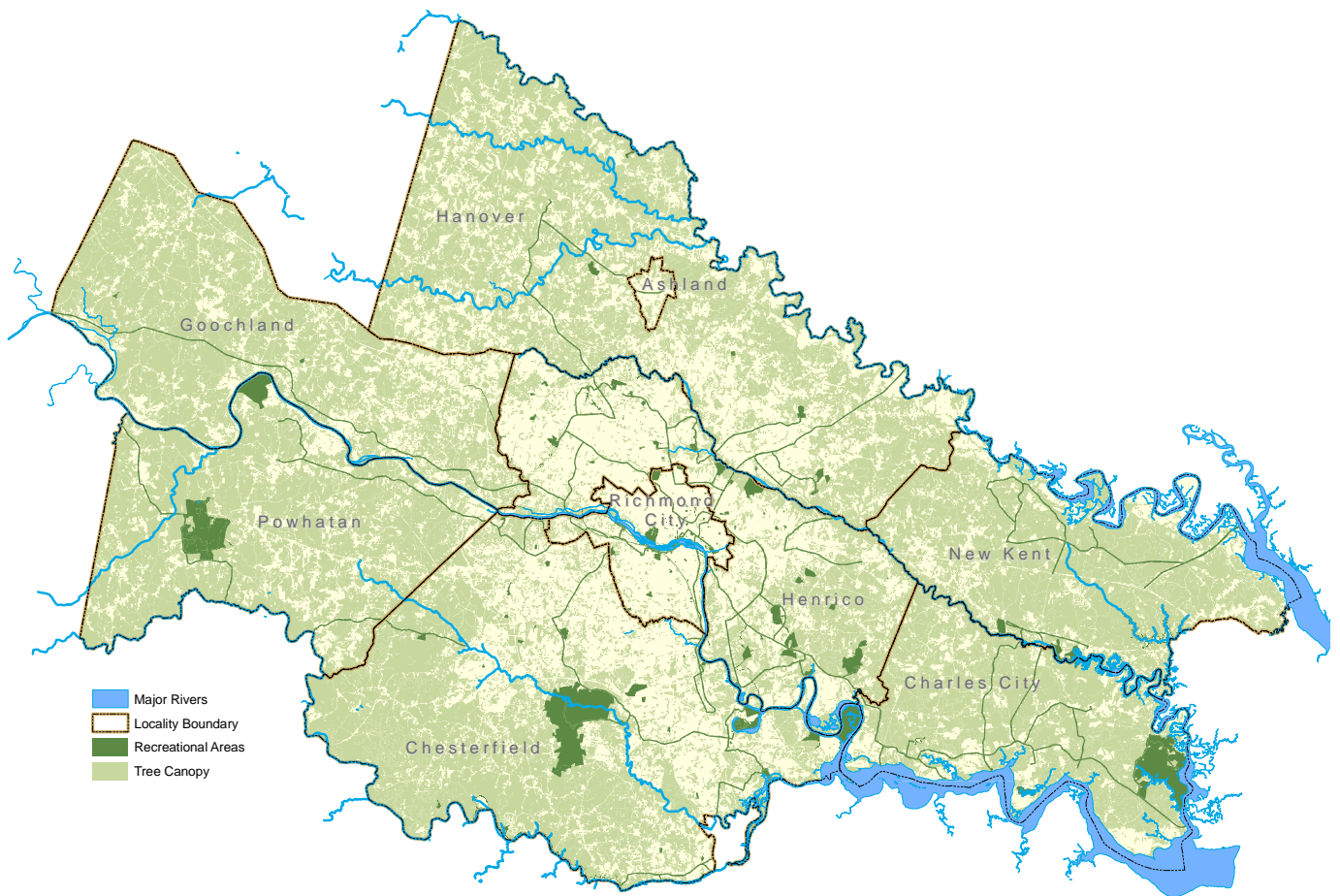


# THE RICHMOND REGION GREEN INFRASTRUCTURE PROJECT



*Building a regional  
green infrastructure network  
for our communities*

**SPRING 2009**

WELCOME

Between September 2008 and April 2009, the Richmond Regional Planning District Commission, the Green Infrastructure Center, and the Capital Regional Land Conservancy undertook a cooperative project to document the Richmond Region’s green infrastructure assets.

