



# Recommended Model Development Principles for James City County, Virginia

Consensus of the Local Site  
Planning Roundtable

**Funded in part by:**

U.S. EPA Chesapeake Bay Program  
Chesapeake Bay Restoration Fund  
Virginia Environmental Endowment  
Virginia Department of Conservation and Recreation

**An Initiative of the *Builders for the Bay*:**

Center for Watershed Protection  
Alliance for the Chesapeake Bay  
Peninsula Housing and Builders Association  
James City County

**November 2004**

## Acknowledgments

The James City County Site Planning Roundtable would not have been possible without the time and effort extended by James City Roundtable members, the resources provided by the County, and the generous support of the U.S. EPA Chesapeake Bay Program, the Chesapeake Bay Restoration Fund, the Virginia Environmental Endowment, and the Virginia Department of Conservation and Recreation.

We would also like to thank the individuals who served as subcommittee spokespersons:

- Irvine Wilson: Residential Streets and Parking Lots Subcommittee
- Seth Sanders: Lot Development Subcommittee
- Lamont Myers: Natural Areas and Stormwater Management Subcommittee

In addition, we would like to extend a special thanks to Ellen Cook and Scott Thomas, James City County

Department of Development Management, who assisted in completing the Codes and Ordinances Worksheet (COW). We also want to thank James City County for use of its facilities and Robert Duckett of the Peninsula Homebuilders Association for his support throughout this process. Team members included Jennifer Zielinski, Stephanie Sprinkle, and Rebecca Winer from the Center for Watershed Protection and Scott Meyer and Jessica Blackburn of the Alliance for the Chesapeake Bay.

Copies of this document are available from: James City County Department of Development Management ([www.james-city.va.us](http://www.james-city.va.us)), Peninsula Housing and Builders Association ([www.penhousing.com](http://www.penhousing.com)), or the Center for Watershed Protection ([www.cwp.org](http://www.cwp.org)).

## Executive Summary

This document is a product of the James City County Local Site Planning Roundtable, an 11-month consensus process initiated by the Builders for the Bay Program to review existing development codes and identify regulatory barriers to environmentally sensitive residential and commercial development at the site level. A diverse cross-section of local government, civic, non-profit, environmental, homebuilding, development and other community professionals made up the membership of the James City County Roundtable. Through a consensus process, members of the Roundtable provided the expertise needed to adapt the National Model Development Principles to specific local conditions. Roundtable membership recommendations include general and specific code and ordinance revisions that would increase flexibility for site design standards and promote the use of open space and flexible design development in James City County.



The National Model Development Principles refined by the James City County Local Site Planning Roundtable are designed to collectively meet the objectives of Better Site Design (BSD), which are to: (1) reduce overall site impervious cover, (2) preserve and enhance existing natural areas, (3) integrate stormwater management, and (4) retain a marketable product. Code modifications and other targeted recommendations of the Roundtable were crafted to remove regulatory hurdles and provide incentives, flexibility, and guidance for developers in implementing BSD. This process is focused on model development principles at the site level and does not include discussions on zoning or land use.



**TABLE OF CONTENTS**

Purpose ..... 1

Introduction and Background ..... 1

Why James City County? ..... 2

James City County Roundtable Process ..... 3

Membership Statement of Support ..... 4

Recommended Model Development Principles ..... 5

*Residential Streets and Parking Lots* ..... 5

        Principle 1. Street Width ..... 5

        Principle 2. Street Length..... 6

        Principle 3. Rights-of-Way..... 6

        Principle 4. Cul-de-Sacs..... 7

        Principle 5. Vegetated Open Channels..... 7

        Principle 6. Parking Ratios..... 8

        Principle 7. Parking Codes..... 8

        Principle 8. Parking Lot Size..... 9

        Principle 9. Green Development Certification..... 9

*Lot Development*..... 10

        Principle 10. Open Space Development..... 10

        Principle 11. Setbacks..... 11

        Principle 12. Sidewalks..... 11

        Principle 13. Driveways and Alternative Surfaces..... 12

        Principle 14. Open Space Management..... 12

        Principle 15. On-Site Sewage Disposal Systems..... 13

        Principle 16. Infill and Redevelopment..... 13

*Natural Areas and Stormwater Management*..... 14

        Principle 17. Buffer Systems..... 14

        Principle 18. Buffer Maintenance..... 15

        Principle 19. Clearing and Grading..... 15

        Principle 20. Tree Conservation..... 16

        Principle 21. Conservation Incentives..... 16

        Principle 22. Stormwater Management..... 17

        Principle 23. Parking Lot Runoff..... 17

        Principle 24. Rooftop Runoff..... 17

About the James City County Local Site Planning Roundtable Partners..... 18

References.....back cover



## Purpose

This document presents specific recommendations on how to foster more environmentally sensitive local site design in James City County. The recommendations were crafted in conjunction with a diverse cross-section of development, local government, civic, non-profit, environmental, and other community professionals that participated in the James City County Site Planning Roundtable initiated by the Builders for the Bay Program.

