

Better Models for Development in the Shenandoah Valley 2010



Meeting
21st Century
Challenges



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**Updated and Expanded
by Sara S. Hollberg**

Adapted from the original book by
Edward T. McMahon and Sara S. Hollberg

Valley Conservation Council

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November 2010

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Beyond the Book: Valley Conservation Council welcomes interest in the principles presented in the book. Please contact us for more information on resources and examples. VCC also offers tailored presentations on the principles and direct assistance to landowners interested in conserving their properties.

VCC's Better Models for Development Awards are given to recognize exemplary projects throughout the region. Better Models Award winners and program details can be found on the VCC website.

For more information:

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Purpose of *Better Models*

The Valley is a Special Place

Background

THE SHENANDOAH VALLEY, known worldwide for its beauty and its heritage, has an immensely productive and pleasing natural setting, a compelling history, a strong economy, and neighborly communities. The Valley's attractiveness and its proximity to urban centers make it certain that our population will continue to grow.

Healthy, productive land and water resources, wildlife habitat, parks and open space, culturally and historically significant landscapes, and available and accessible recreation lands are fundamental to the American way of life and our future prosperity.

Great Outdoors America: The Report of the Outdoor Resources Review Group, July 2009

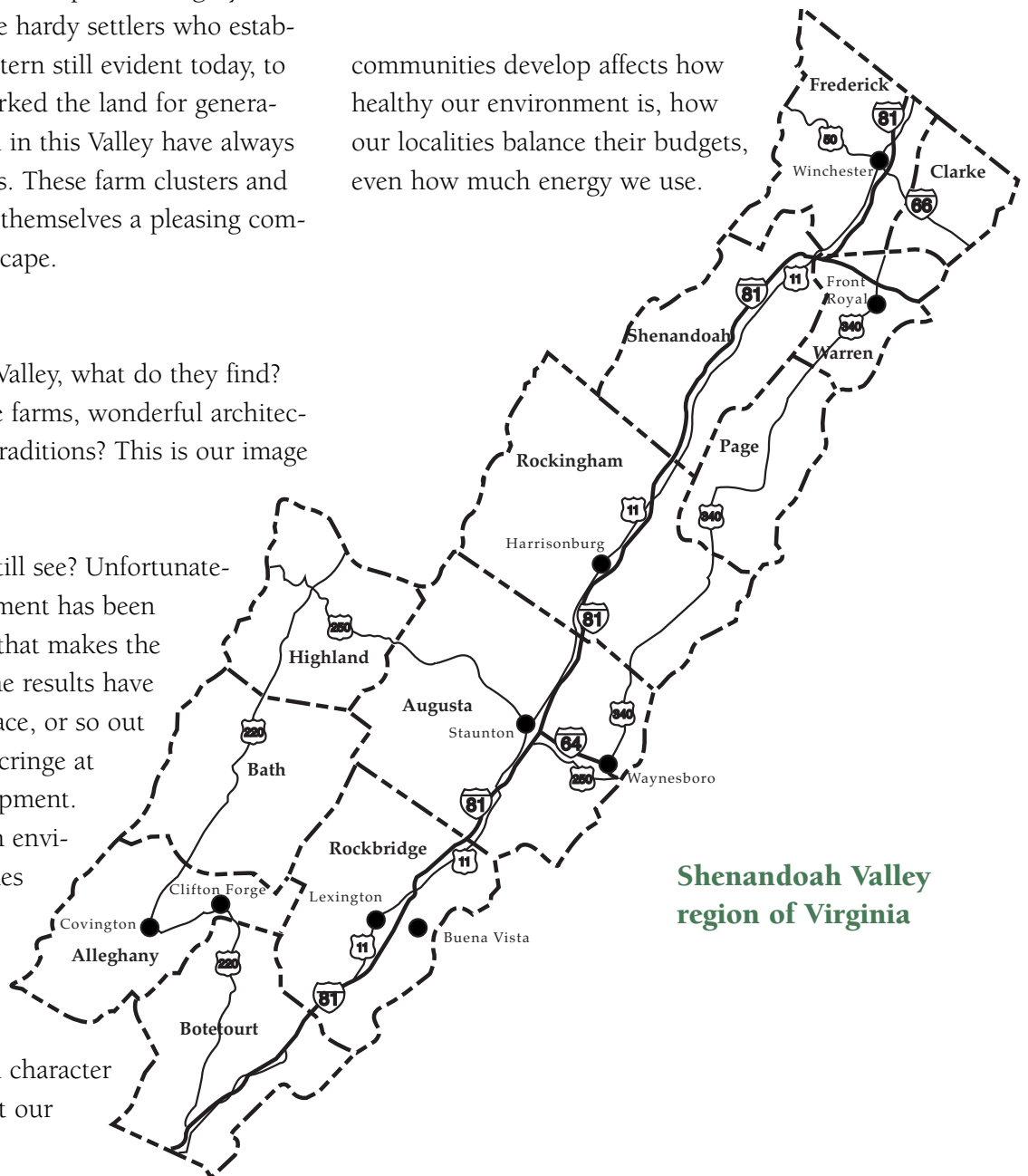
Our ancestors here have left us a priceless legacy. From the Native Americans to the hardy settlers who established the development pattern still evident today, to farm families who have worked the land for generations, those who have lived in this Valley have always recognized its natural assets. These farm clusters and villages and towns became themselves a pleasing complement to the Valley landscape.

communities develop affects how healthy our environment is, how our localities balance their budgets, even how much energy we use.

We're Losing Ground

When people come to the Valley, what do they find? Stunning landscapes, fertile farms, wonderful architecture, historic towns, rural traditions? This is our image of the region.

But is this really what we still see? Unfortunately, haphazard new development has been eroding the very character that makes the Valley special. Too often, the results have been so brash, so out of place, or so out of scale that many citizens cringe at the prospect of new development. They also see the decline in environmental quality that comes with such projects, such as dirty streams, ruined views, denuded ground, and the loss of a sense of place. More is at stake than character and farmland. The way that our



Shenandoah Valley region of Virginia

After the Building Bust, What Next?

With the collapse of housing markets and strapped local budgets, communities are more anxious than ever for economic development. Developers are wary. Financing is tight.

The easiest reaction might be to remove all barriers and standards, in hopes of getting back to development as we know it. Yet the fact is that the recent building patterns have failed us.

Meeting 21st Century Challenges

We will emerge from the recession. Building will begin again. The nation is projected to gain another 120 million people by 2050. The Urban Land Institute estimates that we have not yet built two-thirds of the development that will be on the ground by then. This is a chance to transform our built environment, to get it right for these times.

We are at a pivot point. The recent economic shocks and global shifts signal a changed world. As the next development cycle begins, what shape will it take? What shape should it take? Either we continue the unsustainable and dysfunctional development patterns of the recent past or we forge new ways of building that can help us meet the complex challenges ahead.

Valley communities can find ways to build on their assets without squandering them. It is critical to concentrate on fundamental values that will bring not just short-term economic activity but lasting benefit to the community.

Both developers and communities will have to choose more carefully. A convergence of factors points to a



need for development that is more multi-purpose, cost-efficient, and environmentally sustainable. One pattern that fits the bill is compact, mixed-use neighborhoods that are less dependent on the car. Another is conservation communities which protect farmland while accommodating residential development.

Economics and Environment Can Work Together

DEVELOPMENT does not have to mean destruction of the things that people love. The models presented in this book prove that economic and environmental goals can be compatible. In fact, maintaining our region's natural resources and quality of life should be viewed as a priority for assuring our economic future. Attractive communities have more choices. To sell short our natural and cultural assets would cost more in the long run, socially and economically as well as environmentally. Increasingly, communities across the country are recognizing this link.

“Smart growth is pro-growth. We know that developers, banks, and the entire community rely on growth to fuel the economy. The goal is not to limit growth but to channel it to areas where infrastructure allows growth to be sustained over the long term.”

Hugh McCall, Jr., Former Chairman, Bank of America

It's Our Choice

No place will retain its special character by accident. Successful communities always have a “vision” for the future. Often the communities that have a design-oriented vision are among the most desirable and economically sound in the nation. Maintaining a distinctive local character can pay off.

One developer, for example, happened upon Staunton by chance but was so struck by the vitality of the historic downtown that he now is investing millions to turn the old Western State campus into a compatible mixed-use development.

“Communities can be shaped by choice, or they can be shaped by chance. We can keep on accepting the kind of communities we get, or we can start creating the kind of communities we want.”

Richard Moe, National Trust for Historic Preservation

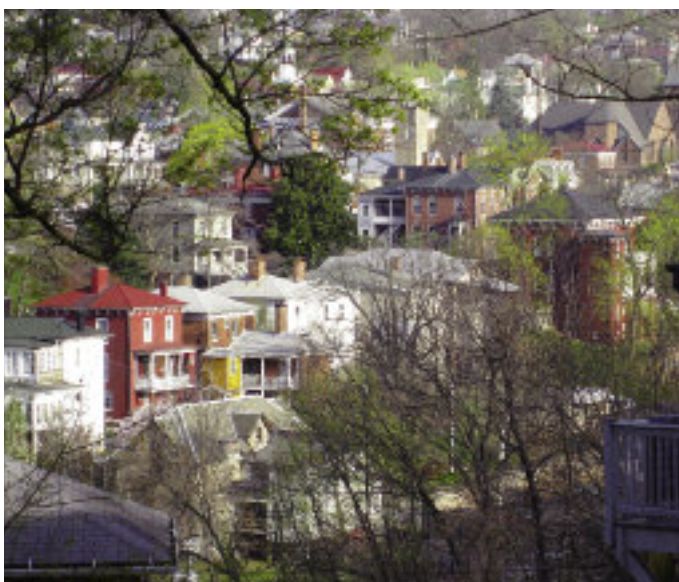
The Economic Value of Open Space

No longer is open space seen as just a community extra or a “frill.” Open space brings clear and strong benefits to a community’s bottom line.

- Open space is a net benefit to community coffers.
- Open space increases nearby property values.
- Open space is a key factor in corporate location decisions.
- Open space protection is smart growth.
- Open space energizes economic development and neighborhood revitalization.
- Open space preservation protects the future of working lands.
- Open space can protect against natural disasters.
- Open space protects natural systems.
- Open space promotes healthy life-styles.
- Open space attracts tourism dollars.

The Shenandoah Valley has the potential to retain its special character, even as it grows. So often, the debate over development is seen as an either-or contest: development or no development, progress or preservation. More useful is to concentrate on “how” and “where” we develop. The three most critical elements are the location, the arrangement, and the design of new development.

We can grow without ruining the special character of our area. It’s a matter of choice. Each community can choose how it develops. If we accept the lowest common denominator in new development, that is what we will get. When we set higher standards, we can achieve higher results.





Using Better Models

Across the nation, across the state, and within the Valley, there are a growing number of examples of “better development.” This book showcases such projects.

The projects featured here were undertaken by individuals of their own accord. At the same time, localities must do more than ever before to enable better development. Desirable results will not happen without a foundation of commitment and readiness. Solid land use planning and a clear community vision—matched with incentives, infrastructure, and well-crafted ordinances—can give developers the confidence to build in a better way.

Better Models should not be seen as a call for more regulation. Rather, it is a call for a more integrated and thoughtful approach to new development.

The goal of this book is to encourage communities and the private sector to achieve true community development, where projects fit into an overall vision that takes into account fiscal, environmental, quality of life, and economic objectives. In fact, the best projects show how much the six principles intertwine and reinforce each other.

These six principles for better development are based on encouraging projects that have lasting value and a positive impact on the community. The best of new

development can be very good indeed. There lies the opportunity and the reason for optimism. The Shenandoah Valley can become not just a beautiful place that reflects what was given to us, but a beautiful place where new development adds to this legacy.

Necessary Elements for Success

- Committing to the goal of preserving the character and assets of our region
- Identifying important natural, scenic, historic, and cultural features
- Making preservation and enhancement of these assets a central part of planning
- Raising the level of expectation for the quality of new development
- Setting effective standards and guidance
- Meeting the needs of both developers and the community
- Paying attention to aesthetics and quality of life
- Providing incentives and flexibility

“Do you want the character of the Shenandoah Valley to shape new development or do you want new development to shape the character of the Valley?”

Edward T. McMahon
Urban Land Institute



Identifying Your Assets: Character of the Shenandoah Valley

LOCATION...location... location. Successful communities know where their assets lie. If the region's character, as expressed through its natural, scenic, and historic assets, is to be safeguarded, the first step is identifying the location of particularly important features. Among these might be historic sites, springs, streams, special habitats, prime agricultural soils, blocks of contiguous forestland, steep slopes, and scenic views.



Recognition is the important first step. Once citizens clarify what they care about, they often will want to find strategies to give these areas protection. Clear values also give direction to elected officials and offer landowners and developers more certainty.

Tools to Use:

Resource Inventories – Specific resources, including natural areas, historic sites, open space, scenic views, prime farmland, and water resources, are identified and mapped. These inventories can be indispensable for planning and for building community awareness.

Visual Preferences – Citizens view images of various types of development and give them negative or positive ratings. Discussion of the results clarifies what makes a development project pleasing or disappointing and helps pinpoint what citizens care most about.

Community Visioning – Citizens and local leaders are led through exercises to help them think ahead to identify what they think the community should be like in the future. This “vision” can then be established as a goal for policy making.

Design Charrettes – Through a community workshop, residents assisted by professional designers,

including landscape architects, urban designers, architects, transportation engineers, or planners, can work to develop solutions to community design problems. For example, a charrette might focus on streetscape design, gateways, a community park, or new residential development.

Visual Simulation – New technologies allow communities to see what proposed development will look like before it occurs. Alternative designs, from shopping centers, road corridors, cell towers, or subdivisions, can be simulated so that communities can evaluate the pros and cons of future development. Such simulations can be accomplished through drawings, models, or computer graphics. For example, Winchester developed an animated representation of what the Berryville Avenue Corridor could look like under the proposed redevelopment plan and posted the video on the City's website.

Buildout Studies – Predicting future development in the community, based on current zoning and other regulations, can help residents evaluate existing development controls. Communities often are surprised to see the extent of development allowed, by right, in their ordinances.

Six Principles for Better Development

1. Conserve Natural and Scenic Assets

The first principle of developing the Valley should be identifying where not to develop. The region's natural and scenic assets can be enjoyed by all—or destroyed by the careless decisions of a few. Successful communities identify the most important natural and scenic resources and develop policies to protect these features. The linchpin of protecting natural areas is to retain the working landscapes, the farms and forests that automatically enhance scenic views, protect natural systems, and contribute to the economic vitality of our communities.

2. Conserve As You Grow

As a community develops, it can conserve the lands necessary to maintain the integrity of its rural landscape, natural systems, and special places. Natural resources are certainly priceless, but the benefits they provide also have significant monetary value. “Growing in, not out” can help keep our communities sustainable both environmentally and fiscally. In fact, investing in “green infrastructure” is just as important as planning for other kinds of infrastructure. Within growth areas, much can be done to design in ways that mitigate environmental impact and protect water quality, farmland, historic sites, and other features.

3. Build Livable Communities

Villages, towns, and cities can absorb most of the growth in the Valley. Creating attractive and livable communities is the essential counterpoint to protecting the rural areas of the Valley. Building livable communities means rejuvenating and extending the traditional cores that are the heart and soul of Valley communities. Opportunities abound to build from within and all local policies can encourage this

focus. Economic realities, health experts, demographic trends, and rising energy costs all point to the advantages of a more efficient style of development: compact, connected, multi-use neighborhoods. Good design can make these places convenient and vibrant, where people of all ages and income can live, work, and play.

4. Preserve Historic Resources

The Valley's rich history is still evident in a wealth of historic and archaeological sites in rural areas as well as in the communities. Using and protecting these settings connects us to our past. Historic preservation also generates jobs and attracts tourists.

5. Respect Local Character in New Construction

The bulk of recent building in America is just plain junk. New buildings can either complement the character of Shenandoah Valley communities or they can turn the Valley into “Anyplace USA.” Communities can do more to ensure that new construction respects local character. The Valley's natural setting, historical development pattern, and architectural traditions make this a distinctive place. Localities can develop standards that make sure new designs fit this character.

6. Reduce the Impact of the Car

Reducing the impact of the car means providing more choices. Greater connections and facilities for walking, biking, and transit make it easy to get around without a car, supporting healthy lifestyles and increasing the independence of young and old alike. Transportation facilities, from roads to bridges, can be designed to be sensitive to their context as well as functional.

Principle 1: CONSERVE NATURAL AND SCENIC ASSETS

Protect Farm and Forest Land



Would you rather see concrete or cows on the Valley's prime farmland?

AGRICULTURE is the Shenandoah Valley's leading industry. In addition, vast areas of the Valley remain in hardwood forest, a renewable resource that fuels the rural economy while providing aesthetic, recreational, and environmental benefits. These working landscapes face many challenges, one of the greatest of which is encroaching suburbanization.

The economic contributions of these farms and forests go far beyond the value of the products they generate. The scenic beauty and quality of life provided by the Valley's working landscapes attract visitors, new resi-



Farmland threatened

"I'm a firm believer that we have to preserve the land that sustains us."

Rockingham County Farmer

dents, and businesses. These open lands also play a key role in sustaining healthy natural systems by providing plant and wildlife habitat, watershed protection, and other benefits.

Farming has been a way of life here for centuries, but fewer and fewer families can make a living solely on farm income. This is a dilemma not just for them but for the community at large. Everyone loves a beautiful rural landscape. What's hard is finding effective ways to support the private open space that provides this quality of life.

Looking to the future, if agriculture is to remain a vital element of the Valley economy, state and local leaders will have to act on opportunities to ensure the long-term economic viability and availability of agricultural lands. We can identify and pursue ways to make it possible and desirable for private landowners to keep their land part of the working landscape.



Farming as a way of life: 4H market animal show and sale, Staunton stockyards

THINGS YOU SHOULD KNOW:

- The Valley contains four of the top five agricultural counties in the state.
- A 2003 survey of Virginia voters found the highest voter support (85–90%) related to preserving Virginia’s rural character and investing in our agricultural, forestry and natural resource-based industries to keep working farms, forests, and open space.
- The Valley is particularly strong in poultry and live-stock production, including beef cattle, sheep, and dairy cows.
- Our climate in the Shenandoah Valley is conducive to rain-fed agriculture, unlike most agricultural regions, which must rely on irrigation or snowmelt.
- Farmers more than pay their way. The American Farmland Trust analyzed the 128 “cost of community services” studies completed in 25 states between 1989 and 2007. On average, farms used only \$0.37 in community services for every \$1.00 paid in taxes. By contrast, residential development received \$1.16 in services for every tax dollar paid.
- In Virginia, farmland requires only \$0.29 cents in services per \$1.00 received in taxes (average of six county studies).
- Virginia lost 650,000 acres of agricultural land between 1997 and 2007—over 7% of its total, according to the U.S. Department of Agriculture.
- A 2006 U.S Forest Service report found that the Chesapeake Bay watershed is losing forestland to development at a rate of 100 acres per day and projects that 9.5 million acres of private forest will experience some development by 2030 (*State of the Chesapeake Forests*, 2006, U.S. Forest Service and The Conservation Fund).
- Virginia could lose one million acres of forest land by the year 2030 noted the Virginia State Forester in 2010.
- More than two-thirds of Virginia’s land is forested, but only half of those lands are likely to remain available for timber production, according to a 1997 Virginia Department of Forestry study.

Economic Impacts of Farming and Forestry

- The economic impact of agriculture and forest industries in Virginia was almost \$79 billion in 2006, according to a Weldon Cooper Center study.
- In addition, the tourism contribution of farming and forestry may reach several billion dollars.



Forest resources add billions of dollars to Virginia’s economy.



Outlets like farmers markets and local restaurants are a small but growing segment of farming commerce.

- Nearly one in five Virginia workers is dependent on agriculture or forestry-related industries.
- Agriculture generated more than \$2.9 billion in cash receipts to farmers in Virginia in 2008. Agricultural receipts topped \$728 million in Rockingham and Augusta counties combined in 2007.

Form Agricultural and Forestal Districts

THE SHENANDOAH VALLEY is the “farm basket” of Virginia. But while in past years the rural nature of the Valley was so self-evident as to not require special agricultural zones, scattered residential and commercial development is making it increasingly important for farmers to form agricultural and forestal districts. Farmers in many Valley localities already have taken this option.

Agricultural and forestal districts are voluntary measures. They are a contract between the local government and property owners spelling out that no new, non-agricultural uses will take place in the district for a specified time.