The project culminated in a March 2009 workshop that brought together local governments, state and federal agencies, and diverse organizations to discuss the region’s green infrastructure assets and priorities.

This summary report presents a resource for green infrastructure planning activities across the Richmond Region.

WHAT’S INSIDE

REGIONAL GREEN INFRASTRUCTURE ASSETS

OPPORTUNITIES & LESSONS LEARNED

NEXT STEPS AND IMPLEMENTATION



Richmond Region  
Green Infrastructure Assets

- Protected Lands (public holdings & easements)
- Connected High Value Landscapes
- Intact Landscapes
- Tree Canopy
- Major Rivers
- Urban Developed Land

Nature-Based Recreation

- Blueways
- Scenic River
- Scenic Byways
- Birding & Wildlife Trail
- Nature-Based Recreation (Public Access)
- Regional Trails

Recreation Features >50 acres are labeled

Source habitat cores data supplied by the Virginia Department of Conservation and Recreation, Division of Natural Heritage.



■ More than 2,000 farms covering approximately 303,000 acres provide habitat, filter water, and sequester carbon as well as sustain the region’s agricultural economy.

■ Area trails, parks, and historical sites connect communities with the region’s rich natural and human history.

- The James and Appomattox Rivers provide drinking water, support recreational and economic opportunities, and foster our abundant aquatic wildlife systems.
- The region’s forests are a renewable economic resource that purify the region’s air and water, prevent soil erosion, and support biodiversity.
- State and federal wildlife areas provide habitat as well as opportunities for recreation, environmental education, and bird watching.



Rockahock - a recreational destination - on the banks of the Chickahominy River

# THEN AND NOW

## seven years in a changing landscape

As of 2009, the Richmond Region continues to benefit from significant green infrastructure assets. At the same time, these maps illustrate the need to conserve, protect, and restore these resources before more landscapes are fragmented or degraded.

The map on the next page is a resource that supports the region's efforts to think strategically about its green infrastructure resources and planning activities over the short- and long-term.

## WHAT IS GREEN INFRASTRUCTURE?

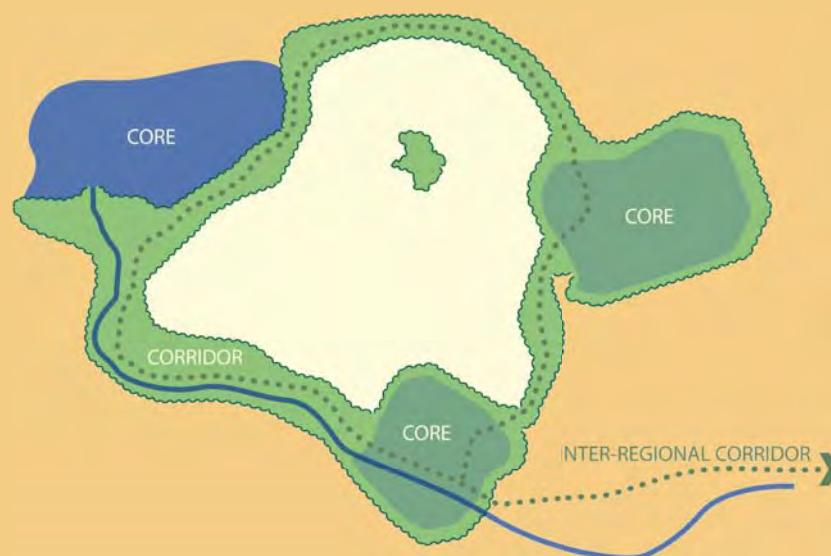
Green infrastructure is the natural resources and working lands that provide our clean water and air, ensure our quality of life, and sustain our economy.

Virginia's rich green infrastructure resources include our forests, waterways and bays, soils, wildlife areas, wetlands, dunes, historic landscapes, and parks.

Green infrastructure is woven throughout our towns, cities, and subdivisions as well as across our mountains, valleys, and shores.

**Green infrastructure planning** connects intact habitat areas (cores) through a network of corridors to allow people, wildlife, and plants to move across the landscape. A connected landscape makes species less susceptible to extinction while allowing for both conservation and recreation.