## Introduction and Background

Every year, over two million acres of land are altered as a part of the development process. Development has historically led to degradation in water quality and biological integrity (NRCS, 2001). The impacts of watershed urbanization on the water quality, biology, and physical conditions of aquatic systems have been well documented (CWP, 2003). The development radius around many of our cities and smaller municipalities continues to widen at a rapid rate, far outpacing the rise in population (Leinberger, 1995). In the Chesapeake Bay Region, it is estimated that more than 90,000 acres of open land are converted annually by development, at a rate four to five times greater per person than seen 40 years ago (Chesapeake Bay Foundation, 2002). As a result, local codes and ordinances that promote reduced impact of development on local water resources are critical to future sustainability.

The protection of water resources and the character of the landscape under a continued growth scenario

requires local governments, developers, and site designers to fundamentally change the way that land is developed. Deciding where to allow or encourage development, promote redevelopment, and protect natural resources are difficult issues that jurisdictions have to balance. While effective zoning and comprehensive planning are critical, communities should also explore measures to minimize the impact of impervious cover, maintain natural hydrology, and preserve contiguous open space on sites where development is to occur.

Toward this end, the Center for Watershed Protection in concert with the Alliance for the Chesapeake Bay, the Peninsula Housing and Builders Association, and the James City County Department of Development Management convened a local Site Planning Roundtable in James City County, Virginia. The local Roundtable process in James City County was modeled after the National Site Planning Roundtable, the 22 Model Development Principles and four basic objectives:

1. Reduce overall site impervious cover
2. Preserve and enhance existing natural areas
3. Integrate stormwater management
4. Retain a marketable product

The 22 Model Development Principles act as benchmarks upon which more specific code and ordinance recommendations were adapted for James City County. The benefits of applying these 22 Model Development Principles are summarized in the table on the next page.





# INTRODUCTION

## Benefits of Applying the Model Development Principles

### Local Government:

- Increase local property tax revenues
- Facilitate compliance with wetlands and other regulations
- Assist with stormwater regulation compliance

### Homeowners:

- Increase property values
- Create more pedestrian friendly neighborhoods
- Provide open space for recreation
- Result in a more attractive landscape
- Reduce car speed on residential streets
- Promote neighborhood designs that provide a sense of community

### Developers:

- Flexibility in design options
- Reduce development costs
- Allow for more sensible locations for stormwater facilities
- Facilitate compliance with wetlands and other regulations

### Environment:

- Protect sensitive forests, wetlands, and habitats from clearing
- Preserve urban wildlife habitat
- Protect the quality of local streams, lakes, and estuaries
- Generate smaller loads of stormwater pollutants
- Help to reduce soil erosion during construction

## Why James City County?

The James City County Site Planning Roundtable is the third of 12 Builders for the Bay roundtables planned for the entire Chesapeake Bay watershed. The purpose of the project is to adapt the principles developed at the national level for local application and to identify local codes and ordinances that act to prohibit or impede better site design through a consensus-building process.

James City County was selected as a location for a roundtable for several reasons:

- James City County is within the Chesapeake Bay Watershed
- Current growth rate is significant
- Large undeveloped lands still remaining
- Growth management and costs are current pressing issues
- The County government expressed an interest and was willing to commit staff and resources to the process

- Completion of the Codes and Ordinance Worksheet (COW) indicated that James City County's current development rules are insufficient to protect the County's water resources and aquatic communities
- Better Site Design was identified as a priority for implementation in the County's adopted Powhatan Creek Watershed Management Plan
- The timing was appropriate given the County's code review and comprehensive plan revision schedule
- The Peninsula Housing and Builders Association generated support for the project among its members

With the objective of promoting environmentally superior building practices for new development in the Chesapeake Bay Region, the Center for Watershed Protection, Alliance for the Chesapeake Bay, Peninsula Housing and Builders Association, and the James City County Department of Development Management forged a coalition to implement a Local Site Planning Roundtable in James City County.

## James City County Roundtable Process

James City County Roundtable members convened many times over an 11-month period to become familiar with the Model Development Principles, review existing codes and regulations, work in subcommittees, and reach group consensus on a final set of recommendations. The Roundtable consisted of over 40 dedicated members representing a wide range of professional backgrounds and experience related to local development issues. The process included the following steps:

### Kickoff Meeting: January 2004

Approximately 60 stakeholders from across James City County participated in the meeting. Almost every major stakeholder group was represented including those from the development community, local government, environmental groups, police department and local utilities. The kickoff meeting introduced stakeholders to the national Model Development Principles, reviewed the Codes and Ordinance Worksheet (COW) for James City County, and had participants apply Better Site Design concepts through a hands-on subdivision site plan redesign exercise.

### Detailed Codes Analysis: February 2004

The codes analysis was based on results from the COW, feedback from the January kickoff meeting, and excerpts from existing codes and ordinances. This analysis completed by the Roundtable facilitators provided a concise summary of the regulatory barriers to implementing environmentally-sensitive site design in James City County and served as the foundation for subcommittee discussions.