Property owners in ag and forestal districts commit to keeping their land in farming or forestry for a term of between four and ten years. In return, the locality must consider the district in its local planning and

- Timber is the #3 crop in the state, behind poultry and cattle/dairy. The forest products industry accounts for one in six manufacturing jobs.

1. Conserve Natural and Scenic Assets

- A 2009 study conducted for the National Alliance of Forest Owners found that private working forests in the U.S. generate an average of \$277,000 in gross domestic product (GDP) per 1,000 acres.
- The harvesting, processing, and marketing of timber products adds \$23 billion to Virginia’s economy. Another \$1.5 billion is generated by forest-related wildlife and recreation. (Cooper Center and Virginia Department of Forestry, 2008 report)
- For every \$1.00 received by a timber landowner, an estimated \$64.71 in total value is added to Virginia’s economy (Cooper Center).

zoning. Agricultural districts are temporary, but district status does have an impact. An agricultural district is a powerful image on a land use map, declaring that an area is reserved for farming and is off limits for development. The process of organizing a district and confirming farm use for the foreseeable future can strengthen the farming community. Many districts have renewed now for several decades.

THINGS YOU SHOULD KNOW:

- The Code of Virginia allows all localities in the state to establish agricultural and forestal district programs.
- Agricultural districts range widely in size. Generally, they must contain a minimum of 200 contiguous acres but there is no minimum acreage for each landowner and no maximum on the size of the district. A single property owner can create a district.



Rockland Agricultural and Forestal District, Warren County

- Agricultural and forestal districts are used in 30 Virginia localities and cover more than 684,000 acres of farmland. Nine Valley localities have districts including the counties of Augusta, Clarke, Frederick, Page, Rockbridge, Rockingham, Shenandoah, and Warren, and the City of Staunton.
- The 53 agricultural districts in place in the Shenandoah Valley region covered nearly 136,000 acres in 2009.
- Shenandoah County has 21 agricultural and forestal districts, preserving more than 40,000 acres of farm and forest for ten years at a time.
- Cities and towns can have agricultural districts too. Staunton has four districts.

FOR MORE INFORMATION:

Valley Conservation Council, 17 Barristers Row, Staunton VA 24401 (540.886.3541; www.valleyconservation.org).

“Agricultural and Forestal Districts: Their Use and Applicability Across the Commonwealth,” 2009, Valley Conservation Council (www.valleyconservation.org).

Virginia Office of Farmland Preservation (804.786.1346; www.vdacs.virginia.gov/preservation).

Virginia Department of Forestry (434.977.6555; www.dof.virginia.gov).



Dry River Agricultural and Forestal District, Rockingham County

- Landowners in ag districts may qualify for land use tax rates even if the locality rescinds a land use taxation ordinance.

American Farmland Trust has extensive resources, including *Saving America's Farmland: What Works*, reports such as *Farming on the Edge* and *Sustaining Agriculture in Urbanizing Counties*, and the clearinghouse Farmland Information Center (202.331.7300; www.farmlandinfo.org).

Conservation Communities: Creating Value with Nature, Open Space, and Agriculture, 2010, Urban Land Institute (www.uli.org).

Use Targeted Planning Tools to Protect Farmland

1. Conserve Natural and Scenic Assets

WITHOUT ACTIVE FARMING, there is no chance of retaining the rural landscape that so distinguishes the Shenandoah Valley. Protecting farmland requires not only protecting a sufficient land base but also addressing the many financial and legal stressors on the farming way of life.

One key to long-term farmland preservation is to reduce the development capacity of farmland, while appropriately protecting property rights. An effective strategy must be two-pronged. It must limit the potential for widespread non-agricultural uses in rural areas. At the same time it must have “farmer friendly” ordinances and programs that provide stability and help enable farmers to stay in business. Farmers need a critical mass of farmland, but they also need to maintain the value of their primary asset—their land.

Those localities that have been most successful in farmland preservation employ a comprehensive package, not just one strategy. They combine effective agricultural zoning with purchase or transfer of development rights programs and strictly defined growth boundaries. Many also have agricultural economic development initiatives.

Effective Agricultural Zoning

To be effective, agricultural zoning keeps residential densities low, at a level that relates to viable farm size. This seems to be generally a minimum of about 25 acres per dwelling unit. In Rockingham County’s A-1 zoning (prime farmland and strong farming areas), the residual lot cannot fall below 40 acres. Rappahannock County has a maximum density of 1 dwelling to 25 acres. Lancaster County, Pennsylvania, also has a mini-

“Farmland preservation is critical to urban redevelopment. You need to understand that urban redevelopment won’t work unless your farmland preservation program is working.”

Lancaster County (PA) developer

mum density of 25 acres for its agricultural security areas, with some jurisdictions in the county opting for higher. Fayette County, Kentucky, uses 1 to 40 acres, while Baltimore County, Maryland, has a 50-acre density. At the same time, codes can address allowing business uses that are compatible with farming and other goals for rural areas.

Variations in Agricultural Zoning:

Exclusive Agricultural Zoning - America’s best-known agricultural zoning program is in Oregon, which has a statewide demarcation of exclusive agricultural areas where only uses compatible with farming are permitted. Exclusive agricultural zoning typically protects intensive farm operations from nuisance suits and allows for compatible farm businesses.

Large-Lot Zoning (Not recommended) - Using a large minimum lot size is not recommended as the primary method of reducing farmland conversion. Unless the lot size is set at a viable farm size, the resulting subdivisions merely increase land consumption without saving farmland.

Sliding Scale Zoning - Clarke, Fauquier, and Rockbridge counties use a sliding scale zoning that allows



Farm chopped into large lots

proportionally fewer subdivision rights as parcel size increases. This protects the right to make at least some parcel divisions while forestalling large-scale subdivision of rural tracts.

Maximum Lot Size - Clarke County also sets a maximum lot size (2 acres) for dwellings placed on prime farmland.

Lot Averaging (Base Density) - Decoupling the overall density from the actual lot size provides advantages of flexibility and the possibility of keeping at least some farm-sized parcels. As an example, a base density of one dwelling right per 20 acres would yield 5 lots for a 100-acre parcel. Lot sizes could vary widely from a minimum (such as 2 acres) up to a major farmstead lot.

Mandatory Open Space Requirements - Fauquier County requires that developments in agricultural zones retain 85 percent of the tract in permanent open space. Contact: Fauquier County Planning Division, 540.347.8660; www.fauquiercounty.gov.

Time-Release Subdivision - Some localities restrict how often a property owner can divide a parcel in the agricultural zones. This gives owners the ability to sell lots over time, but greatly reduces developer interest because it would take too long to divide and sell an entire farm. The largest agricultural counties in the region use this strategy.

Purchase of Development Rights (PDRs)

PDR programs pay willing landowners for all or part of the value they give up by putting a conservation easement on their land. Most mid-Atlantic states have PDR programs. At the local level, Lancaster County, Pennsylvania, has the most successful PDR program in the country, with more than 85,000 acres preserved. The program enjoys overwhelming citizen support (85% in a recent poll) and succeeds largely because of the strong coordination between farm preservation programs and the clear designation of growth areas, as well as the leveraging of other funding.



PDR example in the Valley: This exceptionally fertile Rockingham County farm (70% prime soils) qualified for a partial easement purchase through USDA. As the award-winning farmer winds down her tenure, she wanted to assure the future of the farm.

In Virginia, 21 counties have PDR programs, although not all are funded or have completed projects. Rockbridge, Warren, Shenandoah, and Frederick counties have adopted programs in recent years.

Localities determine their own program priorities and policies. **Virginia Beach's** Agricultural Reserve Program has preserved nearly 8,000 acres. Even paying market value for easements, this voluntary program costs the city less than half the capital expenses that would be required if the land were built out at current zoning. (Contact: Agricultural Reserve Program Coordinator, Virginia Beach Agriculture Department, 757.358.8886; www.vbgov.com.) **Albemarle County's** Acquisition of Conservation Easements (ACE) program prioritizes funding toward lower income landowners. It protected over 5,000 acres in its first six years. (Contact: Coordinator, ACE Program, 434.296.5823) Fauquier County's PDR program pays a set amount per development right. As of 2008, the program had preserved 21 farms containing 4,310 acres. (Contact: Fauquier County Department of Agricultural Development, 540.349.5314, www.fauquiercounty.gov).

Transfer of Development Rights (TDRs)

TDRs enable the transfer of development rights from one parcel (in a defined "sending area" where the

1. Conserve Natural and Scenic Assets

locality does not want much development) to another parcel (in a defined “receiving area” where development is encouraged). The result: the farmland is protected, the farmer receives needed income, and the developer is cleared to build where the locality wants development. Implementation, however, can be quite complex. Of the approximately 140 programs in the nation, Montgomery County, Maryland, has been the most successful, preserving over 51,000 acres.

Virginia recently enabled localities to use TDRs. Frederick County adopted a TDR program in 2010, the first in the region. The Northern Shenandoah Valley Regional Commission (540.636-8800) is providing education and training to other localities interested in TDR programs. A Model Transfer of Development Rights Ordinance for Virginia Localities (2010) is available from the Virginia Office of Farmland Preservation (804.786.1346).

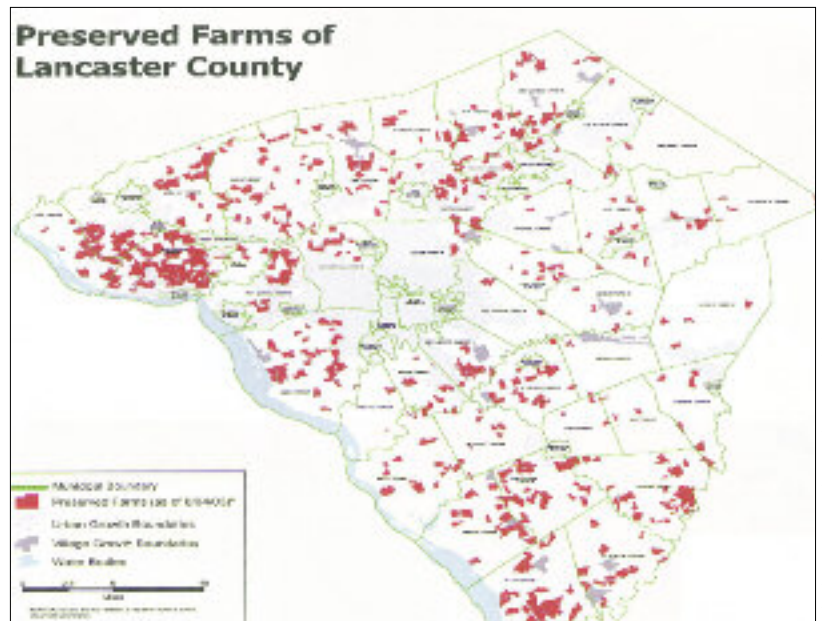
Statewide Efforts

Many states have programs designed to protect farmland.

Maryland’s extensive farmland protection programs have permanently protected hundreds of thousands of acres. The state’s PDR program is funded by real estate transfer taxes and by taxes assessed on agricultural land converted to non-agricultural uses. The state provides incentives for county farmland protection programs. Maryland’s Rural Legacy Program uses bonds to purchase easements on agricultural lands that also have important natural and cultural resource values. Every Maryland county has a farmland preservation program.

Pennsylvania also has a long-standing statewide PDR program that provides funding for state, county, and local governments to purchase easements. Of the state’s 67 counties, 57 participate in the Farmland Preservation Program.

In **Virginia**, the Virginia Office of Farmland Preservation, established in 2001, coordinates a statewide purchase of development rights (PDR) program, assists with agricultural and forestal districts, and oversees the Virginia Farm Link program to match prospective farmers with farmland. Virginia’s PDR program provides matching funds for local PDR programs and even with very limited funding has encouraged more localities to establish programs (804.786.1346; www.vdacs.virginia.gov/preservation). The Virginia Department of Forestry likewise encourages and can hold forestland conservation easements that include sustainable forest management as a goal (434.977.6555; www.dof.virginia.gov/conserve).



In Lancaster County, Pennsylvania, more than 1,000 farms (red) and 85,000 acres have been preserved through county and private land trust PDR programs

Use Conservation Easements



As a landowner, what legacy would you like to leave? You can develop your land, or you can choose to permanently shield it from development. The land on the right has a conservation easement and will never be developed.

CONSERVATION EASEMENTS are increasingly popular. Throughout the region, landowners for a variety of personal reasons have chosen this legal tool to protect farmland, forest land, riparian zones, natural areas, and historic sites.

For property owners who care deeply about the special qualities of their land, a conservation easement enables them to ensure protection of these values long after they are gone. Conservation easements are voluntary. Placing an easement on one property often spurs neighbors to do the same, making easements a particularly effective way to safeguard farming areas.

A conservation easement sets limits on how a property can be developed. The landowner retains all ownership and property rights except those specific rights stated in the easement. In the typical conservation easement, the landowner gives up the right to develop the land beyond certain low densities. The easement binds future landowners to the same conditions.

Each easement is tailored to the particular property and to the needs of the landowner. An easement can be used for any type of property that has conservation values. Types of resources that can be protected by easements include farmland, forest land, riparian areas, special habitats, scenic open space, and historic sites.

“With an easement you don’t give up anything you would reasonably want to do...There are not many things that you can do that will still make a difference not just a year from now, but in 100 years, but this really does.”

Augusta County Easement Donor

Landowner Benefits of Conservation Easements:

- Permanent protection, ensuring the current owner that the property will remain largely undeveloped after their tenure ends
- Continued private ownership with little or no change in the way the land is used
- Each easement can be tailored to fit the desires of the property owner and unique nature of the property
- Lower taxes, including reduced state and federal income tax, estate taxes, and capital gains taxes, and potentially lower property taxes
- Virginia offers a “transferable” tax credit that can be sold for cash.

1. Conserve Natural and Scenic Assets

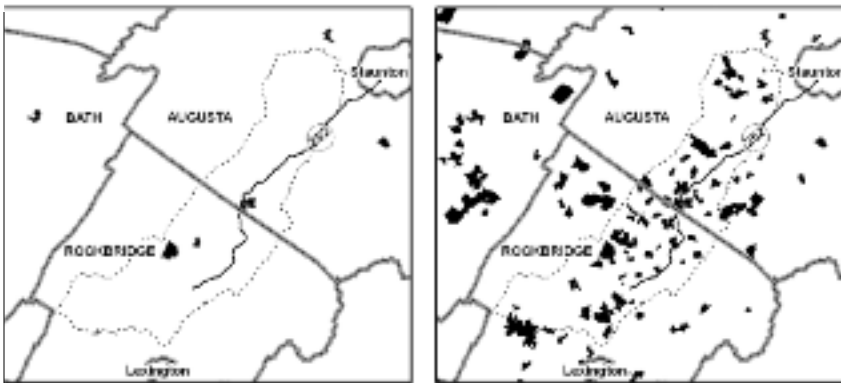
“Private stewardship over the past 20 years has become a major, entrepreneurial force in protecting land and water resources through the use of conservation easements, tax credits, multiple sources of funding, and other measures.”

Great Outdoors America: The Report of the Outdoor Resources Review Group, July 2009

THINGS YOU SHOULD KNOW:

- More than 37 million acres of land have been protected nationwide by local and regional land trusts. Conservation easements protect close to 600,000 acres in Virginia.
- In the Shenandoah Valley region, conservation easements cover more than 135,000 acres. The counties with the most acres under easement are Rockbridge, Bath, Augusta, and Clarke.
- The federal tax code considers the donation of a qualifying permanent easement to be a charitable contribution, the value of which is tax deductible. Estate and local property taxes may also be substantially reduced.
- The Commonwealth of Virginia offers a transferable state income tax credit for easement donations. The tax credits can be sold, enabling landowners of all income levels to use the incentive.
- Property under conservation easement automatically qualifies for land-use tax rates where available.
- Conservation easements do not require public access.
- To qualify for state and federal tax advantages, an easement must be permanent and provide a public benefit by protecting legitimate resources.

Middlebrook Corridor Sees Growth in Easements, Not in Development



Easements with Virginia Outdoors Foundation, 1997 and 2007

When VCC published *Middlebrook-Brownsburg Corridor: A Study of Natural and Cultural Resources*, there were few protected resources in this beautiful and intact agricultural landscape straddling Augusta and Rockbridge counties. Ten years later, the number of acres under conservation easement had increased nearly tenfold, from 1,776 acres in 1997 to 16,947 acres in 2007.

FOR MORE INFORMATION:

Valley Conservation Council in Staunton can help interested landowners find out more about how easements work, determine whether the tool is right for them, and put them in touch with appropriate agencies (540.886.3541; www.valleyconservation.org).

Land Trust Alliance, 1660 L Street, NW, Suite 1100, Washington, DC 20036 (202.638.4725; www.landtrustalliance.org).

Virginia Outdoors Foundation (www.virginiaoutdoorsfoundation.org).

Preserve Scenic Views and Settings



Would you prefer to see views that look like this?

SUCCESSFUL COMMUNITIES always strive for development that is not only fiscally and environmentally sound, but visually pleasing as well. Protecting scenic views and areas is an increasingly important goal and not just for aesthetic reasons. From coast to coast, communities see visual resources as an integral part of their economic well being. In fact, you can put a dollar value on a view. Scenic landscapes are an asset not just because we think they are nice but because other people are willing to pay to see the view and to experience the unique character of a place.

Visually attractive areas can be found the length of the Shenandoah Valley. Some, such as the Skyline Drive and Blue Ridge Parkway, are national, even international in renown. Others are important only to local residents. All contribute to the economic vitality and outstanding scenic quality of the Shenandoah Valley.

Unfortunately, unsightly development projects are eroding the scenic beauty of the Valley. Some, such as power plants and interstate transmission lines, are so large scale that the major decisions will be made at the federal and state level. However, local officials can influence the design and siting of these facilities through local land use controls as well as participation in state and federal review procedures.



Or views that look like this?

Unquestionably, though, for the bulk of development proposed—housing, shopping centers, office parks, truck stops, and the like—the decision rests almost exclusively with local government. Here cities, towns, and counties can take positive action to protect the scenic qualities that are a source of community pride and that enhance local economies. A variety of measures can be taken to protect visual resources:

- Controlling the size, height, and number of outdoor signs
- Prohibiting the construction of new off-premise billboards
- Co-locating or disguising cellular communication towers
- Discouraging ridge-top development
- Placing utility wires underground
- Placing conservation easements on scenic properties
- Designating Virginia Scenic Byways
- Designating Scenic Rivers

THINGS YOU SHOULD KNOW:

- Numerous studies show that housing, hotels, and offices with scenic views command premium prices. The better the view, the higher the price.
- Over 96% of visitors to the Blue Ridge Parkway ranked the scenic drive and scenic views as the

1. Conserve Natural and Scenic Assets



Jump Mountain, a Rockbridge County landmark, and four adjoining farms are protected by conservation easements.

ated for their scenic importance. That includes ridges surrounding Burkes Garden, the largest rural historic district in the state.

FOR ADDITIONAL INFORMATION:

“Design and Aesthetics” reprint package, *Planning Commissioners Journal* (www.plannersweb.com).

Scenic America, 1250 I Street NW, Suite 750-A, Washington, DC 20005 (202.638.0550; www.scenic.org).

Scenic Virginia, 4 East Main Street, Suite 2A, Richmond, VA 23219 (804.643.VIEW; www.scenicvirginia.org).

Virginia Outdoors Plan 2007, Virginia Department of Conservation and Recreation (804.786.5046; www.dcr.virginia.gov).

most important of the park’s attributes and resources.

- Interstate 81 from the I-66 interchange to the Tennessee border is a AAA Scenic Byway designated by the American Automobile Association.
- The 2000 President’s Commission on Americans Outdoors also found that “natural beauty” was the single most important factor in Americans’ choice of places to visit for outdoor recreation.
- Williamsburg prohibits billboards and has tight sign controls because it knows that scenic quality is critical to tourism success. Even sites near the interstate do not have tall signs.
- After Vermont prohibited billboards, the Chamber of Commerce reported that tourism went up for all businesses, big and small.
- Dozens of communities and at least two states—North Carolina and South Carolina—have enabled laws to restrict the height of buildings constructed on mountain ridges.
- Wind turbines bring a new challenge for mountain vistas. Industrial wind turbines can be up to 400 feet high.
- Tazewell County, Virginia, adopted an ordinance in 2010 prohibiting the construction of structures taller than 40 feet along protected ridgelines design-

Opportunities for Scenic Designations

PLEASING SCENERY is one of the most distinguishing features of the Shenandoah Valley. Many different programs are offered to recognize outstanding scenic places, whether water bodies, roads, or landscapes. Here are some examples:

- Virginia Byways are roads that provide important scenic values and lead to or lie within areas of his-

torical, natural, or recreational significance. Designation does not bring any regulations but can encourage local governments to adopt land use measures to protect these resources.

