

Better Site Design:

An Assessment of the Better Site Design Principles for Communities Implementing Virginia's Chesapeake Bay Preservation Act

<http://www.cblad.state.va.us/docs/pubs/bsd.pdf>

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Included in this review: Table of Contents, Objectives, and Model Development Principles.

Summary: The criteria and principles presented by the Chesapeake Bay Local Assistance Department (CBLAD) are not specific to forestland development, but provide a broad overview of good conservation planning practices. The charts and matrices within the document are good examples of graphically representing the principles being utilized to meet desired objectives. Organization of the case study material is very helpful (refer to Table 4.7, p.25).

Case study #1 – The Fields at Cold Harbor (refer to p.18-27) presents a low density residential development with private septic on forested and agricultural land. Housing is clustered, utilizes minimum setbacks, shared driveways, and conservation of natural greenspace. The entire parcel is 120.3 acres, with two-thirds of the predevelopment site forested. It also features an existing farm, farmhouse, cropland, pond, two wetlands, and historic Civil War earthworks. The author points out the impact of nutrient loads from septic systems. Placement and design of wastewater systems should be factors in evaluating water quality planning, “Septic systems are often the single largest source of nitrogen and phosphorous output on rural residential sites where better site design techniques can only reduce the relatively small stormwater load. While failing septic systems can be a significant source of pollution to a stream, even properly functioning septic systems still remain the largest source of nutrient loading” (p. 26 of PDF).

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Objectives (Criteria):

Three general performance criteria provide the broad objectives to be met through better site design and are the focus of the Model Development Principles described in this publication:

- **No more land shall be disturbed than is necessary to provide for the desired use or development.** (9VAC 10-20-120.1)
- **Indigenous vegetation shall be preserved to the maximum extent possible consistent with the use and development allowed.** (9VAC 10-20-120.2)
- **Land development shall minimize impervious cover consistent with the use or development allowed.** (9VAC 10-20-120.5)

Model Development Principles:

Conservation of Natural Areas

1. Conserve trees and other vegetation at each site by planting additional vegetation, clustering tree areas, and promoting the use of native plants. Wherever practical, manage community open space, street rights-of-way, parking lot islands, and other landscaped areas to promote natural vegetation.
2. Limit clearing and grading of forests and native vegetation at a site to the minimum amount needed to build lots, allow access, and provide fire protection. A fixed portion of any community open space should be managed as protected green space in a consolidated manner.

Lot Development

3. Promote open space development that incorporates smaller lot sizes to minimize total impervious area, reduce total construction costs, conserve natural areas, provide community recreational space, and promote watershed protection.
4. Relax side yard setbacks and allow narrower frontages to reduce total road length in the community and overall site imperviousness. Relax front setback requirements to minimize driveway lengths and reduce overall lot imperviousness.
5. Promote more flexible design standards for residential subdivision sidewalks. Where practical, consider locating sidewalks on only one side of the street & providing common walkways linking pedestrian areas.
6. Reduce overall lot imperviousness by promoting alternative driveway surfaces and shared driveways that connect two or more homes together.

Residential Streets and Parking Lots

7. Design residential streets for the minimum required pavement width needed to support travel lanes; on-street parking; and emergency, maintenance, and service vehicle access. Base widths on traffic volume.
8. Reduce the total length of residential streets by examining alternative street layouts to determine the best option for increasing the number of homes per unit length.
9. Residential street right-of-way widths should reflect the minimum required to accommodate the travel-way, the sidewalk, and vegetated open channels. Utilities and storm drains should be located within the pavement section of the right-of-way wherever feasible.
10. Minimize the number of residential street cul-de-sacs and incorporate landscaped areas to reduce their impervious cover. The radius of cul-de-sacs should be the minimum required to accommodate emergency and maintenance vehicles. Consider alternative turnarounds.
11. Where density, topography, soils, and slope permit, vegetated open channels should be used in the street right-of-way to convey and treat stormwater runoff.
12. The required parking ratio governing a particular land use or activity should be enforced as both a maximum and a minimum in order to curb excess parking space construction. Existing parking ratios should be reviewed for conformance taking into account local and national experience to determine if lower ratios are warranted and feasible.
13. Parking codes should be revised to lower parking requirements where mass transit is available or enforceable shared parking arrangements are made.
14. Reduce the overall imperviousness associated with parking lots by providing compact car spaces, minimizing stall dimensions, incorporating efficient parking lanes, and using pervious materials in the spillover parking areas where possible.
15. Provide meaningful incentives to encourage structured & shared parking to make it feasible.
16. Provide stormwater treatment for parking lot runoff using bioretention areas, filter strips, and/or other practices that can be integrated into required landscaping areas and traffic islands.