The results: better land use planning, protected green infrastructure, and healthier communities.



A green infrastructure network is made up of connected core habitats and connecting corridors that help animals, seeds, and people move across the landscape.

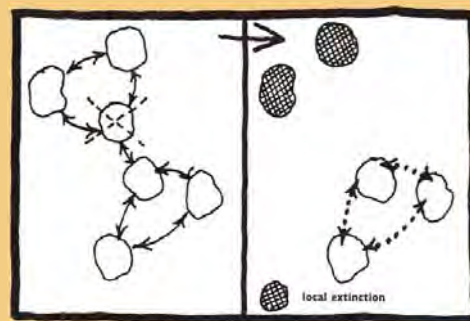
## GREEN INFRASTRUCTURE IN VIRGINIA

The Virginia Natural Heritage Program in the Department of Conservation and Recreation has developed the Virginia Natural Landscape Assessment (VaNLA) for identifying, prioritizing, and linking natural lands in Virginia. These natural lands, or cores, are assigned an Ecological Integrity Score. In general, higher scores are given to areas that are more biologically diverse, part of a larger complex of natural lands, and contribute to water quality enhancement.

The maps on page 5 demonstrate the distribution of natural lands by ecological integrity across the Richmond Region.

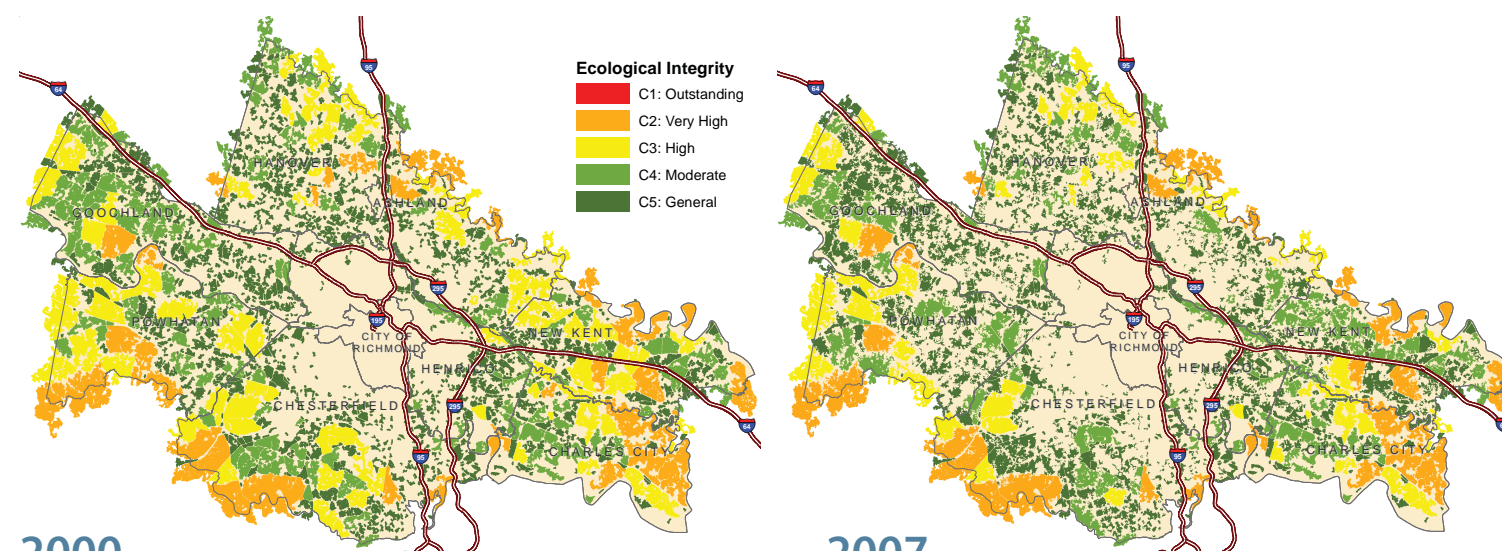
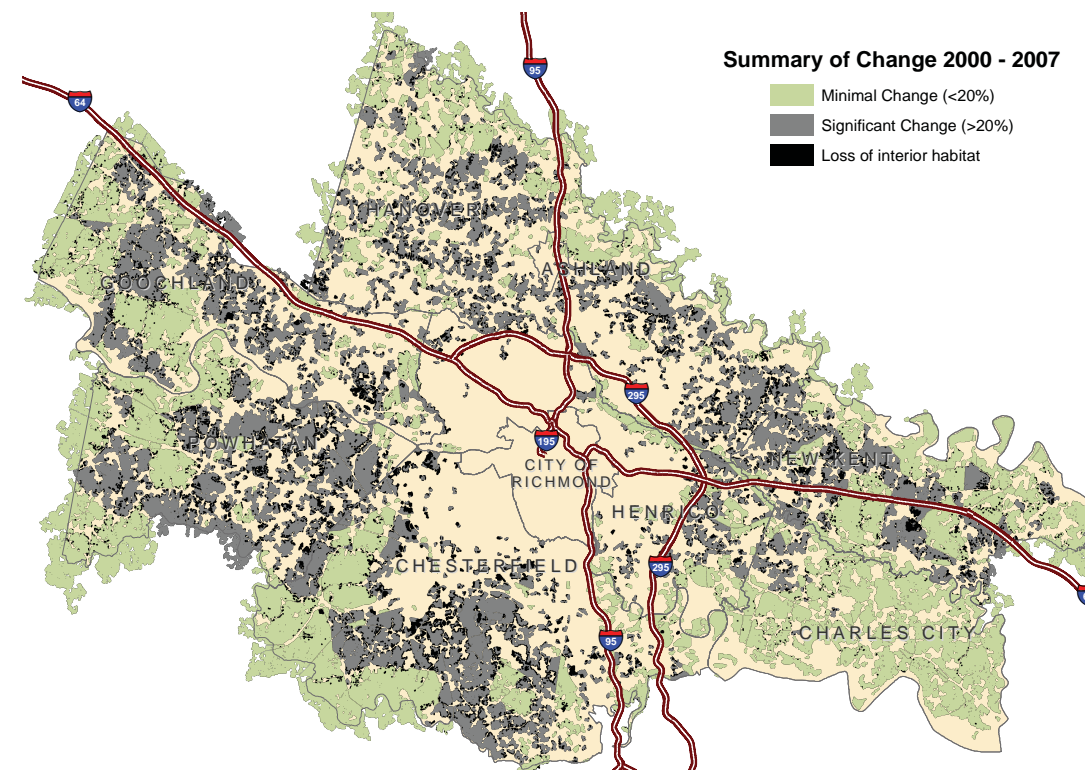
### CONNECTION IS KEY