- The VCC region contains more than a quarter of the miles in the state that are designated Virginia Byways. Shenandoah, Alleghany, Botetourt, and



Upper James River Water Trail, Botetourt County



Scenic road, Clarke County

Clarke counties have made concerted efforts to designate roads.

- Shenandoah County has a network of more than 150 miles of designated Virginia Byways.
- The Virginia Scenic River designation recognizes rivers and streams that possess outstanding scenic, recreational, historic, and natural characteristics.

Even at this rigorous standard, almost all of the counties in the Valley region have stream sections that have been found eligible or potentially eligible.

- In the VCC region, the James River in Botetourt County and the St. Mary's River in Augusta County have been designated Scenic Rivers. Part of the North Fork of the Shenandoah River has been qualified but not designated.
- The Upper James River Water Trail was created by Botetourt County to encourage residents and visitors to experience the beauty and history of this natural treasure, 14 miles of which are designated as a Virginia Scenic River.
- Alleghany County is developing the Jackson River Scenic Trail, a hiking and biking trail along a 14-mile rail corridor from Intervale to the county line with Bath County.

Protect Riparian Areas and Special Habitats

1. Conserve Natural and Scenic Assets



Which stream management is better for fish, people, and downstream users?
(Before and after riparian fencing and forest buffer planting in Augusta County)

LAND ALONG RIVERS AND STREAMS is important for many reasons. Protecting these fragile riparian areas offers the biggest bang for the buck, both for the natural environment and often for human enjoyment as well. One of the most stubborn problems is pollution carried into streams from adjoining land.

Riparian areas include floodplains, wetlands, and stream banks. In the Valley region, water courses are abundant. Small, swift creeks flow off the mountains, becoming larger streams meandering through the rolling terrain of the Valley floor, and eventually joining the powerful Shenandoah or James rivers.

Trees, shrubs, and grasses stabilize stream banks and help reduce flooding. Protected riparian areas also help intercept pollutants and sediment that otherwise would be carried into the stream. Erosion and runoff cost money in lost soil and in pollution clean-up. Protection of riparian vegetation is a simple, cost-effective way to save money and protect water quality in the long run.

In the Valley, we're not downstream. The Shenandoah Valley contains the headwaters of two of the largest river systems in Virginia. This means that the quality

of water flowing out of the Valley depends wholly on us. Look at the before and after pictures on this page. Clearly the restored streambed on the right will now send much less soil and pollution downstream.

THINGS YOU SHOULD KNOW:

- "Fish grow on trees." Forested areas next to rivers and streams provide a buffer that protects water quality and aquatic habitat.
- Pollution is carried into streams from agricultural operations and increasingly from developed areas.
- The Shenandoah Valley region is part of the Chesapeake Bay watershed.
- Forest cover is the best land use for water quality protection. Forested riparian buffers can remove 95% of sediment, 80% of nitrogen, and 78% of phosphorus. They also maintain the cool temperatures many species need.
- Virginia missed its 2010 clean up goals for reducing pollution into the Chesapeake Bay, so redoubled efforts will be required. In 2009 the EPA began in

earnest to put the Bay on a nutrient and sediment “pollution diet” such that it could eventually meet state water quality goals.

- The Valley region is the worst in the state for having little or no riparian buffer along most streams. It has 14% of the state’s land area but 39% of the polluted stream miles.
- Some localities, including Albemarle County and the City of Staunton, require stream buffers when properties are developed.
- The 2007 Forest Conservation Initiative has set a goal of restoring 900 miles of riparian forest buffer a year until 70 percent of stream miles in the Bay watershed are buffered.
- The Virginia General Assembly defines wetlands and riparian buffers as special classifications of real estate that qualify for local tax exemption, if protected by a perpetual easement.
- In Harrisonburg, an innovative stream restoration project on a stretch of Blacks Run flowing through Purcell Park added meanders, smoothed stream-banks, and planted thousands of trees to enhance water quality.
- In Bridgewater, when land is developed, the Town encourages donation of flood plain areas. The nearly

13 acres received this way are maintained as parks and arboretum, minimizing the damage during floods.

- New riparian plantings have been established on more than 300 miles of stream bank in Augusta County as of 2009, the most of any county in the state.

HABITAT

- Virginia ranks in the top 10 among all states in globally rare plants and animals.
- A high proportion of the state’s natural heritage sites are in the Valley region and nearly a third of the region’s sites rank “very high” or “outstanding” in significance. Augusta County has the greatest concentration of rare species in the state.
- South River Preserve in Augusta County protects a diverse assemblage of rare species. Owned by The Nature Conservancy, it was created by the donation



South River Preserve, Augusta County

Blacks Run before (left) and with curves (right)



1. Conserve Natural and Scenic Assets



Newly planted buffer, Poague Run in Staunton



Birdwatching at Marl Creek natural area, Rockbridge County



© PAT AND CHUCK BLACKLEY

The Valley's main riparian corridor, the Shenandoah (Seven Bends near Woodstock)

of land from a local industry and the purchase of another parcel.

- Nature-based activities, particularly viewing, studying, and photographing birds and wildlife, have grown in popularity.

FOR MORE INFORMATION:

Local offices of the Natural Resources Conservation Service, U.S. Department of Agriculture; Harrisonburg regional office (540.433.2853, ext 3; www.va.nrcs.usda.gov).

Local offices of the Virginia Department of Forestry (www.dof.virginia.gov).

- Landowners along Poague Run in Staunton have planned riparian buffers for water quality. The project also will reintroduce trout and provide specialized habitat for quail.

Virginia Department of Conservation and Recreation, Staunton Regional Office (540.332.9991; www.dcr.virginia.gov).

Valley Conservation Council, 17 Barristers Row, Staunton, VA 24401 (540.886.3541; www.valleyconservation.org).

Plant and Preserve Trees



Which street would you rather live on? Which street has higher property values?
Which street has lower utility bills?

THE SHENANDOAH VALLEY is a green and leafy place. However, the trees and woodlands that help give the Valley its special sense of place are slowly disappearing. Invasive pests, old age, careless cutting, utility companies, highway widening, and new development all combine to rob the Valley of its age-old trees.

THINGS YOU SHOULD KNOW:

- Trees are good for business. According to the National Association of Home Builders, developed lots with trees sell for an average of 20 to 30 percent more than similar lots without trees. Mature trees that are preserved during development add more value to a lot than post-construction landscaping. Tree planting and preservation pay off not only on upscale properties, but also on small, inexpensive lots.
- Saving and relocating 3,000 mature trees on the site of the University of Virginia's research park cost 50 percent less than removing the trees and planting new ones—plus there was no wait for the saplings to grow.
- Trees are also good for the environment. Trees lower cooling costs. For homeowners, utility bills will go up when trees go down.

- Trees play a major role in slowing soil erosion and stormwater runoff. A typical city block produces nine times more runoff than a forested area of the same size.
- The Chesapeake Bay Program reports that the region lost 439,080 acres of tree canopy between 1984 and 2006. The Chesapeake Bay Council in 2007 set a goal of protecting an additional 695,000 acres of forest from conversion to other land uses, targeting forests of highest water quality value.
- “Tree canopy goals” recognize the value that can be gained in avoiding stormwater costs, preventing air



Preserved pecan trees make an elegant oasis in the commercial heart of Newtown, Williamsburg.



The tree in the middle begins the next generation of shade trees at Mary Baldwin College.



Majestic trees, carefully preserved during construction, shade the swimming pool of the Hampton Inn in Lexington.

and water pollution, and making attractive living environments. The City of Roanoke adopted a 40% tree canopy goal in its comprehensive plan after a

FOR MORE INFORMATION:

Planning the Urban Forest: Ecology, Economy, and Community Development, 2009, American Planning Association, PAS Report 555 (www.APAPanningBooks.com).

Tools for assessing community urban forest and tree resources include i-Tree suite of software tools (USDA, www.itreetools.org); Casey Trees tree benefits calculator (www.caseytrees.org), and CITYgreen software for analyzing land cover and ecosystem benefits (American Forests; www.americanforests.org).

study showed its current canopy already provides a stormwater retention capacity worth \$128 million.

1. Conserve Natural and Scenic Assets

- The Frederick County, Maryland, school district adopted a goal of increasing tree canopy from 12% to 20%.
- CITYgreen software was used in Staunton to analyze land cover, run scenarios, and calculate dollar benefits for the services provided by trees and other green space. Staunton has a 41% tree canopy.

What Valley Communities Can Do:

- Plant more trees, especially along roads and riparian areas
- Promote the protection of existing trees, particularly during development
- Encourage or require the landscaping of parking lots and commercial areas
- Become a designated Tree City USA through the National Arbor Day Foundation
- Support strong horticultural and urban forestry programs
- Set a tree canopy goal
- Encourage stream buffers when a property is developed
- Recognize individuals and companies who take the lead in planting and protecting trees

Virginia Department of Forestry (434.977.6555; www.dof.virginia.gov).

National Arbor Day Foundation (www.arborday.org).

Piedmont Community Tree Guide, 2006, USDA Forest Service technical report PSW-GTR-200 (www.fs.fed.us).

Also see Chapter 2 for more ways that trees fit into better development strategies.

Principle 2: CONSERVE AS YOU GROW

Conserve Well, Develop Well

Incorporating conservation into development plans helps us protect the natural environment and at the same time create a more functional and enjoyable human environment. We can conserve as we grow.



Standard development (left) overrides natural features, requiring massive facilities to handle stormwater. By contrast (right), development can weave distinctive living and community space in with stormwater facilities like this vegetated bioretention basin (Newtown, Williamsburg).

AS A COMMUNITY DEVELOPS, it can conserve lands to help maintain the integrity of its rural areas, natural systems, and special places. These conserved areas will become increasingly invaluable over the long run. Planning for conservation recognizes that people as well as nature need the things that only undeveloped land can supply, like clean air and water, affordable stormwater and flood control, farm and forest products, recreation, and the scenic and cultural treasures that define our region and renew the spirit. It makes sense to conserve strategic locations that can deliver these values and safeguard them for the future.

Conserve well, build well sets a double goal of developing very well in suitable locations and conserving very well in areas that provide other essential values. The key is identifying and being clear on these values

“Ultimately, the best way to preserve natural habitats is through the excellent design of human habitat.”

Smart Growth America,
Choosing Our Community's Future

so that the community recognizes and supports their protection. Just as development can be done well, so should conservation.

Good conservation planning is an investment. Investing in conservation is investing in the long-term health of our communities. That investment value is compounded because conserved land underpins related efforts like keeping the agricultural sector viable, providing services efficiently, maintaining local character as the base for tourism, and offering opportunities for recreation.

Conservation pays. There are many reasons to conserve open space, many of them economic. In particular are the specific “ecosystem services,” or benefits that people obtain from healthy ecosystems. These benefits are priceless in many ways, but also have a dollar value that can be recognized in evaluating projects and setting policies.

“Conserve well, build well” means reinforcing the distinctive values that can be provided by conservation on the one hand and by well-designed development on the other. Conserving well involves identifying locations with important values (such as scenic, natural habitat, flood control, prime farmland, urban forest, streamside areas) and protecting those values. Developing well involves making the most of areas that are well suited to development, by using land and resources efficiently and by using designs that enhance quality of life. The aim is to avoid the middle ground, a characterless blob that so often overrides both natural features and distinct places. Maintaining a clear edge between town and countryside is one way of expressing this concept. Even within a single development project, decisions can be made to conserve features of the site, often in ways that add value overall.

Planning for conservation works at all scales. Three different scales are discussed in this chapter.

2. Conserve As You Grow

- **Landscape Scale** – Maintaining a clear edge between town and countryside can help buffer rural areas from development pressure and encourage better development in growth areas. Reducing sprawl or “growing in, not out” is the key to retaining the region’s agricultural and natural heritage. More broadly, maintaining a clear edge can be understood as enhancing the complementary values of natural and built areas.
- **Community Scale** – Using “green infrastructure” concepts to identify strategic conservation resources can lead to growth policies and plans that protect special places and are sustainable fiscally and environmentally.
- **Site Scale** – Designing individual projects to protect natural function (“environmental site design”) goes a long way to avoiding the cumulative impacts that can damage the environment. Likewise, open space development design offers the opportunity to cluster development on just part of a site and leave protected other features, such as prime farmland, forest, stream zones, or historic structures.

Maintain a Clear Edge Between Town and Countryside



What will the Shenandoah Valley look like in 20 years? Like the illustration above, if current development trends continue. On the next page is an alternative pattern for accommodating the same amount of growth.

TO MAINTAIN THE CHARACTER of the Valley as we develop, the single most important principle might be to keep the rural areas rural while encouraging development in the villages, towns, and cities. In other words—grow in, not out.

As a healthy, growing region, we will welcome many new neighbors and enterprises in the coming years. How we do this will help determine the quality of life for all of us and for future generations.

The choice is clear from the accompanying illustrations. Unchecked, the conventional pattern of develop-

ment will make our beautiful Shenandoah Valley a featureless blur that is neither town nor country.

The alternative is to direct growth into cohesive communities, small and large, and to shape the scale and design of growth in rural areas so that it fits the rural setting. A more compact pattern can accommodate the same amount of growth to the benefit of both town and countryside.

Illustrations from *Landscapes: Managing Change in Chester County 1996-2020*, Comprehensive Planning Element, 1996. Reprinted with permission of the Chester County Planning Commission, West Chester, PA.

Communities throughout the Valley have come to the same conclusion. Without exception, county comprehensive plans express a desire to maintain rural character and to channel growth into planned service areas. At the same time, cities and towns are seeking ways to encourage growth within their borders.

Directing growth, however, is one of the toughest planning challenges in the nation. The lure of green fields and open roads is hard to combat. Yet no rural protection strategy can work unless people find livable and desirable places to live in the areas designated for growth.

The Grow In, Grow Out Quiz:

For each proposed building project, the following questions can be asked:

- Is the location appropriate?
- Does it help maintain a clear edge between town and rural?
- Is the scale appropriate?

- Does the siting respect the landscape?
- Does building design reflect local character and traditions?

2. Conserve As You Grow

Economic Advantages of Curtailing Sprawl:

- Lower service costs for local government
- Full use of the investment in existing water, sewer, and other infrastructure
- Potential to plan efficient expansion of services
- Delay or avoidance of new infrastructure investment
- Lower per unit costs
- Less money spent on transportation
- Less time spent in cars
- Less money spent on roads
- Opportunity for heritage tourism
- Potential to attract higher-caliber employers
- Helps keep farm and forest land in production



Apply Smart Growth Principles



Sprawl of the kind that has taken up much of the Valley landscape (left) can be contrasted with compact development that meets a range of community goals, such as this infill in Crozet (right).

FOR DECADES, citizens and communities have decried “sprawl,” sensing that our typical way of developing is not good in the long run—financially, environmentally, or for quality of life. Their concern is over the pattern of growth, not growth itself. “Smart growth” is driven by a wide range of issues, among them cost of services, demographic shifts, environmental protection, time spent commuting, affordable housing, health, and transportation challenges.

The 2008 housing and credit bust brought many of these issues into clearer focus, especially as it hit hardest on those who overstretched their finances and their commutes to purchase houses ever farther out. The severe economic downturn in combination with other trends may well signal big shifts in thinking, shifts that will affect development. It is unlikely that resuming the same sprawling pattern will work well in the

“We’re all paying a staggering price for sprawling development in this country, and that price will only go up as gas prices increase.”

Robert Burchell, Center for Urban Policy Research at Rutgers University, in *Sprawl Costs: Economic Impacts of Unchecked Development* (2005)

future. For the first time since World War II, there may not be as much perceived benefit in pursuing undeveloped “green field” sites.

How should local communities and local developers adjust? Strategies that fit under “smart growth” can help. New urbanism, green infrastructure planning, and environmental site design each address a particular need. Taken together they can provide the basis for long-term community sustainability and health.

Smart growth favors reinvesting in existing communities. It attempts to provide a greater mix of housing and commercial uses and transportation options, while also protecting open space and environmental assets. New urbanism and environmental site design fit within the smart growth umbrella.

Smart Growth Principles:

- Create range of housing opportunities and choices
- Create walkable neighborhoods
- Encourage community and stakeholder collaboration
- Foster distinctive, attractive communities with a strong sense of place
- Make development decisions predictable, fair and cost effective

- Mix land uses
- Preserve open space, farmland, natural beauty and critical environmental areas
- Provide a variety of transportation choices
- Strengthen and direct development toward existing communities
- Take advantage of compact building design

(Smart Growth Network www.smartgrowth.org)

“Smart growth is growth that is economically sound, environmentally friendly and supportive of community livability—growth that enhances our quality of life.”

J. Ronald Terwillinger, Former Chairman,
Urban Land Institute

THINGS YOU SHOULD KNOW:

- The 2004 National Community Preference Survey conducted by Smart Growth America and National Association of Realtors found that nearly nine in ten Americans (86%) prefer funding improvements in existing communities over incentives for new development in the countryside.

- Market demand is shifting. Households are becoming smaller and more transient. An important sector will be aging baby boomers (many without 401(k)s or drivers licenses) who will need a different type of housing. Experts predict that future projects will do well to focus on infill, urbanizing suburbs, and transit-oriented development. Smaller housing units that are close to transit, work, and amenities will be favored over large houses on big lots at the suburban edge.
- Building green likewise may move mainstream. Issues like carbon reduction, energy independence, and food security ultimately will be played out at the local level in how we build.
- Collier County, Florida, required to revamp its policies to meet the state’s anti-sprawl mandate, has preserved over 24,000 acres of agricultural and environmentally sensitive land using a combination of stringent environmental standards and voluntary transfer of development rights. Another 100,000 acres are projected to be preserved at build-out, at no cost to the county.

Use Techniques to Maintain a Clear Edge

URBAN GROWTH BOUNDARIES

An urban growth boundary is a planning tool that establishes a dividing line between areas appropriate for urban development and areas appropriate for rural or agricultural uses. The best example nationwide is Oregon, where every city and town is required to designate an urban growth boundary. Lancaster County, Pennsylvania, a farming area like the Valley, uses urban growth boundaries successfully in combination with strong farmland preservation policies. The 19 boroughs in the county must designate the areas they will need for growth (urban growth areas). Developers know this is where the infrastructure will be. They also know there will not be much development in the

agriculture zones (minimum of 25 acres per dwelling in some townships and more in others). Purchase of



Albemarle County sets a firm boundary between Development Areas (foreground) and Rural Areas (background).

Know the True Costs of Sprawl



Which will generate more in net income for a community: a working farm or a new residential subdivision far from town?

THROUGHOUT THE U.S. AND VIRGINIA, the relatively low cost of using cars helped fuel the demand for sprawling development. Increases in vehicle miles traveled and acres converted to development have been far outstripping the rate of population growth.

Much of sprawl is caused by the “tyranny of small decisions.” Innumerable individual decisions combine to create a landscape that in the end pleases no one.

In the Valley, another consideration is that subdivisions can hurt the ability of remaining farmers to continue farming. Non-farming neighbors and traffic congestion cause daily inconveniences to farmers. More insidious is the belief that farming can’t last and that “cashing in” for houses is inevitable.

Built-out sprawl ultimately has more damaging effects on water quality and air quality than the farming or forestry it replaced. Sprawl also places a terrible toll on local finances because of the inefficiencies built into providing everything from utilities to school to emergency services. Suburban households cost much more in government services than those in close-in locations.

THINGS YOU SHOULD KNOW:

- Government policies and society at large subsidize car travel and sprawl—to the tune of hundreds of billions of dollars per year.
- Residents of far-flung developments pay more in private transportation costs, service costs, wasted time in traffic, and innumerable inconveniences big and small.
- Large lots cost much more to serve with water and sewer. A study cited in the *Journal of American Planning Association* in 2002 pegged service costs for water and sewer at \$143 per year for a quarter-acre lot in a compact location, \$272 per year for a one-acre lot in the same location, and \$388 per year for a one-acre lot in a dispersed location.
- Sprawling communities require longer public roads, increase the cost of new water and sewer hookups by 20 to 40 percent, and impose higher costs on schools, police and fire departments, and other services, according to the 2005 Rutgers University study “Sprawl Costs: Economic Impacts of Unchecked Development.”

