

WATER

26 Attachment 1

City of Saint Marys

Appendix A

Low-Impact Development Practices: Alternative Approaches for Managing Stormwater Runoff

Natural hydrologic conditions may be altered by development practices, which may create impervious surfaces, destroy drainage swales, construct storm sewers, and change local topography. A traditional approach to drainage has been to remove runoff from sites as quickly as possible and capture it in downstream detention basins. This approach leads to the degradation of water quality as well as additional expenditures for detaining and managing concentrated runoff. The recommended approach is to promote practices that will minimize post-development runoff rates and volumes and minimize needs for artificial conveyance and storage facilities. To simulate predevelopment hydrologic conditions, increased infiltration often is helpful to offset the effects of increasing the area of impervious surfaces. The ability to increase infiltration depends upon the soil types and land use. Preserving natural hydrologic conditions requires careful site design that includes preservation of natural drainage features, minimization of impervious surfaces, reduction of hydraulic connectivity of impervious surfaces, and protection of natural depression storage areas. A well-designed site will contain a mix of all these features. The following describes various techniques to achieve this:

- A. **Preserve Drainage Features.** Protect natural drainage features, particularly vegetated drainage swales and channels. Locate streets and adjacent storm sewers away from valleys and swales.
- B. **Protect Natural Depression Storage Areas.** Depression storage areas have no surface outlet, or they drain very slowly. Depressions shall be protected and the storage capacity shall be incorporated into required detention facilities.
- C. **Avoid Creating Impervious Surfaces.** Reduce impervious surfaces to the maximum extent possible. Building footprints, sidewalks, driveways and other features shall be minimized.
- D. **Avoid Connecting Impervious Surfaces.** Route roof runoff over lawns and avoid using storm sewers. Grade sites to increase the travel time of stormwater runoff. Avoid concentrating runoff.
- E. **Use Pervious Paving Materials.** Use pervious materials for driveways, parking lots, access roads, sidewalks, bike trails and hiking trails. Provide pervious strips between streets and sidewalks.
- F. **Reduce Setbacks.** Reduce setbacks for buildings to shorten the driveways and entry walks.

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- G. Construct Cluster Developments. Construct cluster developments to reduce street length per lot.