Maintaining intact natural landscapes is essential for our basic ecosystem services. Fragmentation not only results in the loss of habitat and natural corridors but also the degradation of important ecosystem functions that provide us with ecosystem services like clean air and water, assistance with climate regulation and buffers to the impacts of natural disasters.



When a core is removed, connectivity is lost resulting in local species extinction.

Image: Dramstad, Wenche E., et al. *Landscape Ecology Principles in Landscape Architecture and Land Use Planning*. Washington D.C., Island Press, 1996.



2000

The Richmond Region's high-value green infrastructure assets are spread across the region.

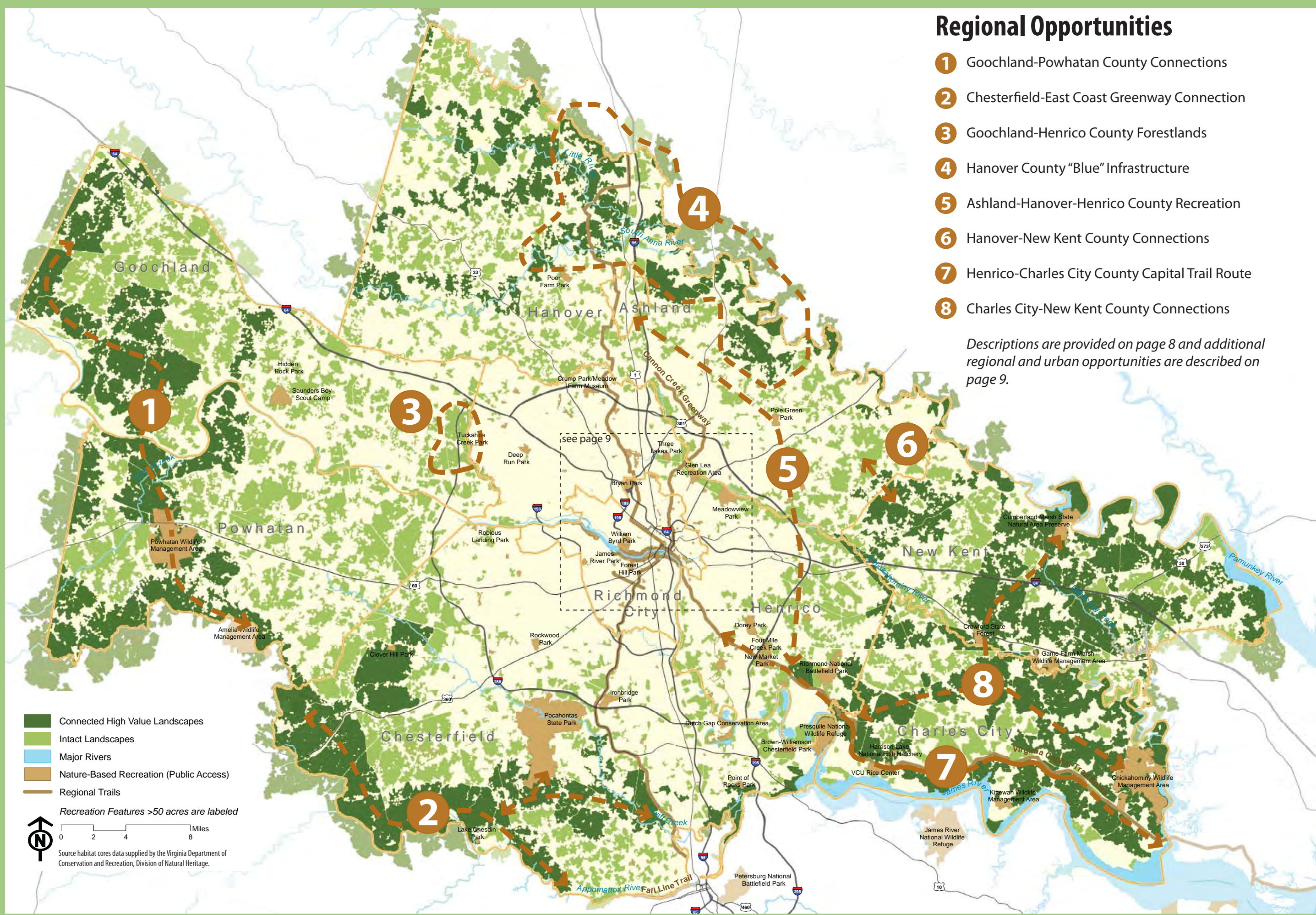
2007

The location, abundance, and status of these resources are changing rapidly.

Source habitat cores data supplied by the Virginia Department of Conservation and Recreation, Division of Natural Heritage and updated by the Richmond Regional Planning District Commission.

# STRATEGIC GREEN INFRASTRUCTURE

a base map for regional planning



## Regional Opportunities

- 1 Goochland-Powhatan County Connections
- 2 Chesterfield-East Coast Greenway Connection
- 3 Goochland-Henrico County Forestlands
- 4 Hanover County "Blue" Infrastructure
- 5 Ashland-Hanover-Henrico County Recreation
- 6 Hanover-New Kent County Connections
- 7 Henrico-Charles City County Capital Trail Route
- 8 Charles City-New Kent County Connections

Descriptions are provided on page 8 and additional regional and urban opportunities are described on page 9.

# OPPORTUNITIES

## from mapping to strategies

Participants used the project’s green infrastructure mapping on the previous page to identify a range of opportunities for cross-locality coordination.