- The same study concluded that in most cases, sprawling residential developments do not generate enough property taxes to cover these added costs.
- More than a third of the developed land in the Shenandoah Valley region in 1997 had been developed in the previous 15 years, according to Natural Resource Inventory data compiled for *State of the Valley 2003* (Valley Conservation Council).
- Compact development rather than sprawl could save \$10.8 billion in road construction in the Chesapeake Bay region over a 30-year period, according to the Chesapeake Bay Program.
- Cars cost. An Illinois study found it costs approximately \$5,000 a year to have a car, not counting fuel costs. Americans in some cases pay more for transportation than they do for food.
- In 2007, the Bureau of Labor Statistics found that the average household spent more on transportation (\$8,758) than it did on clothing, health care, and entertainment combined.
- Location-efficient mortgages recognize that people who live convenient to work and services tend to need their cars less (or even do with fewer cars) and can be better risks for a mortgage. Efficient development patterns can help reduce the amount of the family budget taken up with transportation.



With gas prices up and road funds depleted, does it make sense to build in ways that require lots of driving?

development rights programs give priority to farms in danger of encroachment. (Lancaster County Planning Commission, Lancaster, PA, 717.299.8333)

GREENBELTS

Many communities have invested in open space to create “greenbelts” to define the outer limits of communities. Boulder, Colorado, is surrounded by a 31,000-acre greenbelt of public open space and mountain parks. The greenbelt began in 1967 when voters approved an additional third of a cent sales tax for open space. Closer to home, Maryland’s Rural Legacy Program helps establish greenbelts of forests and farms around rural communities in order to preserve their cultural heritage and sense of place. The program has created greenbelts around a number of small towns such as Sharpsburg, Burkittsville, and Claiborne. These greenbelts were created by purchasing development rights on surrounding farmland. (Maryland Department of Natural Resources, Rural Legacy Program, 877.620.8DNR; www.dnr.state.md.us)

DEVELOPMENT SERVICE DISTRICTS

Some Virginia communities have designated “development service districts,” which map in advance those areas where a county will accept responsibility for providing infrastructure. Targeting growth in and around these areas prevents sprawling development in other areas of the county. Albemarle County for decades has held to its growth area boundaries, which cover just 5% of the county area. Fauquier County also designated service districts (totaling 4% of the county area) over 30 years ago. Public water and sewer are restricted to these nine districts while sliding scale zoning and mandatory cluster zoning in the rural areas lessen growth pressure outside them. Between 1980 and 2000, these service districts received 83% of the county’s new development. (Albemarle County Department of Planning, 804.296.5823; www.albemarle.org; Fauquier County Community Development Department, 540.347.8660; www.fauquiercounty.gov)

SMART GROWTH LAWS

Smart growth laws use the state or local government budget process to encourage growth in areas served by existing infrastructure. Maryland has the most robust smart growth program, begun in the 1990s and recently revamped as the Smart, Green, and Growing program. Emphasis is on integrating smart growth into all levels of government. Maryland has set statewide smart growth goals (with fifteen departments participating) and local governments must develop their own goals. The Smart and Sustainable Growth Act of 2009 reaffirmed that localities must follow their comprehensive plans, made counties responsible for helping to meet targets, and required local planning commissions to

submit an annual report on specific measures of growth and conservation. (Maryland Office of Planning, 410.767.4500; www.mdp.state.md.us.)

Virginia does not have a statewide planning program. However, the General Assembly has legislated that growing counties designate “urban development areas” (UDAs) that are sufficient to hold anticipated growth for the next 10 to 20 years. The legislation sets minimum densities and calls for the use of principles of traditional neighborhood design as well as incentives to encourage development in the UDAs. Any locality can adopt UDAs. Those required to adopt UDAs include all of the Valley region counties that lie on I-81.

FOR MORE INFORMATION:

Smart Growth Network is a partnership of organizations like International City/County Management Association, National Association of Realtors, Urban Land Institute, and The Conservation Fund. Their ongoing series includes *Getting to Smart Growth: 100 Policies for Implementation (I & II)* and *This Is Smart Growth* (www.smartgrowth.org).

Coalition for Smarter Growth serves D.C. and northern Piedmont (202.244.4408; www.smartergrowth.net).

Smart Growth America, a coalition of national, state, and local organizations, works to improve the ways we plan and build towns, cities, and metro areas (www.smartgrowthamerica.org).

Save Our Land, Save Our Towns video by Tom Hylton explores how town and countryside solutions are linked. VCC will loan packages to Planning Commissions and groups (610.323.6837; www.saveourlandsaveourtowns.org).

Smart Growth Is Smart Business, 2004, National Association of Local Government Professionals and Smart Growth Leadership Institute (www.smartgrowthamerica.org/resources).

Environmental Protection Agency’s Smart Growth section has extensive resources, links, and information on funding (www.epa.gov/dced).

The Smart Growth Manual, 2010, by Andres Duany et al is a compact, accessible resource (available at amazon.com).

Invest in Green Infrastructure

2. Conserve As You Grow



The Shenandoah Valley landscape abounds in natural, historic, scenic, and agricultural assets. Communities that recognize and protect such resources as they grow are investing in “green infrastructure.” This graphic shows a compact town with ample green infrastructure and a rural area with intact farms, expanses of forest, and buffers along the creeks and rivers.

WE TYPICALLY THINK of infrastructure as utilities and roads. If these are “gray infrastructure,” then the natural areas and working lands that provide clean water and air, flood control, and places to recreate can be called our “green infrastructure.”

Maintaining the integrity of the Valley’s exceptional natural resources—its farmland, forests, streams and rivers, natural habitats, historic landscapes, and parks—is good land use planning. These resources provide benefits that we need and that future citizens will need as well.

Ten Principles of Green Infrastructure

1. Connectivity is key.
2. Context matters.
3. Green infrastructure should be grounded in sound science and land-use planning theory and practice.
4. Green infrastructure can and should function as the framework for conservation and development.
5. Green infrastructure should be planned and protected *before* development.
6. Green infrastructure is a critical public investment that should be funded up front.
7. Green infrastructure affords benefits to nature and people.

8. Green infrastructure respects the needs and desires of landowners and other stakeholders.
9. Green infrastructure requires making connections to activities within and beyond the community.
10. Green infrastructure requires long-term commitment.

(Source: *Green Infrastructure*, by Mark Benedict and Edward McMahon)

Best Strategy for the Long Run. Green infrastructure planning aligns a community’s conservation needs with its development policies. As population grows, open land will only become more valuable. Keeping land open keeps more options open. Solid green infrastructure planning can put communities and their citizens in a better position to face an uncertain future. For example, if sustainability and energy issues continue to grow as challenges, intact natural areas can provide the flexibility to meet future needs. Rural areas could produce everything from food to energy while tree cover and riparian buffers can save on energy and stormwater costs in urban areas.

“Ecosystem services” are the benefits people obtain from the natural environment (see p. 36). Healthy ecosystems provide us goods like food, fiber, fuel, drinkable water, and breathable air. They reduce flood damage and make our climate more comfortable. They showcase our cultural, aesthetic, and heritage resources and provide opportunities for recreation and spiritual regeneration.

These benefits in the past were seen as both free and intangible. But population increases coupled with excessive land conversion have put great pressure on the ability of the natural environment to deliver these services. Greater recognition of the critical importance of “nature’s services” has triggered efforts to give them a dollar value. More and more studies are being done to help clarify the very real benefits and cost savings of ecosystem services so that they will not be undervalued or left out of decision-making.

What Is Green Infrastructure?

It’s our natural life support system. Green infrastructure is the interconnected network of land and water that supports plants and animals, maintains natural ecological processes, sustains air and water resources, and contributes to the health and quality of life of communities and people. Green infrastructure is both an approach to planning and the results on the ground.

Green infrastructure can be understood as a network of hubs and links. Hubs are core areas like natural sites, parks, unbroken forest, or agricultural districts. The links, such as stream corridors and greenways, connect the hubs. Elements can vary in size and function and can be either publicly or privately owned.



“Green infrastructure” can be seen as a network of core areas connected by corridors.

“Nature is priceless indeed; but unless a monetary value can be assigned, the importance of [ecosystem services] might be lost.”

U.S. Forest Service, “Caring for our Natural Assets: An Ecosystem Services Perspective,” 2007

“Communities across the country have found the green infrastructure planning process helpful for imagining and building their future... in tandem with gray infrastructure projects [it] promises to address both environmental issues and economic issues....”

American Planning Association, “Green Infrastructure Planning: Recent Advances and Applications,” PAS Memo, 2009

Green Infrastructure Is Important in Both Rural and Urban/Suburban Settings

Rural areas provide the necessary base for healthy environmental systems. For Valley counties, an intact rural landscape is also the foundation for agricultural viability, recreation, and tourism. Large contiguous core areas are far more effective than scattered sites at protecting resources and reinforcing growth management plans. Fragmentation causes loss of habitat and degrades the resource’s ability to provide environmental services like clean air and water and flood management. Likewise, larger blocks of strong farming or scenic landscapes are less vulnerable to changes that can undermine their value to the agricultural and tourism economy. Conserving green infrastructure attracts another type of green too. Tourists who especially enjoy landscapes, scenic drives, and history are known as heritage tourists and they spend, on average, more than twice as much as all other categories of tourists.

Within **development areas**, green infrastructure planning identifies specific locations and types of resources that have the most strategic importance. These can be stream buffers, parks, street trees, urban forests, and the incorporation of open space in development projects. These “hubs” ideally are linked by corridors. Corridors are essential for the survival of animals and plants and add significant value for recreation.

2. Conserve As You Grow

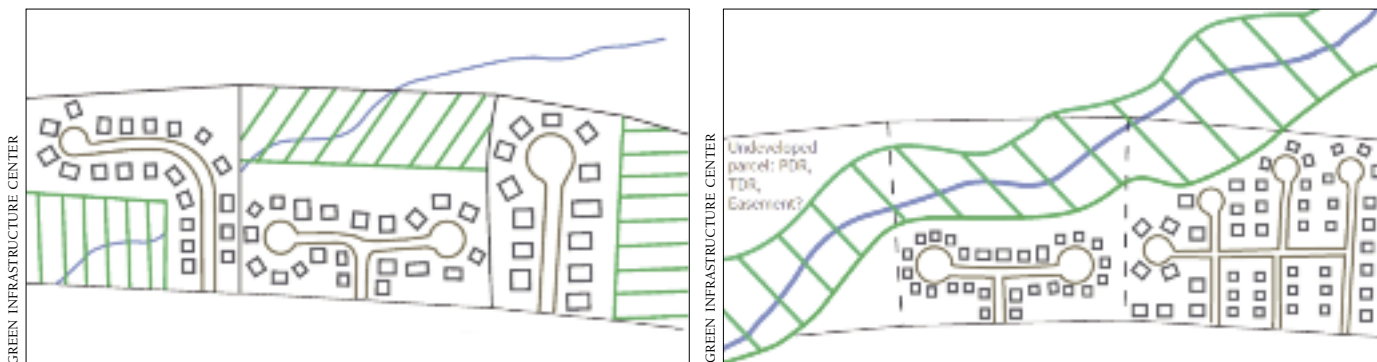
How a Community Can Use Green Infrastructure Planning

At the local scale, a community can identify and direct growth away from key natural assets such as groundwater recharge areas, intact and productive forests, wildlife corridors, prime farmland, and even historic places and scenic views. Through mapping, resource inventories, the comprehensive plan, and other planning processes, the community can identify areas that deserve consideration and promote their protection.

Like all infrastructure, green infrastructure requires planning, investment, and maintenance. But while it is not free, it is less expensive than other options in the long run. Protecting green infrastructure helps a community avoid future costs like expensive stormwater management retrofits or water treatment facilities.

continued on page 38

Seeing Opportunities Beyond a Single Site



Green infrastructure planning can help communities and developers take advantage of larger opportunities. When “cluster” developments do not look beyond the parcel boundary (left illustration), the overall result is not as good as in a green infrastructure approach that keeps the riparian corridor intact (right).

Ecosystem Services: What We Get from Green Infrastructure

CONSERVATION PAYS, in real and substantial ways. Placing a dollar value on “nature’s services” makes it possible to include them in the cost/benefit analysis of development decisions. Most of these financial benefits fall in the category of cost avoidance. When degraded natural systems cannot do the good work of keeping air and water clean, for example, we have to pay much more to accomplish this artificially. Or we pay in other ways through reduced health and quality of life.

The most recognizable ecosystem services are clean water, natural flood control, breathable air, and climate control.

Clean Water – Water treatment is expensive. It can be more cost-effective to conserve the watershed, especially the riparian areas alongside streams and other water sources. Plants, especially trees, filter and remove pollutants and increase natural recharge of underground water sources. This link is what the U.S. Forest Service (USFS) terms “Forest to Faucet.” The more forest cover a watershed has, the less money has to be spent on water treatment. Even in developed areas, protecting riparian areas can help control pollution.

- A 2002 study by the Trust for Public Lands (TPL) and the American Water Works Association found annual water treatment and chemical costs to be \$297,000 for a source area that is 60 percent forested compared to \$932,450 at 10 percent forested. Costs decline approximately 20 percent for every 10 percent increase in the source area’s forest cover.
- Harrisonburg and Staunton are among the communities that draw much of their water from sources in the National Forest.

- New York City, faced with a \$6 to \$8 billion tab to build a water-treatment plant, instead spent \$1.2 billion to protect its watersheds. A 2,000-square-mile forest does the work of the filtration plant.
- Auburn, Maine saved \$30 million in capital costs and an additional \$750,000 in annual operating costs by spending \$570,000 to acquire and protect land in its watershed.

Natural Flood Control – Natural vegetation, especially wetlands, acts like a sponge during storms. Without these natural buffers, a community needs expensive storm sewers and drainage channels to minimize localized flooding. Even in urban areas these costs can be reduced or avoided by retaining parks and open space and tree canopies.

- A 2004 study by Texas A&M found that the risk of flooding increased exponentially once the percentage of developed properties in a watershed reaches 25%.
- It can cost up to \$5,000 to replace the stormwater management services of a single large shade tree. (*Virginia Forests*, Spring 2006)



The Valley, blessed with clean mountain streams, has control over its water resources.

2. Conserve As You Grow

stormwater retention capacity worth \$128 million.

Breathable Air – Trees filter air pollutants and churn out oxygen. This natural cycle can help keep air breathable even in urban areas. The same TPL study found that trees lost in Atlanta between 1974 and 1996 would have absorbed 11 million pounds of air pollutants each year, a service worth \$28 million annually.

Climate Control – Trees can be a natural air conditioner, reducing the heat island effect of parking lots and urban areas. Around individual buildings, trees can provide cooling shade that reduces the need for air conditioning.

- Nationwide, air conditioning for residential buildings represents close to 16 percent of dollars spent for home electricity. (TPL)
- The 28.6 percent tree cover in Washington, D.C., is estimated to save \$2.6 million per year in building energy use.



BOYD COUNTY TOURISM

The more forested a watershed is, the cleaner the water and the lower the treatment costs (Upper James River).

- One study estimated the value of Florida's wetlands just for stormwater management at \$106,333 per acre per year. New York's wetlands were valued at \$689,700 per acre per year.
- Philadelphia parks provide nearly \$6 million worth of stormwater retention annually, estimates a Trust for Public Lands (TPL) study using a USFS model.
- The nonprofit organization American Forests recommends a 40% overall tree canopy goal for cities.
- In Atlanta, heavy tree cover decreased from 48 percent to 26 percent between 1974 and 1996. Tree loss during that period increased stormwater runoff by 33 percent. For the city to build stormwater retention facilities to intercept the increase would cost \$1.18 billion (reported in *American Forests*).
- A 2009 study for Staunton found that the city's tree canopy removes 506,000 tons of air pollutants annually, with an estimated value of \$1.2 million.
- The City of Roanoke adopted a 40 percent tree canopy goal in its comprehensive plan after a study showed its canopy already provides a



Large shade trees provide significant stormwater management and climate control.

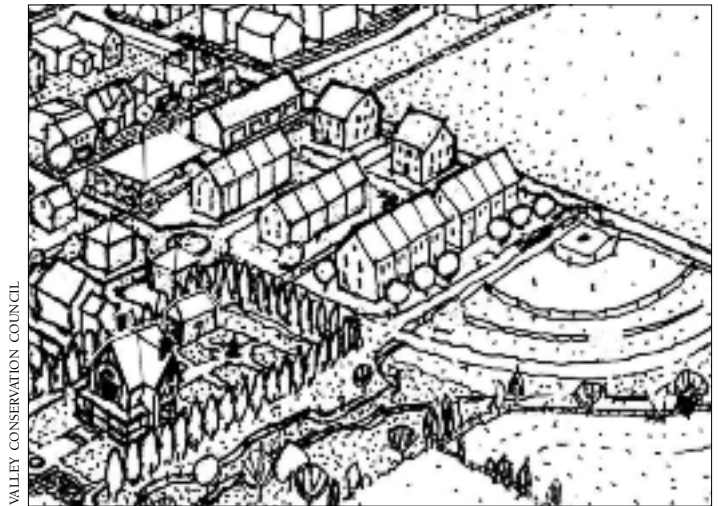
“Our urban green space along the South River in Waynesboro has made it possible to host major events that grow our tourism dollars. Without the river and its parkland, none of this would be possible.”

Len Poulin, President,
Waynesboro Downtown Development, Inc.

With green infrastructure, the whole is much greater than the individual pieces. It’s important for localities to map the resources so that developers know how to connect sites and what parts of their parcels are key to meeting environmental goals.

Valley Examples:

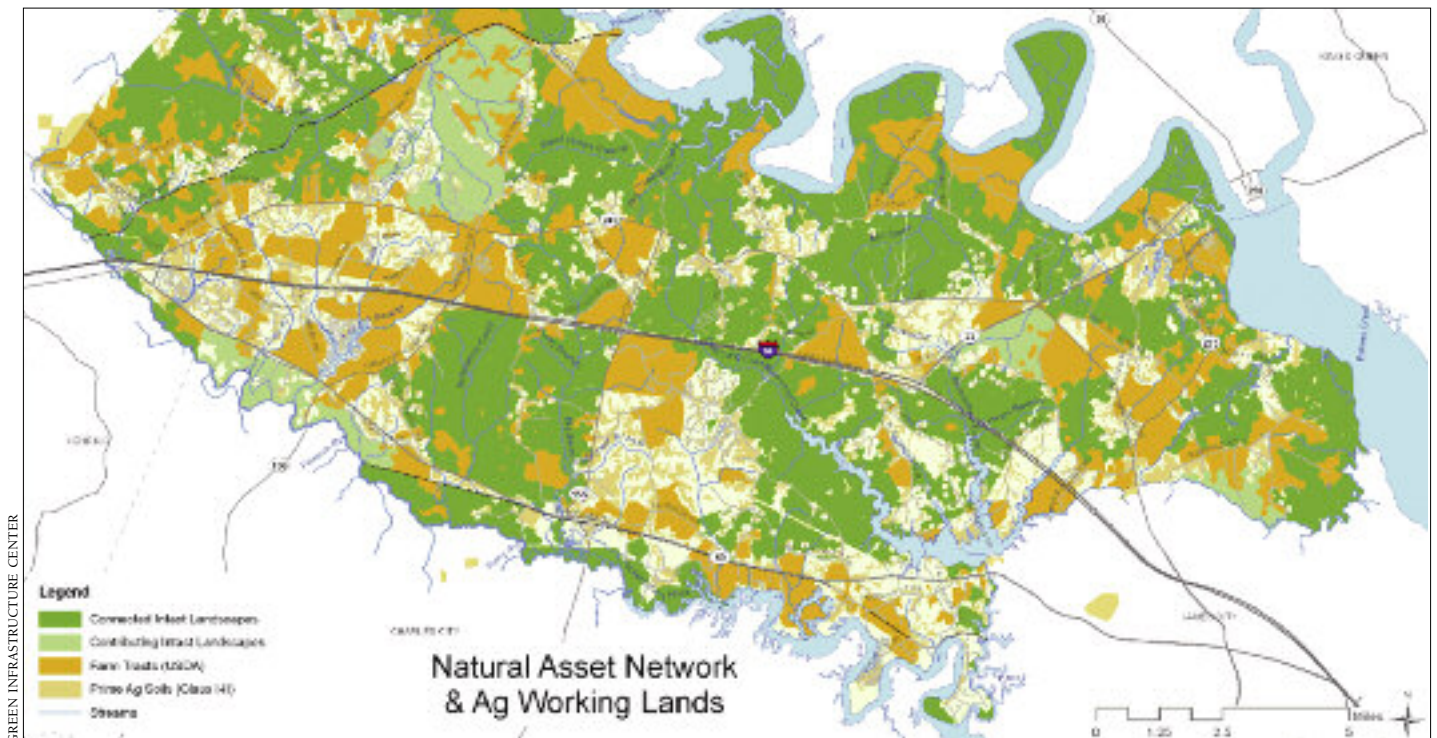
Linked projects along 4.5 miles of Red Bud Run in Frederick County will help protect native trout habitat, two major springs, and a core area of the Third Battle of Winchester as well as provide recreation. Elements include a three-mile greenway and additional trails, innovative stormwater management in the urbanizing



In this illustration, infill development complements existing town development by combining townhouses (center) with a park and a stream buffer.

area, historic scenic byway status, and a conservation easement.

