

# ANJEC Report, Spring 2006

## Stormwater Best Management Practices In Site Plan and Subdivision Review

*How Should Planning Boards Make Sure New State Stormwater Regulations Are Complied With During Development Reviews?*

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The new state stormwater management regulations encourage imitation of the natural water cycle when new development is planned. Under natural conditions, over 50 percent of the runoff from stormwater soaks into the ground to replenish groundwater. As development covers the land, more and more water runs off the surface contributing to increased flooding and reduced groundwater recharge. When planning a development project, an applicant should make sure that stormwater is infiltrated as much as possible and as close to the source as possible. Infiltration helps reduce runoff rates for smaller storm events; reduces runoff volumes for all storm events; increases ground water recharge; helps to sustain stream base flows; and, significantly improves water quality.

Infiltration of stormwater is a relatively recent concept. For the past quarter of a century, stormwater management in New Jersey meant constructing “detention basins” to prevent increases in downstream “rates” of runoff and resulting flooding. Stormwater management today includes management strategies for controlling runoff “volumes” and water “quality” and detention basins simply are ineffective for these purposes.

The new stormwater regulations REQUIRE applicants to incorporate **Specific “Nonstructural” Or “Low Impact Development” BMPs** (Best Management Practices) into proposed projects to the maximum practicable extent.

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| BMP 1 | Protect areas that provide water quality benefits such as wetlands, recharge areas, floodplains, woodland, stream and wetland buffers |
| BMP 2 | Maximize protection of natural drainage features and vegetation   |
| BMP 3 | Minimize impervious cover and break up or disconnect runoff   |
| BMP 4 | Minimize reduction in “time of concentration” from pre- to post-construction  |
| BMP 5 | Minimize land disturbance including clearing and grading  |
| BMP 6 | Minimize soil compaction  |
| BMP 7 | Provide low-maintenance native plant landscaping and minimize lawns   |
| BMP 8 | Provide vegetated open channel conveyance systems   |
| BMP 9 | Provide other “source controls”   |

### How to Incorporate BMPs into Development Review

**BMPs 1 and 2** put forth that the ordinance site plan/subdivision checklist should require four maps to show where the properties’ key natural resources are and how the project design will protect them. The **required maps** need to show

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<sup>1</sup> This article is based on John Thonet’s ([www.thonetassociates.com](http://www.thonetassociates.com)) presentation on the elements and process for effective stormwater management at ANJEC’s October 2005 Environmental Congress

- The location of the site’s streams, flood plains, wetlands, transition areas, and steep slopes; these natural resources provide important water quality benefits;
- Natural drainage patterns, swales, and other drainage ways, that are not streams, flood plains, or wetland areas;
- The locations of all areas with soils that are suitable for infiltration/recharge and the site’s best soils for infiltration/recharge;
- The locations of the site’s existing vegetation, worthy of preservation or vegetative enhancement such as forested areas, hay fields, or old fields.

The **required design** needs to

- Preserve the site’s natural drainage patterns to the maximum extent practicable, both topographically and vegetatively;
- Place active development activities in the least suitable areas for infiltration and plan to put infiltration/recharge facilities in the best areas;
- Keep or enhance existing vegetated areas worthy of preservation, and minimize disturbance rather than re-landscaping with traditional lawns and landscaping.

**BMPs 3 and 4 require applicants to**

- Minimize impervious cover;
- Break up or disconnect the flow of runoff from the impervious surfaces by separating roof and driveway runoffs and directing them to infiltration/recharge facilities (such as gardens) that overflow into purposely preserved natural drainage-ways;
- Break-up sections of roadways and parking areas and drain their stormwater into natural drainage-ways that lead to “structural” BMPs that will treat the runoff for water quality and if appropriate, recharge;
- Utilize porous paving materials, where appropriate, such as for sidewalks, driveways, fire access drives, and parking areas.

Using the four maps prepared for BMPs 1 and 2, **BMP’s 5 through 8** require applicants to

- Show how project design minimizes vegetated area disturbance and what will keep or enhance these areas rather than re-landscaping with traditional lawns and landscaping;
- Prepare a clearing and grading plan that only disturbs the areas proposed for active development activities;
- Prepare a design that maximizes the use of vegetated open channel conveyance systems discharging into stable vegetated areas.

**BMP 9’s** Source Controls require applicants to put together Maintenance Plans, such as

- Regular vacuum or sweeping/trash pick-up programs;
- Winter de-icing plans;
- Fertilizer/pesticide use plans; and
- Spill containment plans.

**Needed Amendments to the Municipal Site Plan and Subdivision Ordinances will require**

- Specific BMP mapping as outlined above for the Site Plan and Subdivision Checklist;
- A Low Impact Development plan for the Site Plan and Subdivision Checklist;
- Placement of conservation easements on any land areas used as nonstructural BMPs such as forests, hayfield, wetlands, floodplains, stream and wetland buffers, steep slopes, preserved woodlands, fields and/or vegetation.