- 1 Goochland-Powhatan County Connections:**  
Opportunity to connect high value cores across public and private lands, including wildlife management areas and conserved lands
- 2 Chesterfield-East Coast Greenway Connection:**  
Opportunity to maintain corridor in southwest Chesterfield County and provide a trail and habitat connection between Pochahontas State Park – Lake Chesdin – East Coast Greenway (this corridor also contributes to the Appomattox River riparian buffer)
- 3 Goochland-Henrico County Forestlands:**  
Coordination opportunity for large intact forest tracts located around Tuckahoe Creek Park
- 4 Hanover-King William-Caroline County “Blue” Infrastructure:**  
Opportunity for coordination with neighboring localities on riparian protection, including public and private lands along the Pamunkey and South Anna rivers
- 5 Ashland-Hanover-Henrico County Recreation:**  
Potential scenic bike route opportunity along Route 76 to Route 5
- 6 Hanover-New Kent County Connections:**  
Connection opportunity through public and private lands located along county borders
- 7 Henrico-Charles City County Capital Trail Route:**  
Route 5 scenic byway and Capital Trail Route provides an opportunity for connecting high-value ecological areas and cultural resources in the area
- 8 Charles City-New Kent County Connections:**  
Opportunity to connect high value cores across public and private lands, including wildlife management areas, state forest, natural areas, and the Pamunkey River