The 2009 “Greenlands” project in Staunton overseen by the Green Infrastructure Center provided detailed information on land cover, parks, and other natural features in the city and recommendations for enhancing the value of those resources.



Working Lands & Natural Asset Network Map of New Kent County shows prime farmland, farm tracts, natural assets, streams, and wetlands.

THINGS YOU SHOULD KNOW:

- Maryland's GreenPrint Program is a national model for using statewide green infrastructure mapping to guide public investments in open space preservation. At least nine counties have followed with their own green infrastructure planning efforts. See the user-friendly web version at www.greenprint.maryland.gov.
- Hilton Head remains a haven for nature lovers even as it has become a mega-destination that draws 2.5 million visitors a year. A 2006 article in *USA Today* notes that the environment has been kept as little changed as possible despite exponential growth.

- Milwaukee's Greenseams program combines gray and green infrastructure planning. It acquires land that is especially suited to absorbing rainwater, reducing stormwater needs and also providing opportunities for passive recreation.
- The Virginia Natural Landscape Assessment (VaNLA) developed by the Department of Conservation and Recreation uses satellite data to develop maps to identify, prioritize, and link natural lands in Virginia, data that can be helpful in green infrastructure planning (www.dcr.virginia.gov/natural_heritage).

2. Conserve As You Grow

FOR MORE INFORMATION:

Green Infrastructure: Linking Landscapes and Communities, by Mark A. Benedict and Edward T. McMahon, The Conservation Fund (Island Press), 2006.

Planning the Urban Forest: Ecology, Economy, and Community Development, by James C. Schwab, American Planning Association, PAS Report 555, January 2009, also has useful appendices of comprehensive plan elements, example ordinances, and other resources (www.planning.org/APA-PlanningBooks.com).

The Conservation Fund, a national leader in green infrastructure, offers training courses and manages greeninfrastructure.net (www.conservationfund.org).

Green Infrastructure Center in Charlottesville provides assistance to local governments (434.975.6700; www.greeninfrastructurecenter.org).

Green Infrastructure Planning: Recent Advances and Applications, PAS Memo, May/June 2009, American Planning Association (www.planning.org).

U.S. Forest Service website provides extensive information and resources on ecosystem services (www.fs.fed.us/ecosystemservices).

Water Quality Scorecard: Incorporating Green Infrastructure Practices at the Municipal, Neighborhood, and Site Scales, EPA's Smart Growth Program, 2010, has a checklist, resources, and case studies for local planners to evaluate codes and ordinances (www.epa.gov/smartgrowth).

Put Conservation in Site Design



Which design makes clean water possible? Is more attractive? Not conventional site design (left) with its extensive grading and hard surfaces. Environmental site design (right) can accommodate just as much development with fewer impacts and more benefits. In fact, this Warren County shopping center gained more developable area.

Use Environmental Site Design

WHEN IT RAINS, pollutants from our lawns, roofs, driveways, parking lots, and roads wash into streams and rivers. Stormwater runoff also erodes streambanks, ruins habitat, and worsens localized flooding. An increasing amount of the pollution in our streams comes off developed land. Even as farmers and treatment plants have reduced their pollution loads, these hard-won gains are being lost to ever greater pollution loads from new development. It's not just growth, but specifically the excessive amount of hard surfaces such as roads, roofs, and parking lots.

The good news is that since runoff is partly a function of site design, we can reverse this trend by changing our designs.

“Conserving well, building well” starts at the site level. Site design is the essential building block. Each development site is a jigsaw piece in the overall pattern of land use. With conventional development projects, stormwater runoff is an afterthought to be dealt

with through pipes and ponds. Sending this flow off site, however, means these pieces add up to a costly cumulative effect on the environment.

A better option is environmental site design (ESD), or designing the site to protect the environment while also achieving development goals. “Low impact development” (LID) practices, for example, aim at reducing the impact on water resources. These techniques (such as rain gardens, bioretention basins, pervious pavement, and green roofs) help mimic natural site hydrology. When rainwater is addressed on site, less of it becomes harmful runoff. LID practices vary, with some designed more to reduce the amount of runoff and others to filter pollutants to help maintain water quali-

“Accommodating future growth without a serious loss of environmental quality requires viewing environmentally sensitive projects as a solution, not as an exception.”

“Environment & Economic Development: Myth and Fact,”
Urban Land Institute

ty. An ESD design might include conservation areas and buffers, infiltration areas like grass swales and rain gardens, and customized lot design such as smaller lots and flexible setbacks.

Principles of Environmental Site Design:

- Minimize land disturbance (like grading)
- Retain vegetation
- Minimize impervious surfaces such as roofs and pavement

The key is to start with these considerations from the very beginning. Coordinating all decisions—including parking design, location of utilities, width and length of roads, and type of paving material—makes the best opportunity to reduce costs as well as runoff.

2. Conserve As You Grow

Managing Stormwater: Comparing “Pipe and Pond” to Reducing Runoff

Conventional Stormwater Management

- Design lots and roads first
- Then manage resulting runoff
- Gather and channel runoff
- Use a few large structures
- Send runoff off site
- Control volume of water



Typical

Large paved areas drain directly into the storm sewer and out to a stream.

Environmental Site Design

- Design from the outset to minimize runoff
- Encourage infiltration
- Disperse flow
- Use many small treatment facilities
- Use combination of elements
- Control volume and protect water quality



Less Impact

Parking lot drains to bioretention basin that filters and slows runoff.

Minimize Land Disturbance



Many projects begin by stripping vegetation and grading the site. By contrast, Grand Oaks in Boyce (right) preserves a grove of trees before the entrance to an open space design subdivision.



Left: Massive grading removes vegetation, makes it difficult to walk to adjacent places, and increases storm-water management needs. Right: This building set into the slope has smaller parking lots and grade-level entrances on each floor.

Retain Vegetative Cover



Before and after: Eroded streambank caused by well-intentioned weed management was stabilized and replanted with desirable shrubs and trees to maintain a vegetated buffer (Bessie Weller Elementary School, Staunton).

Minimize Impervious Surfaces

2. Conserve As You Grow



Before and After: A “low-impact development” project in Lexington added rain gardens for better stormwater management and an attractive gateway.

...and Increase Infiltration



Driveway strip uses less pavement (Staunton).



Permeable concrete was used for the McKown Plaza at Shenandoah University.



Curb inlets help runoff flow into tree islands at McSwain Elementary School, Staunton.



Simple rain garden serves as backyard in Newtown (Williamsburg)

Filter Pollutants



This Lexington Firehouse parking lot drains to a specialized media that removes oils and other pollutants.



Multiple smaller facilities like this tree box filter reduce runoff and filter pollutants (Williamsburg).



Parking lot drains to a rain garden at Kendall in Lexington.

More Ways to Reduce Runoff



Green roof absorbs rain at an Arlington community center.



What you DON'T see is what you get. This footbridge between two parts of the Washington and Lee University campus is designed for least impact on Woods Creek. The city has engaged partners like the colleges, schools, and citizens to restore creek health.



Large-scale rain barrel collects runoff for reuse (Arlington).

Choose Designs That Help Water Quality



Mow? Or go to the park? Mowing is an important activity for many Americans, but living more compactly is generally better for the watershed and might also offer more varied recreational opportunities.

Parkside Village in Crozet (right) adjoins the regional park.

Development Pattern Affects Water Quality

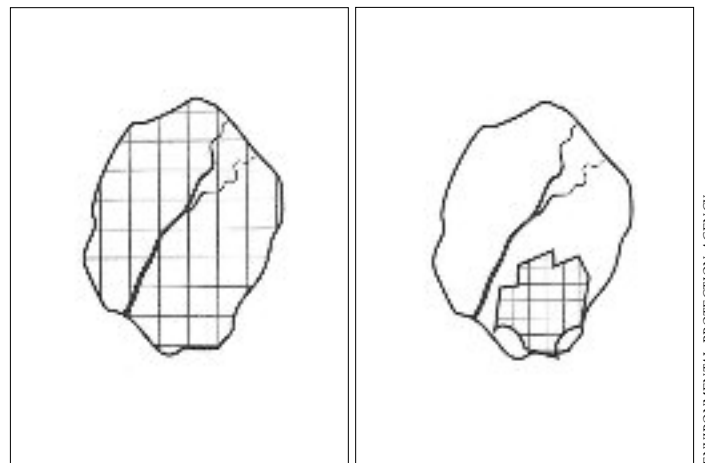
Large lots must be best for water quality, right? Actually, while an individual site with more land area has more ways to manage runoff, at the community level low-density development makes it harder to protect water quality. Spreading over more area requires more parking lots, roads, and driveways and also affects more of the watershed.

For the same amount of growth, more compact development delivers far less stormwater runoff, per household and in total. It converts less land, which does more to protect the watershed, and incurs less hard surface per household.

Density can be compatible with water quality. Coupling land conservation with compact development means that some individual sites will have a high proportion of hard surfaces, a challenge for meeting water quality standards. However, developers are finding ways to incorporate natural drainage systems into compact, dense projects. A South Carolina case study in *New Urban News* found that low impact development strategies reduced the anticipated engineering

costs by 31 percent for a 42-acre compact traditional neighborhood project. Higher costs to protect mature trees and construct rain gardens would be more than offset by needing less piping, inlets, sidewalks, curb and gutter, and road paving.

Smaller Footprint, Smaller Impact



ENVIRONMENTAL PROTECTION AGENCY

At one house per acre (left), development would impact the entire watershed. At four houses per acre (right), the same amount of development would result in 2/3rds less runoff per household. Source: *Protecting Water Resources with Higher-Density Development*, U.S. Environmental Protection Agency, 2006.

Water is a resource. Stormwater is no exception. Enabling natural infiltration helps recharge groundwater. Rainwater also can be “harvested” for use on-site for gardens and other purposes. The ESD approach also fits well with goals of developing sustainable and livable communities.

It’s ultimately about local waters. American Rivers in 2006 named the Shenandoah River one of the most endangered rivers in the nation, citing poorly managed new development as the predominant threat. In fact, most of the main water courses in the Valley region are impaired or polluted.

What Localities Can Do

- Make watershed planning part of all planning efforts
- Use environmental site design on public property and projects
- Incorporate low-impact designs in codes and remove inadvertent barriers
- Provide flexibility and incentives to help developers meet water quality goals
- Support “greening” of existing sites

“The measures we use to restore our waterways will also restore our communities. We need to partner with our planners and economic development professionals so this is our comprehensive plan, not just our watershed plan.”

Former Baltimore City official

The Rules They Are A-Changing

Nationwide, and particularly in the Chesapeake Bay region, stricter pollution standards are being enacted. Environmental site design will be the most viable design approach for meeting clean water regulations.

What is being proposed are “pollution diets,” with individual pollution caps or total maximum daily loads (TMDLs) set for specific watersheds. Local plans will be drafted to address the particular pollution problems in that watershed and hold to the cap.

In December 2009, Virginia passed new stormwater regulations that will fundamentally change the approach to site design and make water quality more clearly part of development review. Resources and programs are being developed to support this change. For the latest information contact the Virginia Department of Conservation and Recreation and the Chesapeake Stormwater Training Partnership (below).

The exact regulations and standards may take time to settle out, but the direction is clear: the sooner the better for preventing additional pollution. Rapid advances are being made in the products, practices, code language, and training to support improved site design for water quality. Some communities in the Valley and nearby have already moved forward with these measures.

Caveat on Caves

Much of the Valley region contains karst geology, which is characterized by sinkholes, springs, and caves. These formations create direct avenues for surface pollution to move into groundwater and travel quickly in underground drainage networks. Site design must be approached carefully in karst areas due to this high potential for groundwater pollution.

- The Chesapeake Stormwater Network’s “Technical Bulletin: Stormwater Guidance for Karst Terrain in the Chesapeake Bay Watershed” (2009) gives design guidance that can be incorporated into local codes and manuals.
- Loudoun County in 2010 adopted a Limestone Overlay District to set standards for land development and land disturbing activities in locations with karst and environmentally sensitive features.

“While the Chesapeake Bay region’s population growth in the 1990s was 8%, the increase in impervious surface area was 41%.”

2007 Inspector General’s report

LID Designs Can Be Cost Effective

Eliminating the need for large detention ponds can leave more land available for development. The River-ton shopping center in Warren County gained five acres of valuable real estate by not having to use eight acres total for stormwater basins.

When a 30-acre fully paved brownfield site was redeveloped into the Greenland Meadows (New Hampshire) Lowes/Target commercial center, developers got an ideal location and saved \$900,000 by putting in porous pavement on the front and sides, avoiding the cost of additional piping and underground structures.

A Pelham, New Hampshire, low-impact development (LID) subdivision designed for nearly zero rainwater discharge netted \$50,000 in avoided costs for curbing, piping, and detention basins.

THINGS YOU SHOULD KNOW:

- By the time 10% of a watershed is impervious surface, the stream is likely to become impaired and at 25% to be severely impaired.
- About 30% of stormwater leaves a suburban site as runoff; on commercial sites it can be from 45 to 95%.
- Newtown in Williamsburg is dense and compact but also has considerable open space and uses varied strategies to manage stormwater, including buffer areas, parks, rain gardens, and tree box filters.
- Prime Outlets, also in Williamsburg, had more site constraints. Its pervious pavement parking lot provides for filtration and retention of stormwater.

2. Conserve As You Grow

- Comparative plans for the Vermillion development near Huntersville, NC, showed that a compact Traditional Neighborhood Design (TND) would have only one third the amount of impervious surface per dwelling unit as a conventional design.
- While a new concept in the Valley, all of the localities east of I-95 have had stormwater regulations for decades as part of the Chesapeake Bay Act.
 - Staunton requires a 50-foot buffer along streams and the use of low-impact development (LID) design.
- Stafford County has a thorough program and detailed design manual for LID.
- James City County has exemplary codes to support environmental site design developed in part through a roundtable process involving homebuilders, planners, engineers, and fire and rescue.
- Green roofs and rain barrels are other ways of reducing runoff and using water on site.
- A rainwater harvesting manual produced by the Cabell Brand Center in 2009 features projects in places like Roanoke and Charlottesville. James Madison University is planning to build a dorm that would use ‘harvested’ rainwater.

FOR MORE INFORMATION:

Virginia Stormwater Management Program is housed in the Virginia Department of Conservation and Recreation (VDCCR) with a Valley regional office in Staunton (540.332.9991; www.dcr.virginia.gov).

The Chesapeake Bay Stormwater Training Partnership, coordinated by the non-profit Chesapeake Stormwater Network (CSN), provides intensive training programs for stormwater design professionals and local government

plan reviewers as well as resources and links to state stormwater programs (www.cwp.org/cbstp or www.chesapeakestormwater.net).

Center for Watershed Protection, based in Maryland but with a Virginia office, is the preeminent source for resources and technical assistance to local governments. *Better Site Design: A Handbook for Changing Development Rules in Your Community* (2007) and the companion *Codes and Ordinance Worksheet* are detailed guides to assessing local codes (410.461.8323; www.cwp.org).

Virginia Stormwater BMP Clearinghouse, jointly operated by VDCR and the Virginia Water Resources Research Center at Virginia Tech, provides design standards and specifications for stormwater practices approved in Virginia (www.vwrrc.vt.edu/swc).

"Technical Bulletin No. 1: Stormwater Guidance for Karst Terrain in the Chesapeake Bay Watershed," 2009, Chesapeake Stormwater Network (www.chesapeakestormwater.net).

Stafford County Stormwater Management Design Manual, 2008, Department of Planning and Zoning (540.658.8650; www.staffordcountyva.gov).

Protecting Water Resources with Higher-Density Development, Environmental Protection Agency, January 2006, Publication EPA 231-R-06-001 (www.epa.gov/smartgrowth).

Using Smart Growth Techniques as Stormwater Best Management Practices, EPA, December 2005, Publication EPA 231-B-05-002 (www.epa.gov/smartgrowth).

American Rivers in Washington, D.C. has downloadable reports including "Clean Water for Maryland: Local Ordinances for Environmental Site Design" and "Using Green Infrastructure in Karst Regions" (202.347.7550; www.americanrivers.org).

Valley Conservation Council, "Water and Development" section of the website (540.886.3541; www.valleyconservation.org).

Use Open Space Development Techniques

2. Conserve As You Grow



Suppose you were a developer with 200 acres. Which do you think would be more profitable: a development with 100 two-acre lots and no open space, or a development with 100 one-acre lots and 100 acres of open space?

COMMUNITIES ACROSS VIRGINIA are realizing that they can conserve their special open spaces and natural resources at the same time they achieve their development objectives.

Each time a property is developed into a subdivision, an opportunity exists for adding land to a community-wide network of open space. Conservation design simply rearranges the development on each parcel as it is being planned so that half (or more) of the buildable land is set aside as open space. Without changing the underlying zoning, the same number of houses can be built using less land, allowing the balance of the property to be protected. The density-neutral approach outlined below is an equitable way to balance conservation and development.

Open space, or conservation, developments can reduce some of the negative impacts of new subdivisions. They can blend houses into the landscape and to some degree can allow for the continuation of working farms.

These conservation-oriented “cluster developments” provide the same number of dwelling units as conventional development. They are carefully designed, how-

ever, to preserve parts of a site and cluster the houses on the remainder.

Many counties in Virginia and elsewhere require open space designs. Others allow it as an option.

Virginia requires that high-growth counties (including most of the counties in the Valley) allow clustering in at least 40% of their agricultural and residential zoned areas. Communities need to think through what kinds of locations and settings would be appropriate for “clustering” and to set standards for the open space and the design of the lots.

Subdivisions in rural areas are not encouraged. But if a rural location is selected, there are ways to lessen the effects on the rural landscape by carefully planning the new development.

It is important to recognize that while open space subdivisions can provide some aesthetic and environmental benefits over conventional subdivisions, they cannot replace the need for a solid policy of farmland and rural area protection.

Open space developments also can be a profitable option. Property values are enhanced by the open space and building on only part of the site can make the lots less costly to develop.

Open space in a development can provide the following benefits:

- protects environmentally sensitive areas
- provides common areas for residents' use
- allows continued farming or forestry
- combinations of the above

Advantages to developers:

- lowers overall development costs
- fosters greater acceptance from neighbors
- provides a valuable marketing advantage

Advantages to residents:

- ensures that views will be preserved
- gives access to open space (if commonly owned)
- lowers maintenance costs
- provides potential for community parks
- enhances property values

Advantages to community:

- protects scenic views
- helps preserve rural character
- allows for continued agriculture
- improves habitat protection
- lowers service costs

Design for the Setting, Not Just the Site

The design of an open space development will vary according to the features on the site. It also should respond to the type of location, whether rural, suburban, or urban. Localities will want to set cluster standards accordingly to make sure that the density, the site design, and the open space features reinforce the community's growth vision for that type of setting.

Concepts and examples for designing clusters in a growth area and in a rural area follow.



Lenah Run, a large but also leafy subdivision in Loudoun County, retains extensive forest buffers (top) and provides open areas, trails, and shade tree plantings (bottom) as neighborhood amenities.

How to Design Open Space Developments

2. Conserve As You Grow

IN HIS BOOK *Growing Greener: Putting Conservation into Land Codes*, land use expert Randall Arendt explains how open space design works. Designing subdivisions around the central organizing principle of land conservation is not difficult.

However, it is essential that ordinances contain clear standards to guide the conservation design process. Arendt's four-step approach described below has proven to be effective in laying out new full-density developments where all the significant natural and cultural features have been preserved.

Step One consists of identifying the land that should be permanently protected. The developer performs a detailed site analysis in order to precisely locate features to be conserved. The developer first identifies all the constrained areas, such as wetlands, floodplains, and steep slopes, called Primary Conservation Areas. The developer then identifies Secondary Conservation Areas, which comprise noteworthy features of the property that are typically unprotected under current codes: mature woodlands, greenways and trails, river and stream corridors, prime farmland, hedgerows and individual free-standing trees or tree groups, wildlife habitats and travel corridors, historic sites and structures, and scenic viewsheds. After "greenlining" these conservation elements, the

remaining part of the property becomes the *Potential Development Area*.