The primary documents used for this analysis and for reference during the Roundtable include:

- Zoning Ordinance
- Subdivision Ordinance
- Chesapeake Bay Preservation Ordinance
- Erosion and Sediment Control Ordinance
- James City County Guidelines for Design and Construction of Stormwater Management BMPs
- VDOT Subdivision Street Requirements

### Subcommittee Meetings and Consensus Building: March - October 2004

The full Roundtable split up into three subcommittees with the diversity of interests and expertise represented in each. Each subcommittee was responsible for coming to consensus on a subset of the Model Development Principles:

- Residential Streets and Parking Lots
- Lot Development
- Natural Areas and Stormwater Management

All three subcommittees met in March, May and June 2004. In August the full Roundtable met, again, to begin the full membership consensus building process. The Lots Development subcommittee met one additional time in October 2004.

### Consensus on Final Recommendations: November 2004

The Roundtable came to consensus on the full suite of recommendations.





MEMBERSHIP STATEMENT OF SUPPORT

This document of model development principles and associated recommendations for implementation was crafted in conjunction with the diverse cross-section of development, local government, non-profit, environmental, and other community professionals who participated in the Builders for the Bay James City County Site Planning Roundtable.

The model development principles set forth in this document are recommended guidelines for development that, when used in combination, will help to reduce the impacts of development on receiving waters. The recommendations provided for the model development principles identify specific actions that should be taken to allow for full implementation and application of the model development principles in James City County.

Members of the Roundtable provided the technical experience and input needed to craft and refine the model development principles for James City County. These model development principles and associated recommendations reflect the Roundtable members' professional and personal experience with land development and do not necessarily carry the endorsement of the organizations, agencies, and companies represented by their members. Endorsement implies support of the principles and recommendations as a package and does not necessarily imply an equal level of support among individual recommendations by all Roundtable members.

The members of the James City County Site Planning Roundtable endorse the model development principles presented in the document: Recommended Model Development Principles for James City County, Virginia.

H. R. Ashe  
American Eastern, Inc.

Brad Belo  
Virginia Department of Conservation and Recreation

Ronald J. Boyd  
Williamsburg Environmental Group, Inc.

Michael C. Brown  
Williamsburg Community Builders Association

Robert B. Case, P.E.  
Hampton Roads Planning District Commission

Timothy P. Cleary, P.E.  
Williamsburg Land Conservancy

Darryl E. Cook  
James City County Environmental Division

Ellen Cook  
James City County Planning Division

Robert E. Cosby III, P.E.  
AES Consulting Engineers

Richard A. Costello  
AES Consulting Engineers

Beth Davis  
James City Service Authority / James City County Development Management

Robert Duckett  
Peninsula Housing and Builders Association

David Fuss  
Friends of the Powhatan Creek Watershed

Larry Gavan  
Virginia Department of Conservation and Recreation

Carrie Hagin  
James River Association

Nancy D. Hankins  
Cox Communications

Mark H. Hill  
James City County Fire Department

John T. P. Horne  
James City County Department of Development Management

Sarah T. Kadec  
Historic Route 5 Association

Steve Kelly  
Mid-Atlantic Commercial

Kerry Linehan  
U.S. Fish & Wildlife Service

Elizabeth Locklear-Polak  
Virginia Department of Conservation and Recreation - Division of Natural Heritage

Pamela Mason  
Virginia Institute of Marine Science

Joseph R. McCleary  
James City County Planning Commission

Skip Morris  
Harrison & Lear Land Corporation

Allen J. Murphy, Jr.  
James City County Planning Division

Lamont D. Myers  
Mid-Atlantic Commercial

Ed Overton  
James City County Purchase of Development Rights Program

Danny W. Poe  
James City Service Authority

Mark G. Rinaldi  
LandMark Design Group

Alan Robertson  
Williamsburg-James City County Schools

David M. Root  
Thalhimer Commercial Real Estate

Seth B. Sanders  
P.F. Summers of Virginia, LLC

O. Marvin Sowers, Jr.  
James City County Planning Division

Matthew J. Stauch  
Jack L. Massie Contractor, Inc.

Scott J. Thomas  
James City County Environmental Division

Paul B. Tubach, Jr.  
James City County Parks and Recreation

Bradley A. Weidenhammer  
Virginia Department of Transportation

Irvine Wilson  
Chickahominy Watershed Alliance

Michael Woolson  
James City County Environmental Division



# Model Development Principles

Recommended by the James City County Site Planning Roundtable



## Residential Streets and Parking Lots



RESIDENTIAL STREETS AND PARKING LOTS

### Principle #1: Street Width

Design residential streets for the minimum required pavement width needed to support travel lanes; on-street parking; and emergency, maintenance, and service vehicle access. These widths should be based on traffic volume.