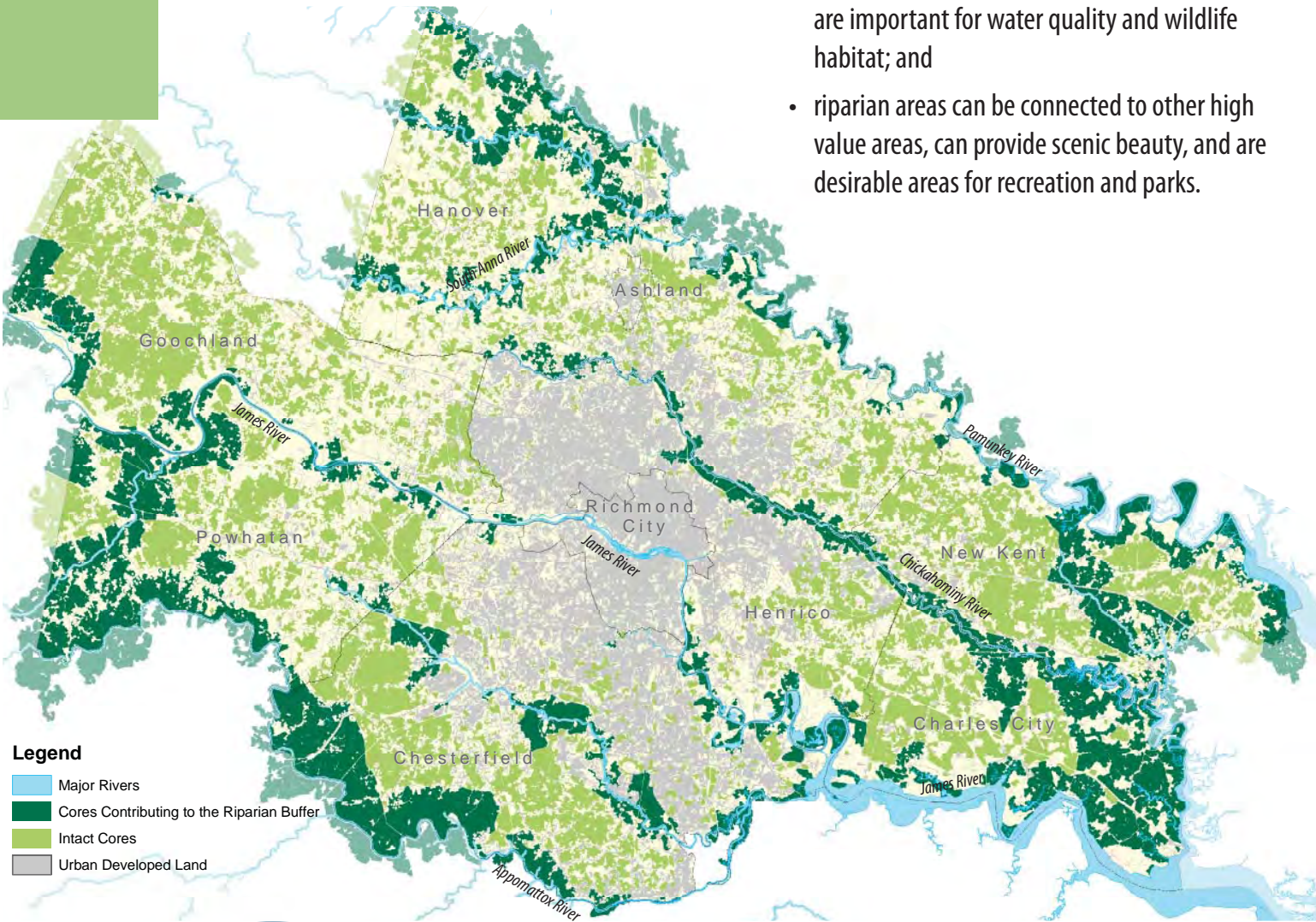


Workshop participants discuss regional opportunities

## Water Resource Opportunities

Participants identified the region’s riparian network as a major asset, and identified cores along the Appomattox River, James River, Pamunkey River, South Anna River and Chickahominy River as primary areas of focus for the future. These rivers and their surrounding areas provide many green infrastructure values:

- buffered streams provide natural corridors and are important for water quality and wildlife habitat; and
- riparian areas can be connected to other high value areas, can provide scenic beauty, and are desirable areas for recreation and parks.



## Urban Connections

While the Richmond Region Green Infrastructure project focused on regional opportunities and connections, the participants also identified opportunities within the urban areas:

- reforest sections of the James River in the City of Richmond as it serves as a major corridor across the region and provides a central hub for regional recreation access
- connect Bryan Park to the James River
- connect Glen Lee Recreation area to the Chickahominy River corridor
- buffer and protect existing birding and wildlife trails



## LESSONS LEARNED

- The project's meetings and March 2009 workshop brought together localities, agencies, and organizations to discuss the Richmond Region's green infrastructure assets. The energy, new ideas, and relationships forged during these meetings illustrates that **inter-locality collaboration is not only possible, but a helpful opportunity for green infrastructure planning activities in the region.**
- Green infrastructure planning provides an opportunity for the Richmond Region to manage growth and development within the context of the region's high-value natural assets. Looking to the future, **green infrastructure planning provides a road map for public and private-sector parties to coordinate projects to maximize economic and environmental outcomes.** Examples might include successful regional heritage tourism programs and intact healthy forest lands for long-term timber management.