Step Two involves locating sites of individual houses within the Potential Development Area so that their views of the open space are maximized. The number of houses is a function of the density permitted within the zoning district.

Step Three simply involves "connecting the dots" with streets and informal trails. **Step Four** consists of drawing in the lot lines.

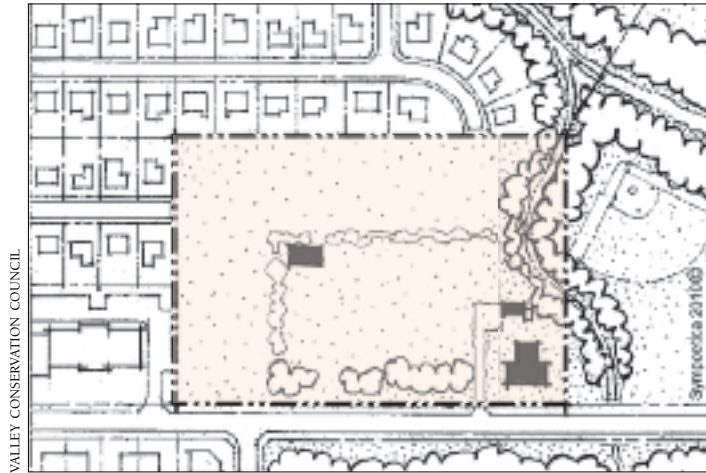
This approach reverses the sequence of steps in laying out conventional subdivisions, where the street system is the first thing to be identified, followed by lot lines fanning out to encompass every square foot of ground into house lots. When a locality requires nothing more than "house lots and streets," that is all they receive. But by setting community standards higher and requiring significant open space as a precondition for achieving full density, officials can effectively encourage conservation subdivision design. The protected land in each new subdivision would then become building blocks that add new acreage to community-wide networks of interconnected open space each time a property is developed.



Rather than turning the whole farm into large house lots (left), a cluster subdivision can site houses in a way that enables continued operation of the farm. In this Loudoun County example, the farm is in the foreground while new houses are sited beyond in the trees.

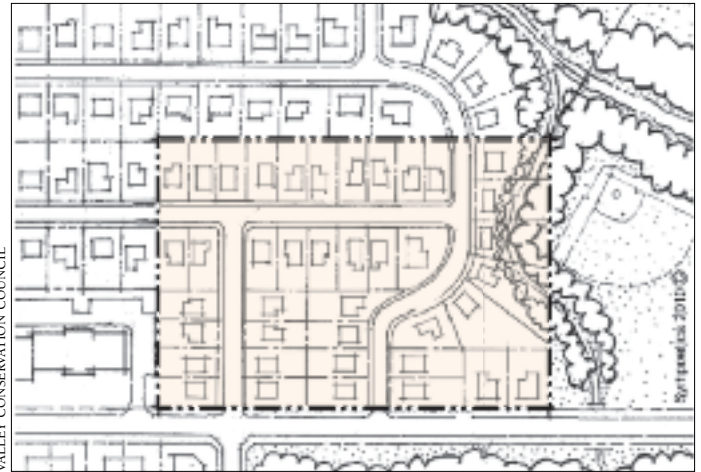
Growth Area Clustering

Clusters in a **growth area** can be at a fairly high overall density, especially when on public utilities. Preservation can focus on usable open space and environmental protection. Typical features might be stream buffers, reserved natural areas or historical or cultural features, community open space, and tie-ins to regional trails or facilities.



Pre-Development – 10-acre infill site between a subdivision and a park abuts the main road and contains a historic house and portions of a stream valley.

Scenarios are on public water and sewer and meet street connectivity standards.



Conventional – 40 lots of detached housing (4 units per acre) with no open space and the old house removed.



Cluster – 48 dwelling units (reflecting a bonus) in a mixture of unit types. The historic house and the stream valley are preserved (30% open space).



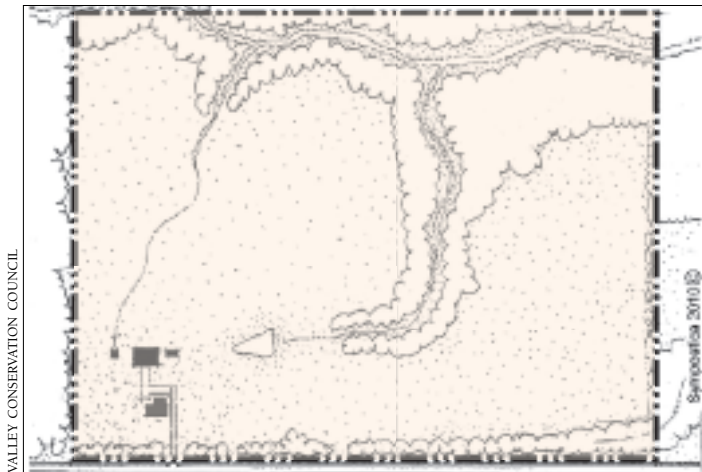
Most subdivisions, such as the one at left, offer nothing but the house and driveway. The open space design subdivision in Boyce at right provides common open space and attractive as well as functional rain gardens.

Rural Area Clustering

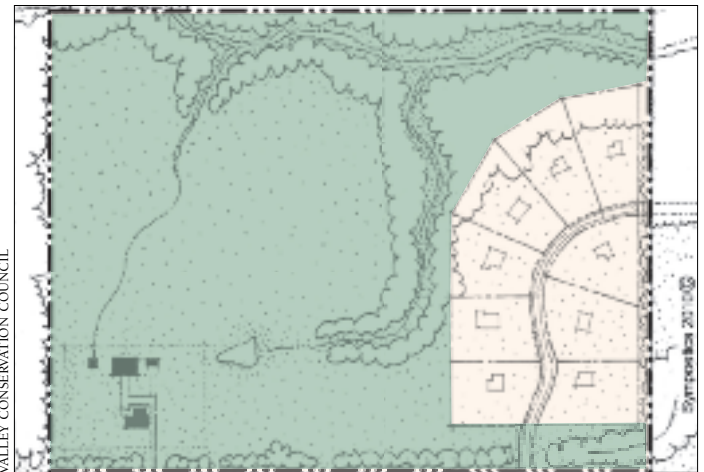
2. Conserve As You Grow

When using clusters in **rural areas**, the focus should be on retaining productive farmland and rural character. The density would be much lower—only a limited number of houses on private wells and septic. Preserved land would be kept contiguous or configured for continued farm management. Typically the existing farm would be the primary conservation lot. “Strip lots” along the road should be avoided.

Because rural cluster subdivisions still inject non-farm residences into a farming area, densities should remain low. Most experts suggest a rule of thumb of at least 20 acres per dwelling for sustaining agricultural areas.



Pre-Development – 100-acre farm.



Cluster – Ten 2-acre lots clustered on part of the site, out of view from the road; about 75% of the site remains in farming and forestry use.

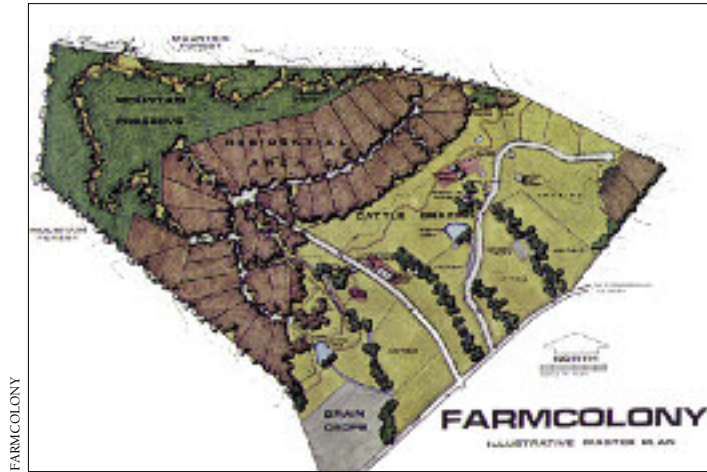


Conventional – Ten 10-acre lots, one of which contains the farmhouse. No common open space or farmland.



Lot Averaging – Ten lots of varying sizes: 7 at about 5 acres each, 1 at 10 acres, and 1 at 15 acres, and a farmstead lot of 40 acres; 40% of the site remains in agricultural use.

All scenarios use private streets, on-site well and septic, and a yield of ten lots.



The master plan for Farmcolony in Greene County clusters homes to protect farmland and the mountain background, as shown in the photo and map above.

THINGS YOU SHOULD KNOW:

- The open space in a conservation subdivision usually consists of at least 50% of the buildable land, plus floodplain, wetlands, and steep slopes.
- Lots in conservation subdivisions sell at a premium, are less expensive to build, and sell more quickly than lots in conventional subdivisions, concludes a research study cited in the January 2006 issue of *Urban Affairs Review*.
- In that study, lots in the conservation subdivisions sold for 12-16% higher per acre, averaged \$7,400 lower in production costs, and sold nearly twice as fast as comparable lots in conventional subdivisions.

Protecting Special Features and Offering Amenities



Open space subdivisions can protect special features and offer amenities. Birch Hollow in Loudoun County provides excellent common open space and also preserves an old road bed and tree line (right).

- A 1995 nationwide survey of prospective home buyers conducted for a group of large-volume home builders found that consumers rated “lots of natural open space” as an “extremely important” feature in new residential development. In fact, open space rated second overall out of 40 possible features.
- In its designated rural areas, Fauquier County requires during subdivision that 85 percent of the land be permanently protected.
- Clarke and Loudoun counties also have many examples of cluster developments.
- Hanover County’s Rural Conservation zoning ordinance has been used to protect more than 5,000 acres as more than a dozen cluster projects have been built. The ordinance aims to protect rural character, minimize impact on view sheds, and preserve agricultural, forestal, and environmental resources. One development next to a Civil War battlefield protected breastworks in one section and transferred another parcel to a preservation organization.

FOR MORE INFORMATION:

Envisioning Better Communities, 2010, Randall Arendt, American Planning Association (www.planning.org).

A Sustainable Chesapeake: Better Models for Conservation, 2010, David G. Burke and Joel E. Dunn, The Conservation Fund (703.525.6300; www.conservationfund.org).

Conservation Communities: Creating Value with Nature, Open Space, and Agriculture, 2010, Urban Land Institute (www.uli.org).

Greener Prospects (Randall Arendt) offers information on workshops, site designs, and ordinance reviews as well as books and downloads (www.greenerprospects.com).

Growing Greener: Putting Conservation Into Local Codes, Natural Lands Trust, Media, PA (610.353.5587; www.natlands.org).

Crossroads, Hamlet, Village, Town: Design Characteristics of Traditional Neighborhoods, Old and New, 2004, Randall Arendt, American Planning Association PAS Report 523/524 (www.planning.org).

Rural By Design, 1994, Randall Arendt with Elizabeth Brabec, Harry Dodson, Christine Reid, and Robert Yaro, American Planning Association (www.planning.org).

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2. Conserve As You Grow

Principle 3: BUILD LIVABLE COMMUNITIES



Farmland can grow only so many houses. Livable communities with the right mix of design and density such as this one in Williamsburg (right) become even more convenient and vital as they gain residents, dwellings, businesses, and services.

THE IMPORTANT FLIP SIDE of not developing the countryside is building attractive places to live in the areas where growth is desired and can be accommodated. This means growing better, not just bigger. Accomplishing this will require transforming our development processes.

Development screeched to a halt in 2008. When it comes back, what form will it take?

Sprawl has been a bad choice, not just for the countryside but for communities. Developing in a spread out, land-consumptive fashion converts more productive farm and forest and affects more natural resources than necessary. Public investments in roads, utilities, and services also are more costly and inefficient when spread over a greater area to serve a given population.

Those communities that learn from the current economic crisis will be ready to develop in a different and more efficient way. They will take down some of the barriers to better development. There are more reasons than ever to do this.

Never waste a crisis ... With markets down, now is the time to position ourselves for a new economy based on sustainability."

Housing and demographics researcher,
Arthur C. Nelson, 2009

One is to respond to changes in market demand. Some suburban-lot development will always take place, but diverting a portion of new development into compact patterns can provide new options for residents and better meet community goals.

Many communities have put concepts like "walkable communities" in their comprehensive plans. The most difficult—though essential—step is putting in place the ordinances and policies to make it easier to build developments with these desired characteristics. This shift will demand more of local governments and the community planning process than ever before.

See the following pages for examples of compact, connected, mixed-use, human scale development projects.

The Coming Demand for Walkable Neighborhoods

3. Build Livable Communities

DEMOGRAPHICS AND CONSUMER PREFERENCES

point to significant shifts in what kinds of housing consumers will want in the future. These trends will drive an increased market share for compact, walkable neighborhoods.

- America's population is expected to grow by 94 million between 2000 and 2030.
- About half of the homes, office buildings, stores, and factories needed by 2030 do not exist today, according to a 2004 Brookings Institution report. ***This is an opportunity to reshape future development.***
- Already more than 75 percent of home buyers do not have school-aged children. The coming need is for housing for retirees, empty nesters, single parents, and unrelated singles.
- Both the "age wave" of baby boomers and the younger generations are trending toward smaller households and a preference for smaller attached housing with urban amenities.
- People do not want more auto dependence. Nearly 90% of those polled in a 2007 survey sponsored by the National Association of Realtors® and Smart Growth America said new communities should be designed so we can walk more and drive less, and that public transportation should be improved and accessible.
- A survey cited in the *Journal of the American Planning Association* in 2008 found that 42% to 59% of all households want "new urban" neighborhood characteristics.
- No more "McMansions" needed? A 2007 study by former Virginia Tech housing and demographic

expert Arthur C. Nelson predicted that by 2025, the nation will need 35 million more attached and small-lot housing units, but the demand for large-lot houses will be below our current supply.

- Houses with above-average walkability command a premium of \$4,000 to \$34,000 over houses with just average levels of walkability in typical metropolitan areas, according to "Walking the Walk: How Walkability Raises Housing Values in U.S. Cities" a 2009 study for CEOs for Cities.
- A study published in the *Journal of Planning Education and Research* in 2005 surveyed residents in Atlanta and Boston and found a huge unmet demand for walkable and transit-friendly locations.



Condominiums in the former YMCA in Staunton have been popular among those downsizing for convenience and lifestyle. Winchester, Lexington, and Harrisonburg have seen similar projects.

What Home Builders Say About Compact Development

The National Association of Home Builders (NAHB) supports compact development as a way of using land more efficiently, preserving environmentally sensitive lands, and reducing development costs through more efficient use of infrastructure, which in turn makes housing more affordable.

Advice to Local Governments from NAHB:

- Change your development ordinances (to permit and encourage cluster development, higher densities, mixed uses, narrower streets, and flexible setbacks)
- Provide more certainty in the approval process (presumption of approval if standards are met; more efficient permitting process)
- Plan for compact development (new tools; necessary infrastructure to support compact development)

(Adapted from NAHB Talking Points on Compact Development)

FOR MORE INFORMATION:

The Smart Growth Manual, 2010, Andres Duany and Jeff Speck, McGraw-Hill (a slim volume explaining and illustrating design concepts of smart growth at the region, neighborhood, street, and building levels).

Envisioning Better Communities: Seeing More Options, Making Wiser Choices, 2010, Randall Arendt, APA Planners Press (www.planning.org).

Choosing Our Community's Future: A Citizen's Guide to Getting the Most Out of New Development, 2004, Smart Growth America (www.smartgrowthamerica.org).

This Is Smart Growth, 2006, Smart Growth Network, a partnership of organizations including International City Management Association, The Conservation Fund, National Association of Realtors, and National Association of Counties (www.smartgrowth.org).

Ten Principles for Smart Growth on the Suburban Fringe, 2004, Urban Land Institute, ULI order #T23 (www.uli.org).

New Urban News, website and newsletter with resources on new urbanism, smart growth, and walkable communities, including descriptions of new urbanist projects (www.newurbannews.com).

Emerging Trends in Real Estate® 2010, Urban Land Institute (www.uli.org).

"Smart Growth: The Business Opportunity for Developers and Production Builders," webpage with links to studies and reports on trends, marketing, and cost analyses (www.epa.gov/dced/sg_bus).

"Smart Codes Smart Process Checklist," National Association of Homebuilders (www.nahb.org).

Conservation Communities: Creating Value with Nature, Open Space, and Agriculture, 2010, Urban Land Institute (www.uli.org).

Barriers to Better Development

- **Adverse Local Regulations** – Most land development codes are set toward conventional single-use projects. They do not encourage (and often preclude) the variations in lot design, road width, mix of uses, provision of open space, and other elements needed to achieve walkable neighborhoods and other smart growth concepts.
- **Outdated Market Perceptions** – Most of what has been built recently consists of single-family detached housing on large lots, offering few options to the 75 percent of households who do not have school-age children.
- **High Development and Process Costs** – Projects that offer an ultimately better value to the community can be complex and have higher costs. Infill sites can be expensive. Good design takes skill, time, and effort. These higher start-up costs put developers at a competitive disadvantage unless incentives are offered.
- **Financing by Formula** – Complex, multiple-benefit projects may not have the easy comparables or predictable standard products that bankers can fit into a formula.
- **Proposing High Density without Amenity** – Beautiful, human-scaled, and pedestrian-friendly design and open space can compensate for density. Without such amenities, density deservedly gets a bad name.
- **Public Infrastructure Subsidies** – Federal, state, and local governments extend roads and utilities to serve new development, leaving fewer resources for maintaining or expanding existing capacity.
- **Low Expectations** – All development is not created equal. Communities that set higher standards

get higher results. Most businesses will readily meet higher standards to be in an economically profitable location.

- **“Big Box” Forms of Building** – Using the “big box” or campus footprint for retail, offices, and civic uses like schools and libraries makes them inaccessible to pedestrians and surrounding neighborhoods.

What Localities Can Do

The most important thing localities can do is to make the path easier for better development. The Comprehensive Plan can express a clear vision. Engaging the public at this stage can help later as projects come forward. The future land use map can show specifically where and what types of development are desired. Detailed and well-crafted ordinances can take away uncertainty and smooth the process. Incentives and flexibility can reduce hurdles that would otherwise make the approval process longer and more uncertain for complex, multi-faceted projects. Last but definitely not least is backing up these plans with the infrastructure needed to support desired development.

“Although building the infrastructure that supports dense development seems expensive, in the long run it’s actually much cheaper than conventional suburban infrastructure—at most one-tenth the cost per home.”

Christopher Leinberger, “Here Comes the Neighborhood,”
The Atlantic, June 2010

Use New Tools to Design Livable Places

LIVABLE PLACES don't just happen. Certain patterns and forms work best, yet many of these are against conventional codes. Here are some new tools for the toolbox:

New Urbanism aims to restore our capacity to build functional places that are human scale, efficient, and walkable. As an overarching set of design principles, it guides density and form along a continuum from rural to urban (the more urban, the more dense). These principles support many smart growth policies such as resource protection and affordable housing and can be applied equally to redevelopment projects, new neighborhoods, and high-density urban cores. New Urbanism is best known for inspiring memorable mixed-use projects like Seaside, Florida, and Kentlands, Maryland, as well as Reston Town Center and Shirlington in Northern Virginia.



Shirlington, revitalized through new urban designs into a vibrant living, shopping, and entertainment center

Traditional Neighborhood Developments (TNDs) are the most common expression of the new urbanist approach. These have the traditional grid streets, mixture of uses, small lots, and public areas that are familiar from older neighborhoods but not allowed in conventional codes. TNDs can be added to zoning codes



Parkside Village in Crozet, an example of a TND

as a type of Planned Unit Development (PUD) that gives the developer flexibility in laying out lots and combining a range of uses, building types, and open space. Waylands Grant and Parkside Village in Crozet are good examples of TNDs. Virginia localities designating Urban Development Areas (UDAs) must include principles of “traditional neighborhood design.”

Form-Based Codes (FBCs) focus on building form rather than on use and density. The benefits—ensuring a desired development pattern, increasing development potential, encouraging mixed use, and complementing area character—are purposes that can be hard to achieve with conventional codes. FBCs create a pre-



Arlington's Columbia Pike, with new buildings on the left following a form-based code

3. Build Livable Communities

dictable public realm by controlling physical form such as building height, scale, and relation to the street. This approach can be applied variously to commercial areas, historic districts, and new residential or mixed-use areas. FBCs are being used in Arlington quite successfully to revitalize the aging Columbia Pike corridor and in Virginia Beach to provide better options for redeveloping nonconforming lots. Leesburg has drafted an FBC for an infill area. In 2010, Miami placed most of the city under a form-based code guided by the tenets of new urbanism and smart growth principles, the most comprehensive application to date.