#### Rationale

Residential streets are often unnecessarily wide and the excessive widths contribute to the largest single component of impervious cover in a subdivision. The U.S. Fire Administration recommends an 18-20' wide street to accommodate a fire vehicle.

#### Recommendation

The Roundtable supports this principle and makes the following recommendations:

- When concurrence of local JCC officials is required to reduce street width below the base VDOT design standards, VDOT should accept JCC County staff recommendations and not require JCC Board of Supervisors action. This will help to streamline the process and reduce time required to get approval for street width reduction.
- VDOT should reduce the permissible street width from 26 to 24 feet. See Table 1.

Table 1. Current and Recommended VDOT Street Width and ROW Requirements for Curb and Gutter Streets with On-Street Parking and Less than 400 ADT

	Roadway Width (feet)	Right-of-Way Width (feet)
Current VDOT Allowable Width	28	40
Current VDOT Allowable Width with Concurrence of Local Officials	26	40
Recommended Allowable Widths with Concurrence of Local Officials	26	38
	24	36



## Principle #2: Street Length

Reduce total length of residential streets by examining alternative street layouts to determine the best option for increasing the number of homes per unit length.

### Rationale

The total street length is often a function of the frontage, number of entrances, pedestrian safety, and physical site conditions. Guidance encouraging thoughtful, flexible and practical subdivision design criteria that reduces the overall street length can be useful to reduce impervious cover while maintaining desired dwelling units.

### Recommendation

The Roundtable supports this principle and recommends that the County continue to encourage the use of alternative street designs to reduce the overall imperviousness of the development site.

## Principle #3: Rights-of-Way

Wherever possible, residential street right-of-way widths should reflect the minimum required to accommodate the travel-way, sidewalk, and vegetated open channels. Utilities should be located within the pavement section of the right of-way (ROW) wherever feasible.

### Rationale

A wide ROW is only needed when utilities and sidewalks are located some distance from the paved section of the roadway. ROW widths can be reduced when applying design techniques, such as reducing street and sidewalk width requirements.

### Recommendation

The Roundtable supports this principle and makes the following recommendations:

- JCC should adopt a policy that telephone, cable, and electrical utilities are to utilize the “Joint Trench Initiative” in order to reduce disturbance.
- JCC should require utility easements to be shown on preliminary plats.
- James City County and James City Service Authority should work with VDOT to develop adequate requirements for design, location, and construction of water and sanitary sewer utilities to be constructed within the pavement limits. Such provisions shall include requirements that will ensure that adequate testing and inspection is performed to minimize future settlement.
- Reduce ROW width according to the Table 1 Principle #1 Street Width.



## Principle #4: Cul-de-Sacs

The radius of cul-de-sacs should be the minimum required to accommodate emergency and maintenance vehicles in order to reduce the amount of impervious cover. Landscaped cul-de-sac islands that reduce impervious cover and/or enhance stormwater management should be encouraged.

### Rationale

Reducing the impervious cover associated with conventional cul-de-sac turnarounds can be accomplished by reducing the minimum paved turning radii, by redesigning the turnaround with a landscape island or alternative shape, or by reducing the total number of turnarounds by modifying street layouts.

### Recommendation

The Roundtable endorses this principle and acknowledges that the County's minimal cul-de-sac radii are in accordance with the national benchmark for cul-de-sac radii.

## Principle #5: Vegetated Open Channels

Where density, topography, soils and slope permit, vegetated open channels should be considered as an option for conveying and treating stormwater runoff.

### Rationale

Streets contribute higher loads of pollutants to urban stormwater than any other source area in residential developments (Bannerman, et al., 1993 and Steuer, et al. 1997). The use of vegetated open channels to convey stormwater runoff can remove some of these pollutants and decrease the volume of stormwater generated from a site.

### Recommendation

The Roundtable supports this principle and acknowledges that there are no impediments to its implementation in James City County ordinances and regulations.





## Principle #6: Parking Ratios

Existing parking ratios should be reviewed for conformance taking into account local and national experience to see if lower ratios are warranted and feasible. Excess parking space construction should be discouraged.

### Rationale

A parking ratio typically expresses the minimum number of parking spaces that must be provided for a particular land use. To strengthen this process there should be a specific step in the plan review process to ensure that the level of impervious cover is minimized.

### Recommendation

The Roundtable supports this principle and makes the following recommendations:

- As one of the performance standards of the Chesapeake Bay Preservation ordinance is to keep impervious cover of a site to a minimum, if established minimum parking lot requirements are exceeded for a land-development project, County plan of development review staff can request that the applicant provide additional information to support, justify or explain why minimum requirements were exceeded for the intended site use.
- In cases where there is a need for additional parking beyond the minimum requirements, the use of pervious surfaces should be encouraged.

## Principle #7: Parking Codes

Parking codes should be revised to lower parking requirements where mass transit or other transportation modes are available or enforceable shared parking arrangements are made.

### Rationale

The size of a parking lot is driven by stall geometry, lot layout, and parking ratios.

