

Stormwater Management

Future development offers considerable opportunities to improve upon past stormwater management practices in furtherance of efforts to protect and restore local streams and to reduce pollutant loads entering the Potomac River and Chesapeake Bay. Low impact development (LID) techniques of stormwater management can serve to reduce runoff volumes entering local streams and can more easily be incorporated within densely developed areas than more traditional detention and retention ponds. These LID practices can include, but are not limited to, bioretention or biofiltration facilities (commonly known as rain gardens), vegetated swales, porous pavement, vegetated roofs, tree box filters and the collection and reuse of stormwater runoff.

Environmentally-friendly stormwater design should be an integral design principle that will be part of the conceptual stage of site development for all future development, recognizing that stormwater management measures may be phased with development. The stormwater design should first seek to minimize the effect of impervious cover, followed by the application of stormwater reuse, retention, detention, extended filtration and, where soils and infrastructure allow, infiltration to improve downstream waters. The incorporation of stormwater management strategies in parks and other open space areas within Land Unit A may support this approach while providing recreational amenities and there may be opportunities to incorporate LID practices within other open space areas.

Coordination of stormwater management controls among multiple development sites may also be effective in achieving stormwater management goals in an efficient manner. Stormwater management and water quality controls should be optimized for all future development projects consistent with the scale of such projects.

In addition, the following guidelines should be followed for any application for which a floor area ratio (FAR) of 1.0 or more is proposed. Any development proposals in the area should be reviewed on a case-by-case basis for the appropriate optimization of stormwater management and water quality controls allowing for flexibility in specific approaches taken to achieve these guidelines.

- Stormwater quantity and quality control measures should be provided that are substantially more extensive than minimum requirements, with the goal of reducing the total runoff volume or significantly delaying its entry into the stream system. The emphasis should be on LID techniques that evapotranspire water, filter water through vegetation and/or soil, return water into the ground or reuse it.
- LID techniques of stormwater management should also be incorporated into new and redesigned streets where allowed and practicable.
- At a minimum, stormwater management measures should be provided as follows¹:

¹The guidelines in items 1, 2 and 3 have been taken from the Stormwater Design Quantity Control and Stormwater Design Quality Control credits from the LEED 2009 for New Construction and Major Renovations green building rating system.

1. For sites that have greater than 50% impervious cover in the existing condition, the total volume of runoff released from the site in the post-developed condition for the 2-year, 24-hour storm should be at least 25% less than the total volume of runoff released in the existing condition for the same storm. Furthermore, the peak runoff rate for the 2-year, 24-hour storm in the post-developed condition should be at least 25% less than the existing condition peak runoff rate for the same storm.
2. For sites that have 50% or less impervious cover in the existing condition, the total volume of runoff released as well as the peak release rate for the 1- and 2-year, 24-hour storm in the post-developed condition should be equal to or less than the total runoff volume and peak release rate in the existing condition for the same storm. Alternately, a stormwater management plan that protects receiving stream channels from excessive erosion, including stream channel protection and quantity control strategies, may be pursued.
3. Stormwater runoff associated with the development should be controlled such that the first one (1) inch of rainfall is reused, infiltrated or treated in a manner through which 80% of the average annual post-development total suspended solids are removed, or through which at least an equivalent level of water quality control is provided.
4. As an alternative to items 1, 2 and 3 above, if the U.S. Green Building Council has supplanted its LEED[®] 2009 rating system, stormwater management measures may be provided that are sufficient to attain the stormwater management-related credit(s) of the most current version of LEED-NC or LEED-CS rating system (or equivalent of this/these credit(s)).

If these goals are demonstrated to not be achievable, all available measures should be implemented to the extent possible in support of these goals.

As an alternative to 1 through 4 above, stormwater management measures and/or downstream improvements may be pursued to optimize site-specific stormwater management and stream protection/restoration needs, consistent with the adopted watershed management plan(s) that is/are applicable to the site. Such efforts should be designed to protect downstream receiving waters by reducing stormwater runoff volumes and peak flows from existing and proposed impervious surfaces to the maximum extent practicable, consistent with watershed plan goals.