormwater Standards for projects subject to the Wetlands Protection Act, it is ideal if the local stormwater bylaw is stricter than the state standards.) Many zoning, wetland, and board of health codes also establish design guidelines (different from performance standards) for stormwater structures—these guidelines should be consolidated and standardized in a stormwater guidance document that can accompany the regulations.

While consistency and streamlining of regulations is necessary, the Stormwater Bylaw must recognize that boards other than the Stormwater Authority still have a fundamental interest drainage issues. A Stormwater Bylaw should always provide opportunities for other boards (such as the Board of Health) to review Stormwater Plans so that that their concerns are addressed within the unified stormwater process.

A review of local bylaws and regulations for consistency with the Stormwater bylaw may also identify opportunities for modifications that will help promote lower impact development and decentralized stormwater management. A checklist is available to help communities review local policies and modify them where necessary to promote narrower roadways, natural drainage systems, conservation of natural areas, and other fundamentals of Low Impact Development.