### Recommendation

The Roundtable recommends that a model shared parking agreement be available to developers through the planning division. The model agreement should include standard language specifying the rights and responsibilities of each landowner; ramifications of future changes in land use and whether more spaces can be added if the land uses change. This document should be submitted and reviewed by the county during site plan review but can also apply to existing or changing land uses.



## Principle #8: Parking Lot Size

Reduce the overall imperviousness associated with parking lots by, minimizing stall dimensions, incorporating efficient parking lanes, and using pervious materials in spill over parking areas.

### Rationale

The size of a parking lot is driven by stall geometry, lot layout, and parking ratios.

### Recommendation

The Roundtable endorses this principle and acknowledges that the County already supports this principle by meeting national benchmarks for minimum stall widths of 9' for 90 degree parking; encouraging shared parking, and requiring parking studies when parking lots greatly exceed minimum parking requirements. The Roundtable also recommends lowering the handicapped stall width to meet ADA requirements.



## Principle #9: Green Development Certification

Provide meaningful, non-regulatory, incentives to encourage the use of Better Site Design Techniques in James City County.

### Rationale

When regulations are in place that allow for flexible site design, incentives should be offered to recognize or award the development and engineering community and applicants who incorporate the principles of better site design into their site development projects.

### Recommendation

The Roundtable supports this principle and makes the following recommendation:

- County staff involved with the existing County PRIDE (Protecting Resources in Delicate Environments) water quality education program should consider, investigate and establish a provision in the program to recognize/award the development and engineering community and applicants who incorporate the principles of better site design into their site development projects (establishment of such a provision in the PRIDE program would be consistent with Priority # 14 of the approved Powhatan Creek watershed management plan and Priority # 10 of the approved Yarmouth Creek Watershed Management Plan).



## Lot Development



### Principle #10: Open Space Development

Encourage open space development that incorporates smaller lot sizes, minimizes total impervious area, conserves natural areas, provides community open space, reduces total construction costs, protects water quality, and promotes watershed protection.

#### Rationale

Open space development is a compact form of development that concentrates density on one portion of the site (through clustering) in exchange for more open space elsewhere. Less impervious cover translates to less stormwater runoff. Decreased stormwater runoff translates to less stormwater pollution and benefits to water quality. Where reduction of impervious surface is not actually achieved, open space development still allows for improvement of water quality through more efficient stormwater management, increased riparian buffers, increased open space, and avoidance of environmentally sensitive areas.

#### Recommendation

The Roundtable supports this principle and makes the following recommendations:

- The group acknowledges that properly designed open space developments do reduce impervious cover, promote open space, and improve water quality, as compared to conventional development.
- The use of open space developments should be by-right in R-1 at base density, with adequate ordinance provisions for new development adjacent to existing residential development in order to protect the character of existing conventional subdivisions.
- The Planning Commission and the Board of Supervisors, with broad-based stakeholder input, should consider if the time requirement and complexity of the existing special use permit (SUP) process:
  - 1) Create a barrier to allowing R-1 and R-2 open space developments with densities above the base density, and
  - 2) Provide adequate incentives to ensure additional environmental protection.



## Principle #11: Setbacks

In cases when open space development is not possible, relax setbacks to achieve greater flexibility of design, minimize driveway lengths for housing, reduce grading areas, minimize land disturbance for construction, and promote the efficient use of land.

### Rationale

Often zoning codes have very strict requirements that govern the geometry of the lot. Relaxing setbacks and utilizing non-traditional designs can minimize imperviousness while reducing driveway lengths.

### Recommendation

The Roundtable supports this principle and makes the following recommendation:

- For conventional development, reduce minimum front setbacks to 25 feet in the R-1 and R-2 residential zones.

## Principle #12: Sidewalks

Promote more flexible design standards for residential subdivision sidewalks. Where practical, consider locating sidewalks on only one side of the street and providing common walkways linking pedestrian areas.

### Rationale

Sidewalk requirements are an important element of many zoning ordinances and are intended to protect pedestrians and address liability concerns. However, requirements should be flexible enough to meet pedestrian demands, while minimizing the amount of impervious cover. Sidewalks may be unnecessarily required where the demand has not been generated by development trends.

### Recommendation

The Roundtable supports this principle, as stated, and makes the following recommendations:

- Eliminate the mandatory requirement for sidewalks on both sides of all streets for low density (0-4 du/acre) and moderate density (4-12 du/acre) developments.
- Where practical, sidewalks shall be sloped such that they drain to a pervious surface to allow runoff to infiltrate.
- Non-monetary incentives should be offered to developers to use alternative pavement materials and promote low impact development. For example, the use of these materials should be able to satisfy stormwater management criteria.



### Principle #13: Driveways and Alternative Surfaces

Reduce overall lot imperviousness by promoting alternative driveway surfaces and shared driveways that connect two or more homes together.

#### Rationale

Studies show that 20% of the impervious cover in residential subdivisions can consist of driveways. Flexible local subdivision codes can allow developers the ability to address this concern, while minimizing impervious surfaces and increasing design efficiencies.