- Economic development and green infrastructure planning are not mutually exclusive. **Green infrastructure pays dividends just like schools, roads, and other infrastructure – in the form of healthier communities, new businesses and jobs, and reduced grey infrastructure costs.**
- The success of green infrastructure planning relies on the active involvement and engagement of individual and corporate property owners. **The effective management of green infrastructure assets is the result of many parties working together, using tools that reflect and respect the rights of land owners.**
- **The time is ripe to undertake green infrastructure planning projects in the Richmond Region.** Extensive data are available. Multiple organizations – including the Richmond Regional Planning District Commission, the Capital Region Land Conservancy, and the Green Infrastructure Center – can bring resources and support to projects in the region. Finally, new green infrastructure tools and resources are available from state and federal agencies and non-governmental organizations.
- **New tools and resources are an important part of supporting green infrastructure planning in the Richmond Region.** At the same time, many traditional tools, like Comprehensive Plans and zoning, can also be updated and enhanced to support outcomes that restore, manage, and protect the region's natural assets.
- **Green infrastructure planning tools and resources may be most helpful when implemented at the appropriate time and used in concert with other tools.** Future green infrastructure planning activities in the Richmond Region should consider how multiple tools might work well together. These activities should also consider how the tools can best be implemented over the short and long-term (e.g., during scheduled updates to locality land use or comprehensive rezonings.)
- The Richmond Region Green Infrastructure project has started the process by identifying the region's green infrastructure assets. **Potential next steps could include education and outreach, the continued engagement of diverse stakeholders, and technical assistance and asset mapping at the local level.**

# NEXT STEPS

## opportunities for today...

This project represents the beginning of the Richmond Region's exploration of a green infrastructure approach to regional and local land use planning.