Conservation Development allows residential or even commercial development while still protecting an area's environmental features, allowing for more open space

and protecting farmland and rural character. Conservation development differs from conventional development in several ways. It usually sites homes on smaller lots and there is less emphasis on minimum lot size. The remaining land which would have been allocated to individual sites is converted into protected open space shared by residents of the entire community, thus increasing values while reducing infrastructure costs. There are numerous conservation developments in Virginia and throughout the country.

FOR MORE INFORMATION:

SmartCode Version 9 and Manual, 2008, presents a form-based approach to environmentally sustainable, economically competitive, and livable places, addressing settings from rural to urban core to special districts and providing code text with matching commentary and guidance (New Urban Publications; www.cnu.org).

Codifying New Urbanism: How to Reform Municipal Land Development Regulations, 2004, Congress for the New Urbanism, PAS Planning Advisory Service Report #526 (www.planning.org).

Smart Codes: Model Land-Development Regulations, 2009, American Planning Association PAS Report #556, includes model ordinances on 21 topics (www.planning.org).

Congress for the New Urbanism (www.cnu.org).

Form-Based Codes Institute (www.formbasedcodes.org).

See also *Open Space Development* section, p. 49.

Extend Villages and Towns



If you had a choice, would you rather live in a small town or in suburbia?

PEOPLE CRAVE A SENSE OF COMMUNITY. Surveys of Americans reveal a strong preference for the “small town” as the ideal place to live. Small towns conjure up an image of knowing your neighbors, walking to school or the store, and having safe and pleasant surroundings. This truly is the reality in many of the Valley’s towns and cities. The Valley has many different scales of communities. All offer a sense of place, a compact settlement pattern, and proximity to services.

The many villages and towns sprinkled throughout the Valley are greatly undervalued assets. They provide the opportunity for close relation to the rural areas while offering the conveniences and social aspects of a community.

All of these communities have room to grow from within and can be extended in a compatible pattern. It even can be appropriate to create new villages.

One way to bring about compatible growth of villages and towns is to prepare an area plan. With local community input, the community can set specific locations and patterns for roads and general uses in the core boundaries and in adjoining areas. This planning gives the developer confidence of project approval and assures neighbors that new development will be of

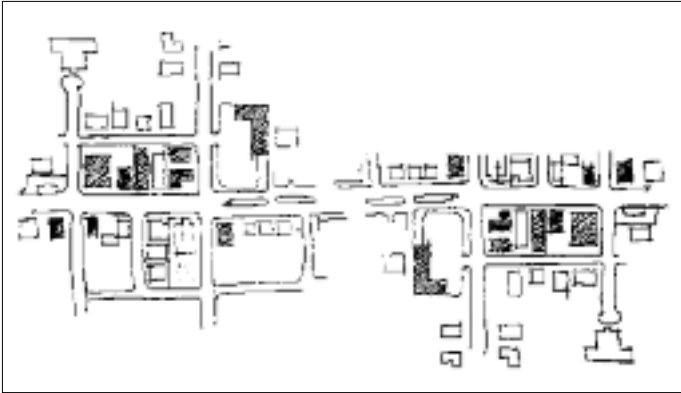
compatible character. A plan means greater likelihood that the community vision will be achieved. For the locality, this means less potential for conflict and lawsuits and greater confidence in planning for population growth and needed services.

THINGS YOU SHOULD KNOW:

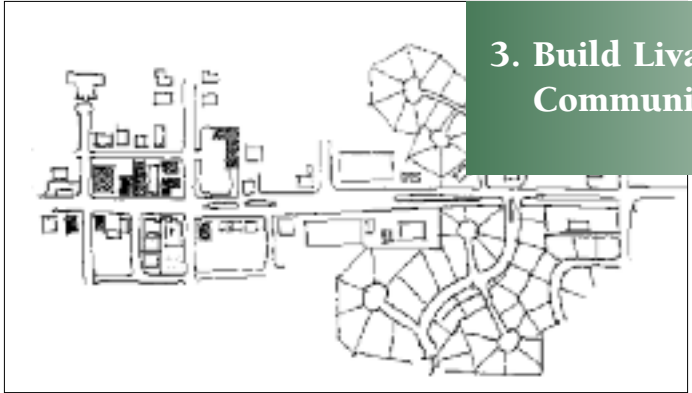
- Chesterfield County has growth plans for each of its villages. The Chester Village Plan has resulted in a traditional neighborhood development containing a public library, major drug store, two- and three-story commercial blocks, village green, senior housing, and both single-family and attached housing.



Chester Green in the village of Chester



Natural extension of connected streets



Disconnected “pod” growth

3. Build Livable Communities

- The Neighborhood Model section of Albemarle County’s Comprehensive Plan provides a format for bringing urban form and character to its designated development areas. Individual master plans following the model are completed for each community, enabling citizens to participate in the planning and giving developers guidance on what types of projects can be proposed where.
- Many projects have been built under the Crozet Master Plan and code.
- The comprehensive plan for Stephens City lays out a strong vision for extending the village. Stephens Landing adjoining the town core expands the road grid and sets aside about a third of the site (15 acres) for a trail connection and a playground.



New homes extending the traditional village in Leesburg

- The Town of New Market’s Growth and Annexation Area Concept Plan (2007) calls for extending the grid into a mixed-use New Town District while also maintaining a clear edge between the growth area and surrounding farms.



In Crozet, a new through road connects two new subdivisions and forms a crossroads with the original rural road. Sidewalk and building placement (right) anticipate the old road becoming more urban.



Delineate Gateways



Which gateway gives a better first impression? Which community looks like one in which you would rather spend time and money?

FIRST IMPRESSIONS are important to communities. Just as with meeting a person, a good first impression can make a difference. A bad first impression is hard to change. The gateway into a community can either express a community's pride and sense of place or it can give a community a poor image.

In many cases, a community can be made more memorable, more vivid, more alive if the boundary that exists in people's minds also exists physically on the ground. In rural areas, gateways provide an area of transition between city and countryside; in urban areas they help mark the boundaries between one community and another.

THINGS YOU SHOULD KNOW:

- Localities can help to protect scenic gateways by developing strong sign ordinances and designating entrance corridor overlay districts. Lexington, Staunton, and Winchester all have overlay districts which, to varying degrees, control signs and address setback, building design, parking location and design, and streetscape elements.
- One major gateway to the Shenandoah Valley is the Interstate-81 corridor.

- Unattractive views of giant signs, billboards, and franchises dominating interchange areas affect how people perceive our region.
- During the public hearings in 2006 on widening I-81, views along the interstate were some of the primary citizen concerns. That year, APVA Preservation Virginia included the I-81 Corridor in the Shenandoah Valley on its lists of "Most Endangered Historic Sites in Virginia" because it is so rich in both history and scenic beauty.



Design guidelines for Shenandoah County's *Old Valley Pike Corridor Plan* reinforce a rural landscape design character along some stretches and town design character in others, helping to maintain a distinction between town and countryside.

Make True Neighborhoods

3. Build Livable Communities



If you were in the market for a new house, what would be more important to you—the size of the lot or the character of the house and neighborhood?

BUILDING APPEALING COMMUNITIES means ensuring a convenient mix of the things that meet daily needs. Neighborhoods historically have offered a place to live for people of all ages and incomes and life stages.

Ideally, these residential settings also are attractive, walkable, and satisfying—places people enjoy. Well-designed communities are not just a collection of individual houses. Unlike conventional subdivisions, quality is not based solely on lot size and square footage. Equal attention is paid to creating an inviting “public realm” conducive to walking, casual socializing, and community function.

What makes a wonderful neighborhood?

- Quality of the public space
- Variety of uses and building types
- Connections—to people and to daily needs
- Places to walk

“Much of what we consider to be unique about small towns is actually embodied in the concept of mixed use zoning...simply allowing and encouraging a variety of activities to coexist in one district.”

Planning for Prosperity

Open space is vital to human well-being, yet most subdivisions do not provide any parks or open space. Children have no place to play and, for all ages, recreation requires first getting in the car. As areas develop more fully, access to open space becomes increasingly important. New developments have the opportunity to include wonderful outdoor places. On a small scale, play areas and greens can serve surrounding residences. Greenways can turn undevelopable stream corridors into peaceful areas that maintain natural habitat. These open spaces can be places of the heart and important community landmarks for the future. They also can help homes hold their value.

How does our development pattern serve children who are too young to drive, the elderly who are no longer able to drive, and those who cannot afford a car?

Compact developments with interconnected streets, a mixture of uses, and quality human-scaled urban design (the “new urbanism” described on p. 60) are cropping up all over the nation. More than 500 such new towns and neighborhoods have been built, including more than 100 projects in Virginia. These range from suburban mall redevelopments to large mixed-use centers, and from affordable housing to complete neighborhoods.

<i>Common Features of Traditional Neighborhood Developments</i>	<i>Standard Features of Conventional Development</i>
<ul style="list-style-type: none"> • Compact form that encourages walking • Streetscape designed for pedestrians • Buildings close to the sidewalk • Narrow streets • Parking on the street and in the rear • Connected streets in block pattern • Neighborhood parks and open spaces • Range of housing types and price ranges • Compatible non-residential uses 	<ul style="list-style-type: none"> • Isolated “pods” of look-alike, single-price-range houses • Separation from other uses • Not pedestrian friendly • Lack of parks or open space • Car-dominated “public realm” • Cul-de-sacs leading onto collector roads • Few options for those without cars

What encourages walking? Convenience, safety, a variety of destinations, and interest and comfort along the way.

THINGS YOU SHOULD KNOW:

- Kentlands, a traditional neighborhood development in suburban Maryland, is so refreshingly pedestrian-oriented that people from surrounding areas drive there to walk for pleasure.
- Traditional neighborhood developments often out-sell conventional developments.
- In fact, a university study found that home buyers are willing to pay \$30,000 to \$40,000 more for homes in Kentlands compared to similar homes in the area. A follow-up study found that the price premium (16% from 1997 to 2005) has sustained or increased over time.
- A National Association of Realtors study of home-buyers found that 57% are more likely to purchase a home near green space and 50% are willing to pay 10% more.
- Interviews with residents of traditional neighborhood developments have found an even greater sense of community than anticipated.

- In Minneapolis, every home is within six blocks of a well-kept park.
- Kellytown, a traditional neighborhood development infill project in Charlottesville provides 32 new houses and the right to add 10 additional accessory living units. Despite being on small, narrow lots, the traditional-style houses with access to a preserved forested stream valley sold like hotcakes, according to the developer—at up to twice the expected price.
- In Newtown, a 365-acre new urbanist development in Williamsburg, all of the dwellings are within walking distance of the offices, businesses, and services of the town center and enjoy quick access to



Kellytown in Charlottesville

3. Build Livable Communities

pocket parks, forested buffers, and trails. The complex includes apartments, townhouses, duplexes, condominiums, and single-family homes.

- Many Virginia localities have policies in their comprehensive plans that promote elements of new urbanism, among them Albemarle County, Loudoun County, Fauquier County, the City of Suffolk, the

City of Lynchburg, the City of Chesapeake, and the Town of Warrenton.

Look at the examples on the following pages. Compare these to the features of most modern developments. Which are more livable?

Mix Uses and Building Types



Housing in different price ranges (middle ones are affordable units), Wyndcrest, Md.



Commercial block across from apartments, Chester Green in Chesterfield County



Senior housing (background) near stores and services in Wyndhurst, Lynchburg



Medical center (left corner) and community center (middle) set amid townhouses, apartments, and single-family homes in Newtown, Williamsburg

Design for Healthy Communities

LOOK AROUND YOUR COMMUNITY. Is everyone in a car? Health experts recommend 60 minutes of exercise a day for children and 30 minutes for adults. How can people incorporate that into their daily lives? Studies show that even routine trips on foot can add up to the recommended amount.

Community environments that make it safe and easy to get exercise could enable millions of sedentary Americans to integrate physical activity into their lives seamlessly, according to a 2001 report published by the Commission on Local Government.

A sedentary lifestyle, according to a U.S. Surgeon's report, is a primary factor in 10 percent of all deaths in the United States. Center for Disease Control researchers say that direct and indirect costs associated with physical inactivity may total more than \$150 billion annually.

“People can control their own behavior up to a point, but decisions on more complicated issues that affect lifestyle behavior, such as those involving development practices, are best addressed through community-wide efforts.”

Local Government Commission report on
Development and Health



Typical apartment complex with no open space

The way we're building is not good for kids. The American Academy of Pediatrics links community design to overall children's health. It issued a policy statement in 2009 calling on governments at all levels to plan for and invest in walkable, livable communities that best advance the health, safety, and well-being of American families.

Only 10 percent of children walk or bicycle to school, compared with a majority of children a generation ago.

The influential bestseller *Last Child in the Woods* diagnosed a nation of kids with “nature-deficit disorder.” Outdoor play in a natural setting can help with Attention Deficit Hyperactivity Disorder. A 2004 study in the *American Journal of Public Health* found attention improved more in kids who took a 20-minute stroll in a park than in kids who walked where greenery was sparse. British researchers reported in 2010 that even brief activity in a green place has large benefits for mental health, especially in children.

Nor is it good for seniors. Nearly 50 percent of adults age 50 and older report they cannot cross main roads close to their home safely says the 2009 AARP report, “Planning Complete Streets for an Aging America.”



Townhouses on green in Newtown, Williamsburg

Provide Parks and Open Space

3. Build Livable Communities

Trails, parks, and connected destinations encourage people to be physically active.



Walking trail, Blacksburg



Pocket park, Stratton Building in Staunton



Community green, Waylands Grant, Crozet



Trail and ponds, Spring Lakes, Augusta County

Make It Possible to Walk to School



Which school is safe to walk to? Is part of the community? Kids can walk to Kentlands' elementary school (right).



Hide the Car

There are many creative ways to keep cars close while leaving the front neighborly.



Front yard garage in auto-centric development



Angled garage, Bell Creek in Staunton



Garage alley, Waylands Grant, Crozet



Traditional garage, Bell Creek



Garage tucked underneath, Crozet



Garage (left) with accessory apartment above, Kentlands. Md.

Use Good Design to Make Density Work

3. Build Livable Communities

DESIGN MATTERS as much, if not more, than density in how livable a neighborhood is. It is design that gives a place its character and it is density that provides the economies of scale that bring convenience, variety, and vitality.

Our perception of a place has more to do with how it is designed than with the number of units per acre. When shown images of higher-density versus lower-density development, people often change their perceptions and prefer higher density. Consider an area with one-story houses of monotonous architecture that fill nearly the entire lot and have little landscaping. Another area of the same density but with two-story houses, varied architecture, ample landscaping, and pleasant streetscapes would feel entirely different. “Bad density,” the kind people don’t like, merely adds more units without adding any amenities or conveniences. The problems associated with density are mostly problems of poor design.

By contrast, the elements that make density work reflect good design: convenient location, variety of architecture and building types, mixture of uses, a range of housing options, public space and streets designed for walkers, short interconnected blocks, integration with neighboring areas, landscaping and trees, access to nature and open space, and enclosed private space (however small). Even traffic can be eased by design, by using density to support transit, sidewalks, trails, and other ways to move around.

“Good density” is not uniformly high density but rather a changing variety of uses and building sizes at a human scale. The book *Visualizing Density* illustrates this in stunning fashion through aerial photographs of contrasting developments with the same density.



Upscale attached housing in Newtown, Williamsburg



Back yards in Waylands Grant, Crozet

FOR MORE INFORMATION:

Visualizing Density, 2007, Julie Campoli and Alex S. MacLean, Lincoln Institute of Land Policy.

Higher-Density Development: Myth and Fact, 2005, Urban Land Institute (www.uli.org).

Good Design Can Work for All Uses and Price Ranges



Waylands Grant, Crozet



Office compatible with residential setting,
Chesterfield County



Baldwin Place, Staunton



Habitat for Humanity project, Lynchburg



Office made from pre-manufactured units,
Bath County



Affordable housing project, Church Hill, Richmond

Compact Can Be More Affordable

3. Build Livable Communities

DENSITY AND AFFORDABILITY can go together—for residents and local governments. Here are some of the cost savings from compact, mixed-use development design:

For households:

- Fewer and shorter vehicle trips means less spent on gas and maintenance
- Potential to share cars or have fewer cars

For localities:

- Lower costs to provide services, from fire and rescue to school buses
- Lower per unit cost to build and operate infrastructure
- Less stormwater runoff per household
- Better options for transit

Virginia has excellent examples of new urbanist designs that offer affordable housing. The Norfolk Redevelopment and Housing Authority keeps a library of attractive and affordable house designs. Their project builders must be members of the Builders and Designers Guild, emphasizing quality design and craftsmanship as integral components of creating great



Mini duplex and mini car, just steps from stores, services, and entertainment in the heart of Newtown, Williamsburg

neighborhoods (for information, 757.623.1111; www.nrha.norfolk.va.us).

Affordability comes in part from having a wide range of housing options woven into a cohesive neighborhood. Accessory units, attached housing, and small lots can fit lifestyle choices (such as for the elderly or singles) as well as entry-level and more traditional affordable housing.

Fire and rescue service can be both faster and more economical in connected street networks than in sprawl. A study in Charlotte, NC, found that stations in the most connected areas served far more households per station and at a cost one-third less per household than new suburban stations.

Walkable gives a boost to local businesses. Dense, walkable neighborhoods provide local businesses with the foot traffic they need to thrive. It's easier for pedestrians to do their errands in combined trips if they don't need to drive between destinations. Type in your address at www.walkscore.com and see how many places you can support.



Corner building (brick) has apartments above commercial. It fits compatibly with fine old houses, yet provides convenient housing to a variety of residents, some of whom do not have cars. (Staunton)

Compact Can Be Sustainable

MORE AND MORE citizens and governments are concerned about the long-range supply of energy and other resources. The most recognized standard for “green building” is LEED (Leadership in Energy and Environmental Design), an international certification system for verifying that a project was built in ways that contribute to energy savings, water efficiency, carbon reductions, indoor environmental quality, and stewardship of resources. Materials and site design are the major components.

Neighborhoods also can be sustainable. A LEED-ND (Neighborhood Development) standard integrates the principles of smart growth, urbanism, and green building into the first national system for neighborhood design. This rating system, approved in 2009 by the U.S. Green Building Council, recognizes that factors like location and design are critical to improving energy sustainability.

Business Week named Arlington “the best place in the U.S. to weather a recession.” The city’s director of economic development credits Arlington’s decades-long conversion to high-quality, high-density development, such as urban villages with grocery stores and other essentials within walking distance.

Transportation benefits have proven even greater than expected for Atlantic Station, a massive new urbanist project in Midtown Atlanta. Residents drive only about 8 vehicle miles per day (metro average is 32) and workers also drive far less than the average, according to a study reported in the Urban Land Institute’s *Growing Cooler*.



Energy-efficient, high-quality siding, Bell Creek in Staunton



Library in downtown New Market, designed for energy efficiency and featuring reused materials, permeable pavement, and rain gardens



Atlantic Station, Atlanta, where residents and workers drive less

Strengthen Community Cores

3. Build Livable Communities



Do you want the heart and soul of your community to be a downtown or a shopping mall?

ALL TRUE COMMUNITIES, whether small town or big city, have downtowns that every citizen knows and comes to. These hubs often are the clearest expression of a community, the mental image people take with them.

What is the “picture” that occurs to you when you think of your community? Is it the mall? The downtown? Does your community have a heart?

A downtown serves many functions. Typically the most significant public buildings are located here, such as government offices, the courthouse, the library, and the post office. Stores, shops, offices, and apartments increase the reasons for frequenting the area. Each use reinforces the others.

Downtowns are human scale, meant for people of all ages and walks of life. People come here during the day for business and on evenings and weekends for restaurants, concerts, or parades. This is the place where you “run into” old acquaintances and feel part of a distinct community. Downtowns often include a walkable core created before the automobile era.

Public commitment encourages private investment. Local government facilities are often the backbone of the downtown, while a well-developed public realm

lets people gather informally. It is this complex intermingling of public and private, interior and exterior that cannot be replaced by shopping malls and isolated government offices.

Economic and social vitality in the downtown core has a positive impact on the entire community. Ongoing reinvestment in the core area raises property values and uses infrastructure efficiently. The stakes are high. The alternative is a hollow core. All of the communities in the Valley have distinctive traditional core areas. Increasingly these are being revitalized. There are many examples in the Valley of successful and vibrant downtowns.