#### Recommendation

The Roundtable supports this principle and makes the following recommendations:

- Incentives should be available for developments that reduce impervious cover through the use of shared driveways and alternative surfaces.
- A maintenance agreement should be available to developers and should be required to be re-signed/re-activated by landowners at time of sale.

### Principle #14: Open Space Management

Clearly specify how community open space will be managed and designate a sustainable legal entity, such as a homeowners association, responsible for managing both natural and recreational open space.

#### Rationale

Open space management is often poorly defined in most communities leaving the design and maintenance of the space up to the homeowner, homeowners associations (HOAs), or other entities that may be ill equipped to properly maintain high quality open space. JCC needs more clearly defined open space management provisions for subdivisions.

#### Recommendation

The Roundtable supports this principle and makes the following recommendations:

- Conduct pro-active, annual re-education opportunities geared towards managing and sustaining water quality improvement practices, areas and facilities.
- County and developer guidance for homeowners associations (HOAs) should be made more explicit on how to manage conservation areas and should include responsibilities and a checklist of standard management measures and benefits.
- A portion of open space in new residential developments should be managed in a natural condition. It should be specified how it will be managed (public, private, park, etc.). In higher density zoning districts, open space should consist of a balance between natural areas and passive or active recreation areas.





## Principle #15: On-Site Sewage Disposal Systems

Routine maintenance and repair of on-site sewage disposal systems (OSDS) should be required and enforced. Homeowner education on the regulations and maintenance requirements of on-site sewage disposal systems should occur on a regular basis to promote proper system function.

### Rationale

Failure of on-site sewage disposal systems can result in surface or subsurface movement of nutrients and bacteria into the streams, groundwater or other receiving waters. Nationally, the accepted practice is to inspect the tank and leach field routinely.

### Recommendation

The Roundtable supports this principle and makes the following recommendations:

- JCC should continue to utilize and enforce existing Chesapeake Bay Preservation Ordinance provisions for on-site sewage disposal system maintenance.
- The County should consider incentives for promoting the use of alternative systems where conventional on-site sewage treatment practices are typically utilized.
- If alternative systems are utilized, routine maintenance should be required and enforced.

## Principle #16: Infill and Redevelopment

Redevelopment and infill reduce the demands on areas outside of the Primary Service Area, minimize additional impervious cover, reduce sprawl, and promote environmentally sound techniques that enhance and preserve water quality.

### Rationale

On a County-wide scale, redevelopment and infill development can help to decrease the pressure of development on rural areas, minimize conversion of undeveloped lands to developed lands, and maximize efficient utilization of existing infrastructure. In addition, redevelopment can help to reduce overall impervious cover.

### Recommendation

The Roundtable supports this principle and makes the following recommendations:

- Encourage environmentally-sound landscaping practices, building, and redevelopment techniques, as applicable.
- Promote land redevelopment and infill practices that minimize site disturbance and impervious surfaces.



## Natural Areas & Stormwater Management



### Principle #17: Buffer Systems

Create a naturally vegetated buffer system along all perennial streams that also encompasses critical environmental features such as the 100-year floodplain, steep slopes, and freshwater wetlands.

#### Rationale

Vegetated systems along shorelines, wetlands and streams can protect water quality, reduce flooding impacts, provide wildlife habitat, serve as a recreational resource and offer many economic benefits to the local community.

#### Recommendation

The Roundtable supports this principle and acknowledges that there are no impediments to its implementation in James City County ordinances and regulations. However, education and enforcement may encourage further implementation.

Specific recommendations related to education include:

- Provide homeowners with a brochure at closing, or after closing, that lists plants that homeowners typically prefer in buffers and other areas (such as English Ivy) with comparable preferred alternative plants. The brochure should include photographs and locations where the plants can be purchased.
- Display posters at nurseries and garden centers that have the same information as the brochure discussed above.
- Educate employees of nurseries and garden centers. However, this may need to be a continuous program since there may be high employee turnover.
- Garden center education avenues should reach “big box” centers (i.e., Lowe’s) as well as “mom and pop” stores.
- Local native plant society should be further explored as a source of native plants for homeowners.
- JCC should use avenues already in place to educate residents, including articles in the Gazette and by expanding the current education program with nurseries to include the “big box” stores.
- JCC should provide information on native plantings for homeowner association newsletters, which are often looking for new information to print.

Specific recommendations related to buffers along intermittent streams:

- The County should provide an incentive for the protection of intermittent stream buffers by incorporating this into the County’s 10-point system. Points received for protecting intermittent stream buffers as open space should have higher value than general open space protection on a site.
- The County and private developers should utilize homeowner associations as an avenue to educate homeowners on the protection of intermittent streams.



## Principle #18: Buffer Maintenance

The riparian stream buffer should be preserved or restored with County-approved vegetation that can be maintained throughout the plan review, delineation, construction, and occupancy stages of development.