Participants in the project's March 2009 workshop identified several examples of how project information can already be incorporated into planning activities across the region:

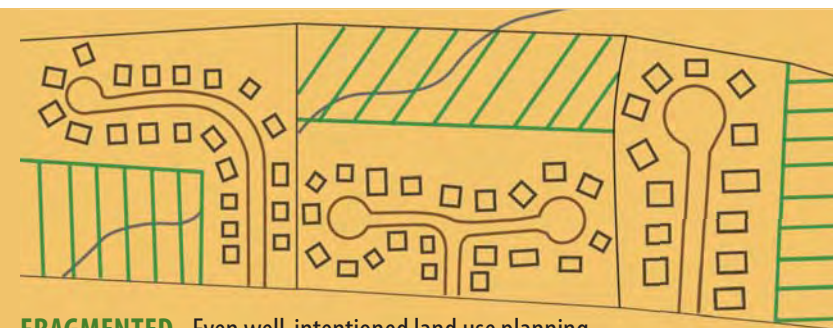
- *comprehensive planning and zoning:* identifying and protecting natural assets
- *park and open space planning:* informing park master planning efforts and acquisition
- *site plan review:* minimizing impacts to natural assets, providing incentives for enhanced natural asset management
- *transportation planning:* coordinating route expansions and alterations
- *water supply and water quality monitoring:* managing and enhancing water supply resources

## and tomorrow...

Looking to the future, the Richmond Region Green Infrastructure project can serve as a reference resource for upcoming planning activities. All parts of the project, including this report and the data used to create the project's maps, are designed to be "living" findings – materials that can be modified and updated over time. The Richmond Regional Planning District Commission (RRPDC) is hosting all information and data gathered as part of the project – the RRPDC will share the materials with all interested organizations upon request.

The RRPDC is also providing an opportunity for localities in the region to build their green infrastructure planning capacities. The RRPDC's four urban localities – the City of Richmond and Henrico, Chesterfield, and Hanover Counties – may choose to work with the RRPDC to develop a local green infrastructure plan as part of the technical assistance provided to one of these localities each year by the Commission. The region's smaller and rural localities, including Goochland, Powhatan, New Kent, and Charles City Counties and the Town of Ashland, may also request these services as part of their annual RRPDC project and grant submittals. A locality-scale pilot green infrastructure project was conducted in New Kent County in 2008-2009. The project approach could be adapted for use by other localities in the Richmond Region.

## INFORMING LAND USE DECISION MAKING



**FRAGMENTED** - Even well-intentioned land use planning approaches can result in the fragmentation of a region's high-value natural assets.



**CONNECTED** - A green infrastructure planning approach allows for development and growth at the same scale, while also ensuring that a region's natural assets remain intact and well-connected.

## THE PROJECT

The Richmond Region Green Infrastructure project was made possible by the energy, dedication, and generosity of many individuals and organizations.

The Richmond Regional Planning District Commission, the Green Infrastructure Center\*, and the Capital Region Land Conservancy would like to thank the project participants who shared their voices as part of this project, as well as the project's sponsors who have made the project possible.

## PROJECT PARTICIPANTS

Charles City County  
Chesterfield County  
City of Richmond  
Goochland County  
Hanover County  
Henrico County  
New Kent County  
Powhatan County  
Prince George County

City of Emporia  
Town of Ashland

Capital Region Land Conservancy  
Chesapeake Bay Alliance  
James River Association

Partnership for Smart Growth  
Richmond Area Bicycling Association  
Southern Environmental Law Center  
Virginia Capital Trail Foundation  
Virginia Conservation Network  
Williamsburg Land Conservancy  
  
National Park Service  
Virginia Department of Conservation and Recreation  
Virginia Department of Forestry  
Virginia Department of Game and Inland Fisheries  
Virginia Office of the Attorney General  
Virginia Outdoors Foundation

## PROJECT SPONSORS

Altria Family of Companies  
Crater Planning District Commission  
Richmond Regional Planning District Commission  
Robins Foundation  
Virginia Environmental Endowment  
Virginia Coastal Zone Management Program



*March 2009 workshop participants*

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*\*E<sup>2</sup> Inc. provided technical analysis, mapping, and research services for this project.*