### Rationale

In many communities that have stream buffer ordinances, the buffer is merely a line drawn on a map, which is virtually invisible to contractors and landowners. The key to effective preservation and management of local buffer program is development of a strong buffer ordinance that outlines the legal rights and responsibilities of the local entity that is responsible for the long-term management of the buffer.

### Recommendation

The Roundtable supports this principle and makes the following recommendations:

- The County should revisit its approved plant list and consult with the College of William and Mary and other stakeholders to update the list.
- Educate homeowners on the importance of stream buffers, the appropriate plants to use, and the stream buffer regulations.

## Principle #19: Clearing and Grading

Clearing and grading of forests and native vegetation at a site should be limited to the minimum amount needed to build lots, allow access, and provide fire protection. A portion of any community open space should be managed as protected green space in a consolidated manner.

### Rationale

It is desirable that as much of a site be conserved in a natural state as possible. Common tools to limit clearing are: erosion and sediment control ordinances, Chesapeake Bay ordinances, grading ordinances, forest conservation or tree protection ordinances, and open space development.

### Recommendation

The Roundtable supports this principle and makes the following recommendation:

- The County does not have erosion and sediment control inspection or enforcement authority for construction associated with public utilities within residential subdivisions and commercial development projects. The County and the Peninsula Housing and Builders Association should jointly petition the State to request that this authority be given to the County. This would be restricted to inspection and enforcement of erosion and sediment control practices for utility construction within individual residential subdivision and commercial development projects.



## Principle #20: Tree Conservation

Conserve trees and other vegetation at each site by planting additional vegetation, clustering tree areas, and promoting the use of native plants. Where practical, manage community open space, street rights-of-way, parking lot islands, and other landscaped areas to promote natural vegetation.

### Rationale

Native trees, shrubs, and grasses are important contributors to the overall quality and viability of the environment. In addition, they can provide noticeable economic benefits to developers and homeowners.

### Recommendation

The Roundtable supports this principle and acknowledges that there are no impediments to its implementation in James City County ordinances and regulations. In addition, the County's 10-point system provides an incentive to maintain open space as natural. The Roundtable makes the following recommendation that may increase application of this principle:

- A conceptual site plan review meeting may provide a forum for identifying tree conservation and open space preservation opportunities on development sites. This Roundtable supports the continued use of the voluntary conceptual plan review process for all new developments.

## Principle #21: Conservation Incentives

Incentives and flexibility such as, but not limited to, density compensation, buffer averaging, property tax reduction, stormwater credits, and by-right open space development should be considered to promote the conservation of stream buffers, forests, meadows, rare species, or unique habitat, and other areas of environmental value over and above current regulations. Additional off-site mitigation consistent with locally adopted watershed plans should be considered where on-site credit is not possible.

### Rationale

Conservation and protection measures that require excessive administrative requirements, such as lengthy plan reviews, additional upfront costs to developers and unclear appeal procedures can create a major barrier to implementation. Incentives and flexibility are an effective way to promote adoption of conservation and protection measures.

### Recommendation

The Roundtable supports this principle and makes the following recommendations:

- Expand the list of open space options that may receive points under the 10-point system. In particular, the County should assign higher point values to priority conservation areas identified in the County's watershed plans, to buffers that are preserved along intermittent streams, and, in consultation with the Department of Conservation and Recreation Division of Natural Heritage, to areas that provide habitat to rare or threatened species.
- With broad-based stakeholder input, the Planning Commission should examine possible incentives and means of flexibility and make recommendations to the Board of Supervisors.



## Principle #22: Stormwater Management

Stormwater runoff from new development should be treated per the James City County Chesapeake Bay Preservation Ordinance and the Erosion and Sediment Control Ordinance.

### Rationale

Stormwater management requirements can be used to control the quantity and/or the quality of stormwater runoff from new sites. The stormwater runoff quantity controls can minimize flooding, and sometime reduce downstream erosion. Stormwater runoff quality measures can reduce the level of pollutants that enter the waterway and contaminate water sources.

### Recommendation

The Roundtable supports this principle and acknowledges that there are no impediments to its implementation in James City County ordinances and regulations.

## Principle #23: Parking Lot Runoff

Wherever possible, 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.

### Rationale

Parking lots generate high volumes of stormwater runoff, and high levels of runoff contamination from pollutants deposited on the lot surface.

### Recommendation

The Roundtable supports this principle and agrees that further guidance for designers and as well as incentives may encourage further implementation. Specific recommendations include:

- The County should adopt a formal program that defines acceptable low impact development practices and provide credits for their use.
- The County should encourage the use of pervious surfaces (i.e., turf) in overflow parking areas.

## Principle #24: Rooftop Runoff

Direct rooftop runoff to pervious areas such as yards, open channels, or vegetated areas and avoid routing rooftop runoff to the roadway and the stormwater conveyance system.

### Rationale

Sending rooftop runoff over a pervious surface before it reaches an impervious surface can decrease annual runoff volume from developed sites.

### Recommendation

The Roundtable supports this principle and acknowledges that there are no impediments to its implementation in James City County ordinances and regulations. However, incentives may encourage further implementation, particularly on commercial and industrial sites. Specific recommendations for incentives include:

- Investigate allowing extra stormwater management points to be earned through careful management of rooftop runoff.
- JCC should provide credit within the stormwater management points system for the reuse of stormwater runoff for irrigation.



## Builders for the Bay

In December 2001, the Alliance for the Chesapeake Bay, the Center for Watershed Protection, and the National Association of Homebuilders launched a partnership known as Builders for the Bay. The primary mission of the Builders for the Bay coalition is to coalesce local builders, developers, environmental groups, governments, and other important stakeholders in a process to review their existing codes and ordinances and begin a locality specific roundtable process. More information and resources related to the Builders for the Bay program can be accessed at [www.buildersforthebay.net](http://www.buildersforthebay.net).

### Center for Watershed Protection

Founded in 1992, the Center for Watershed Protection (CWP) is a non-profit organization that works with local, state, and federal governmental agencies, environmental consulting firms, watershed organizations, and the general public to provide objective and scientifically sound information on effective techniques to protect and restore urban watersheds. CWP also acts as a technical resource for local and state governments around the country to develop more effective urban stormwater and watershed protection programs. For more information on CWP visit [www.cwp.org](http://www.cwp.org).

### Alliance for the Chesapeake Bay

The Alliance for the Chesapeake Bay (ACB) is a regional non-profit organization that fosters partnerships for the restoration of the Bay and its rivers. ACB is known as the “Voice of the Bay” for its objective, unbiased information on Bay-related issues. Since 1971, ACB has been helping to build consensus on Bay policies; engaging volunteers in important hands-on restoration projects; educating citizens about the Chesapeake Bay watershed; and strengthening the capacity of grassroots watershed organizations. For more information on ACB visit [www.alliancechesbay.org](http://www.alliancechesbay.org).

### Peninsula Housing and Building Association

The Peninsula Housing and Building Association (PHBA) is the Virginia Peninsula's professional association for the home-building industry serving over 400 member companies. PHBA's mission is to promote the housing and building industry through its commitment to improving the quality of life within the community it serves. It fulfills this mission by providing governmental representation, business services such as group insurance, industry promotion, education, business referrals, communication and networking for its membership of industry professionals. For more information on PHBA visit [www.penhousing.com](http://www.penhousing.com).

### James City County

The mission of James City County is to work in partnership with all citizens to achieve a quality community. We will do that by providing outstanding customer service, managing finances wisely, encouraging a balanced economy, being good stewards of the natural environment and historic heritage, planning responsibly for the needs of a growing and diverse community, and improving the lives of our citizens and fostering a sense of community. For more information on James City County visit [www.james-city.va.us](http://www.james-city.va.us).

## References

Center for Watershed Protection (CWP). 2003. Impacts of Impervious Cover on Aquatic Systems. Ellicott City, MD.

Center for Watershed Protection (CWP). 1998a. Better Site Design: A Handbook for Changing Development Rules in Your Community. Ellicott City, MD.

Center for Watershed Protection (CWP). 1998b. Consensus Agreement on Model Development Principles to Protect Our Streams, Lakes, and Wetlands. Ellicott City, MD.

Chesapeake Bay Foundation, 2002. Chesapeake Bay Foundation. 2002. Growth, Sprawl and the Chesapeake Bay: Facts About Growth and Land Use. On-line 4/03 at: [www.cbf.org/sitePageServer?pagename=resources\\_facts\\_sprawl](http://www.cbf.org/sitePageServer?pagename=resources_facts_sprawl).

Leinberger, C.. 1995. "Metropolitan Development Trends of the Late 1990s: Social and Environmental Implications." Land Use in America, H.L. Diamond and P.F. Noonan, 1996, editors. Island Press. Washington, DC.

NRCS. 2001. Natural Resources Inventory. United States Department of Agriculture. Natural Resources Conservation Service. January 2001.

Steuer, J., W. Selbig, N. Hornewer, and J. Prey. 1997. "Sources of Contamination in an Urban Basin in Marquette, Michigan and an Analysis of Concentrations, Loads, and Data Quality." U.S. Geological Survey, Water-Resources Investigations Report 97-4242.



# Builders for the Bay



*Center for Watershed  
Protection*  
8390 Main Street, 2nd Floor  
Ellicott City, MD 21043  
[www.cwp.org](http://www.cwp.org)



*Peninsula Housing and  
Builders Association*  
760 McGuire Place  
Newport News, VA 23601  
[www.penhousing.com](http://www.penhousing.com)



*Alliance for the  
Chesapeake Bay*  
P.O. Box 1981  
Richmond, VA 23218  
[www.alliancechesbay.org](http://www.alliancechesbay.org)



*James City County Department  
of Development Management*  
101-E Mounts Bay Road  
P.O. Box 8784  
Williamsburg, VA 23187  
[www.james-city.va.us](http://www.james-city.va.us)