Tools to Use:

- Use the Main Street Model
- Encourage Infill Development
- Provide Incentives for Downtown Housing
- Keep Government Offices Downtown
- Develop Fairs, Festivals, and Farmers Markets
- Create an Attractive Streetscape

Use the Main Street Model



Do your historic downtown buildings look like this (left)? Or like this (right)?
(before and after Community Bank, Buena Vista)

THE MAIN STREET MODEL is alive and well in Virginia and in the Valley. This highly successful strategy helps preserve not only the heritage of a community's downtown but also its economy. Dozens of cities and towns across the state have been accepted into the program since its inception in 1985. These Main Street communities receive technical support from the Commonwealth as they implement the Main Street program. The program uses a four-point approach:

- Design
- Organization
- Promotion
- Economic Restructuring

Design improves the downtown's image. The appearance of buildings—as well as elements like street lights, window displays, signs, sidewalks, and parking—all convey a visual message about what the downtown is and what it has to offer.

Organization means building cooperation among all of the players that have a stake in the economic viability of the downtown. Property owners, public officials,

bankers, civic groups, downtown residents, consumers, the local historical society, downtown workers, and other individuals and organizations all have reason to care about the downtown.

Promotion involves marketing the downtown's unique characteristics to shoppers, investors, tourists, and others. Special events, retail promotions, and other events can reinforce positive perceptions of the downtown.

Economic Restructuring builds on the existing economic base and diversifies it. Help for expanding businesses, recruitment efforts, conversion of unused properties into usable space, and merchant training are examples of initiatives to increase the competitiveness of the downtown.

Through the Main Street model, hundreds of small and medium-sized communities across the nation have revitalized their downtowns. The Valley has always been well represented in the Main Street program. Any community can apply the principles. In fact, using these time-tested strategies, particularly building a

broad-based commitment to the downtown, can only add to other initiatives.

THINGS YOU SHOULD KNOW:

- Local businesses, like those that fill most downtowns, are better for the local economy. USA Weekend reports that “of every \$100 spent in a chain store, \$14 goes back into the local economy. For a locally owned business, \$45 goes back.”
- Between 1985 and 2008, Virginia’s Main Street communities generated 4,600 new businesses, added 13,500 new jobs to downtown payrolls, and sparked over \$600 million in private investment.
- Winchester’s Main Street program has resulted in 411 new businesses downtown, 1,688 jobs, and

more than \$83 million in private investment between 1985 and 2008.

3. Build Livable Communities

- The Main Street Program provides services directed at individual community needs. Free facade designs for individual buildings are common.
- Staunton has used the program to develop a comprehensive streetscape plan.
- Lexington was chosen in the National Trust’s inaugural Dozen Distinctive Destinations in 2000. Staunton was selected in 2001.
- Harrisonburg was the first locality in Virginia to designate an arts and cultural district.



Vibrant downtown Buchanan, Botetourt County



Outdoor dining, Winchester



Prominent downtown building rehabilitated for the Waynesboro Heritage Museum

FOR MORE INFORMATION:

National Main Street Center, National Trust for Historic Preservation, in Washington, D.C., offers technical assistance and materials (202.588.6219; mainstreet@nthp.org).

Virginia Main Street Program, Virginia Department of Housing and Community Development, Richmond (804.371.7030; www.dhcd.virginia.gov/Mainstreet).

Encourage Infill Development

ENCOURAGING INFILL DEVELOPMENT can benefit both localities and citizens. The cities in the Shenandoah Valley are small to medium-sized and offer convenient access to shopping, services, and entertainment. Continuous infill and redevelopment of communities have been standard for centuries. In recent decades, however, most of the substantial population growth in the Valley has been occurring outside of city and town limits.

In fact, many of the Valley's cities are losing population density. This means that most cities have ample opportunities for using vacant sites, reusing abandoned sites, and building upon existing uses.

Advantages of Infill Development:

- Uses existing roads and utilities
- Convenient location
- Certainty of development pattern
- Amenities
- Cost savings for developer and residents

More and more communities are rediscovering the potentials of "downtown." Unlike single-use construction pushing into new territory, projects on underused or vacant sites in the core area can spark the imagina-

tion of others and lead to more and more improvements, all building on each other and on the prime location. Older, close-in shopping centers, for example, offer large and flexible sites that can be recycled.

Financial benefits can be great. Existing utilities and infrastructure can reduce costs. For buildings that are historic, considerable federal and state tax incentives may be offered for rehabilitation. Local enterprise zones and other programs also can provide incentives for investment. An often overlooked advantage of investing in an infill site is the certainty provided by a mature development pattern and known neighbors.

Creative and attractive infill projects can be found throughout the Valley.

THINGS YOU SHOULD KNOW:

- Winchester has been quite successful with its "cafeteria plan" of infill incentives. Developers can earn a density bonus from a range of choices, including restoring a historic structure, locating on the downtown mall, or providing a mixture of residential and commercial.
- Attractive parking garages have been vital to encouraging infill in Staunton and in Winchester, which just added its fourth public garage.



Staunton's New Street parking garage (left) supports infill projects like the adjacent Stonewall Jackson Hotel and Blackfriars Playhouse (above).

- The City of Staunton partnered in the redevelopment of the Stonewall Jackson Hotel and built the adjoining parking garage. The renowned Blackfriars Playhouse rounds out a block that has been transformed from “white elephant” to a core destination.



New Rockbridge County Courthouse, designed as an extension of downtown Lexington

Make an Inviting Streetscape

STREETSCAPE consists of street paving, sidewalks, streetlights, traffic lights, public signs, street “furniture” such as benches and trash cans, landscaping, and public art. In downtowns and neighborhood commercial areas, a pleasing streetscape can repay its cost in increased tourism and shopping revenue, increased citizen use of public spaces, enhanced civic pride, and new investment by the private sector.

The most effective streetscapes are a rich mosaic of individual elements that create interest and provide comfort for pedestrians and reflect the historic character of the area. The interplay between public and private efforts reinforces the vitality of the streetscape.



3. Build Livable Communities

New shops, businesses, and housing in downtown Geneva, Illinois



Winchester block with new office building, restored Knitting Mill, and new parking garage.

Communities should consider putting utilities underground or moving them to the rear of buildings. Lexington, Staunton, and Harrisonburg have placed the utilities underground in their downtown districts. These communities recognize that overhead poles and wires are a major distraction to the beauty of their historic commercial cores.

THINGS YOU SHOULD KNOW:

- Staunton’s “Big Dig” did more than upgrade water and sewer lines. Brick sidewalks with granite curbs and historically styled traffic and street lights were installed. Utilities, including electrical, gas, tele-



Staunton before and after the Big Dig: wires underground, brick sidewalks, and historic styled fixtures.

phone, cable, and fiber optics, were placed underground.

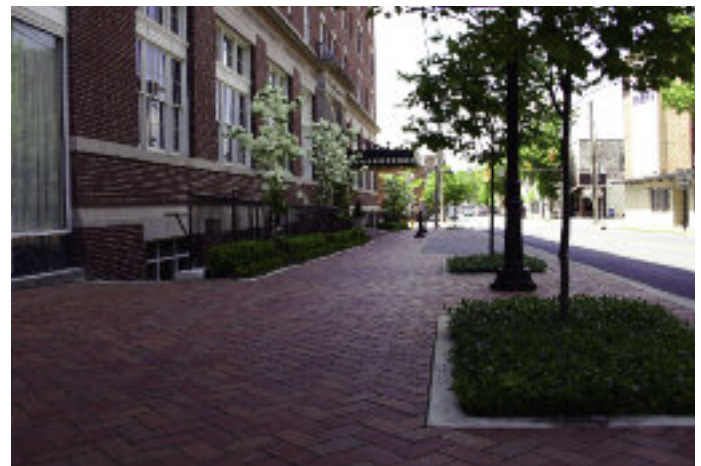
- Downtown Lexington has been used for movie sets because of the combination of historic buildings and lack of overhead wires.
- Along Boscawen Street in Winchester's Old Town, the city replaced antiquated sewer and water, put overhead lines underground, and provided more sidewalk area. Many adjoining property owners upgraded and undergrounded their utilities at the same time and the narrowing of the roadway made room for small outdoor dining areas that have been quite popular.



Boscawen Street, Winchester



Restored Court Square, Woodstock



Exterior of the restored George Washington Hotel, Winchester

Rework the Strip

3. Build Livable Communities



Which is better for the community? Abandoning older buildings every time a new store comes in? Or rejuvenating existing shopping centers like the one on the right (Willow Oak in Waynesboro)?

PROGRESS does not have to turn every major highway corridor into a relentless march of parking lots and bland strip shopping centers. Existing shopping centers can be rebuilt to be more attractive visually and more integrated into the community. New shopping centers can be built to a comfortable scale and can use designs that reinforce rather than obliterate local traditions. There are good examples of these concepts in the Valley and elsewhere.

Economic advantages of reusing existing shopping centers:

- Close-in, older shopping centers are ringed by residential and other development and have a handy market.
- Utilities are already in place.
- Reuse makes maximum use of the initial investment in land and buildings.
- Zoning and permits are already established.
- Such projects enjoy support from local officials and residents.

Strategies:

- Provide access to adjoining development
- Provide for walkers as well as cars
- Put parking mostly on the street and in the rear
- Use attractive signs and colors

- Add landscaping
- Encourage good building design
- Serve a unique local audience, rather than bring in a cookie-cutter look

THINGS YOU SHOULD KNOW:

- Many communities use design guidelines to control the look of development along major corridors (more on pp. 99-111).
- Lexington's Nelson Street corridor, formerly a typical strip development, was restyled into an attractive gateway to this historic city. In addition to public streetscape improvements, the city proactively



Lexington's Route 60 corridor

encouraged private site improvements. The city provided architectural design assistance and even paid for landscaping plants and smaller sign posts for willing property owners.

- Owners of Willow Oak Plaza in Waynesboro overhauled the 1960s-era shopping center with extensive landscaping, coordinated signs, and an attractive color scheme. The response: a significant increase in business.
- Montgomery County, Maryland, successfully spurred redevelopment in downtown Silver Spring by creating a “green tape zone” that created a project team and gave downtown projects priority in permit filing, regulatory reviews, and inspections.

- In Mashpee Commons, Massachusetts, an old strip shopping center was reoriented so that buildings face onto a new “Main Street.” A greater concentration of businesses was possible and the project has been highly successful.



Entrance corridor, Front Royal



Smaller, connected parking areas at Creekside in Winchester



Parking hidden, Chesterfield County



A Typical Barnes & Noble (left) is set in a sea of asphalt, but the store in Bethesda is built to the sidewalk.

3. Build Livable Communities



In typical shopping areas, stores are separated by parking lots and graded slopes. More compact designs (right) are integrated with their surroundings, making it easier to get to and move between businesses.



Edgewood Shopping District in Atlanta (also pictured at top right) fronts the main corridor with a pedestrian cross through to multiple stores (above right) and side street access to others. Parking is on streets, in accessory lots, and in underground and above-ground garages.



Newtown's commercial district (Williamsburg)



Two-story Kroger in Atlanta, sitting across from apartments and fronting (other side) on the main street

Encourage and Guide Retrofits

RETROFITS SMALL AND LARGE offer a great opportunity for both developers and the community. In fact most of the projects along commercial corridors will be reuses of previously developed properties.

This recycling of business sites is healthy for the community. Roads, infrastructure, business zoning, and nearby customers are already in place. Just as cities worldwide have evolved and rebuilt themselves over centuries, so can Valley entrepreneurs revamp old sites for the latest economic activity.

It is often more complicated, however, to work with an existing building and a constrained site. Localities may need to provide incentives and flexibility to make this process easier and at the same time develop appropriate standards to meet current needs. This can be especially true of parking and stormwater management. Staunton, for example, steers developers to the Center for Watershed Protection's Urban Stormwater Retrofit manual.

FOR MORE INFORMATION:

"Malls Into Mainstreets: An In-Depth Guide To Transforming Dead Malls Into Communities," report by the Congress for the New Urbanism in cooperation with the U.S. Environmental Protection Agency, 2005.

Retrofitting Suburbia: Urban Design Solutions for Redesigning Suburbs, Ellen Dunham Jones, John Wiley and Sons, 2009.

"Best Practices to Encourage Infill Development," a white paper prepared for National Association of Realtors by Robinson & Cole, 2002.



Blue Collar Joe's in Botetourt County transformed a vacant gas station into a popular doughnut and coffee shop. The close-in location proved a good move. The owners also cleaned up the stream bank and removed underground storage tanks, which has encouraged redevelopment of the adjoining site as well.

Encouraging and guiding retrofits enables a community to change incrementally in a desired direction. Another plus is that retrofits often are at a scale that suits local entrepreneurs and builders.

Urban Stormwater Retrofit Practices manual, Center for Watershed Protection, 2007, www.cwp.org (free download).

See Chapter 5 for related sections on franchises, landscaping, signs, and design standards.

Principle 4: PRESERVE HISTORIC RESOURCES

Know the Value of History



Do you think more tourists visit George Washington's home at Mt. Vernon, or his boyhood home in Stafford County?

THE HUMAN FORCES that have shaped the Shenandoah Valley for hundreds of years are evident today in the many historic buildings and sites that dot the Valley landscape. Prehistoric sites, historic farmhouses, Civil War battlefields, old mills, stone barns and unique agricultural structures, rural hamlets and villages, spring resorts, quaint downtowns and older neighborhoods, even older roads and bridges tell distinct stories about each area of the Valley.

The Shenandoah Valley was the site of two historical events that are of lasting interest to Americans all over

“Choosing to destroy—or to witness destruction—is easy. We need to make that decision only once. But choosing to preserve is much harder. We must choose to preserve over and over again, each day, each generation. One bad choice, or one lost opportunity, can cause irreparable devastation.”

John Hennessy, Civil War author

the continent. As the staging ground for westward emigration in the late 1700s and 1800s, the Valley is the place to which many Americans trace their ancestors. In the 1860s, the Valley bore the full brunt of the Civil War, the nation's most searing conflict. Our landscape offers tales not only of the fighting but also of the daily tribulations on the home front. Making personal connections to these two events brings many, many Americans to the Shenandoah Valley. What they also can find is other historical themes, from Native American times to rural Virginia traditions.

These historic sites are a tremendous asset to the region. They give us a sense of identity and stability. They contribute greatly to the vitality of the region and are an immense attraction to visitors from throughout the world. Current residents of this Valley have inherited these distinctive resources and can hand them intact to future generations.

Much of the Valley's heritage is rural. Scattered historic buildings and their landscape context make up much of what has always defined the Valley. However, most

of the new development in the Valley is occurring in unincorporated rural areas. This raises the challenge for communities individually and the Valley as a whole to recognize the value of rural historic sites, to identify the most important features and sites, and to develop ways to retain the historic integrity of these resources.

History Is Good Business

PRESERVING HISTORIC ASSETS makes economic sense. In fact, studies in Virginia and many other states confirm that preservation projects have a greater economic impact than other projects.

The rehabilitation of buildings creates jobs and local investments...

- Building rehabilitation outperforms new construction in creating economic activity. In Virginia, a 2008 VCU study found that \$1 million in building rehabilitation creates 11 jobs, 6 of them in sectors other than construction.
- The “reinvestment ratio,” or average number of dollars generated in a community for each dollar invested to operate a local Main Street program, is \$40.35 for every \$1 spent, according to a 2005 Brookings Institution report.

Historic sites draw visitors...

- Virginia’s more than 900 historic attractions generate millions of visitors annually.
- Visitors spend \$17.7 billion in Virginia every year. Historic and cultural sites are the number one attraction in the Commonwealth according to the Virginia Tourism Corporation.
- Historic preservation visitors stay longer, visit more places, and spend more money than do other visitors.
- The economic impact of Colonial Williamsburg alone is over half a billion dollars a year to Virginia’s economy while Alexandria estimates its visitor spending tops \$645 million.

“Dollar for dollar, historic preservation is one of the highest job-generating economic development options available.”

Advisory Council on Historic Preservation (independent federal agency that advises the President and Congress)

The added value of properties in historic districts strengthens the tax base of communities...

- Home prices in historic districts generally increase faster than the market as a whole as shown in numerous studies. A particularly detailed Texas study cited in a 2005 Brookings report found that local historic district designation increased property values by 5 to 20 percent.

FOR MORE INFORMATION:

Virginia Department of Historic Resources (DHR), 2801 Kensington Avenue, Richmond, VA 23221 (804.367.2323; www.dhr.virginia.gov). Publications on the DHR website:

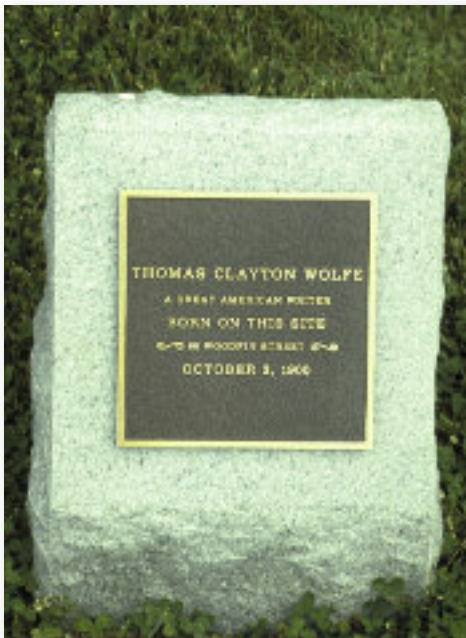
- *Financial Incentives and Opportunities for Historic Preservation and Archaeology in Virginia* (2008)
- *Prosperity through Preservation* (2008), Economic study conducted by Virginia Commonwealth University’s Center for Public Policy, in partnership with DHR.
- *Tourism Handbook: Putting Virginia’s History to Work* (2001). DHR’s desktop reference and comprehensive guide to heritage tourism development for local and regional partners.
- *Vision and Choice: Protecting Our Historic Resources* (1990). A handbook on DHR’s Preservation Easement Program

Economics and Historic Preservation: A Guide And Review of The Literature, 2005, Randall Mason, The Brookings Institution (www.brookings.edu).

The Economics of Historic Preservation, 2005, Donovan D. Rypkema, for National Trust for Historic Preservation, Washington, DC (www.preservationnation.org).

Identify and Designate Historic Sites

4. Preserve Historic Resources



Thomas Wolfe can't go home again; his birthplace is now a parking lot.

THE MANY HISTORIC BUILDINGS AND SITES in the Valley are a testament to the wise stewardship of current and previous owners. But as development takes place, these resources could be destroyed, often through lack of awareness of their value.

Historic preservation is a three-step process: identify, designate, and protect.

Identification – The foundation of historic preservation is awareness—identification of historic sites and what makes them historic. Architectural and archaeological surveys provide a good base of information. These have been completed for many localities in the Valley but most could be improved.

Designation – Designation gives official recognition to particularly important historic sites. Individual build-

“Preservation brings new jobs, new businesses, good wages, significant tourist traffic, and economic benefit.”

Virginia's Economy and
Historic Preservation

ings as well as districts can be nominated to the National Register of Historic Places and the Virginia Landmarks Register.

National Register listing informs local, state, and federal governments of the existence of important historic resources. The federal government must consider and try to protect a National Register property's historic value in the course of its actions, including construction projects. Listing also can qualify owners for federal and state tax credits. National Register listing is purely honorary. It does not regulate or restrict the actions of the owners or the locality in any way.

Many of Virginia's 230 National Register Historic Districts are in the Valley region. A good number are in cities—Staunton alone has five historic districts—but districts can be villages, agricultural complexes, or any related cluster of buildings. Many more places could qualify as historic districts, particularly in the small towns and rural areas.

Protection – While designation is important, it does not provide protection. To protect historic resources, there are two primary avenues.

First, for property owners who know they want to permanently protect a site's historic features, historic easements can be the answer. Historic easements can address any size property.

Second, for communities wanting to protect historic resources, a local historic district ordinance can be the means for ensuring that new development is compatible with historic buildings and sites. Typically these ordinances guard against unnecessary demolitions and insensitive alterations to the exterior of buildings. Safeguarding the integrity of historic places has been shown to have positive economic benefits such as maintaining property values and increasing tourism.

THINGS YOU SHOULD KNOW:

- In Virginia, more than 2,000 historic resources are listed on the National Register. Properties in historic districts bring this number to the tens of thousands.



DOWNTOWN LEXINGTON

Urban historic district: Downtown Lexington



Rural historic district: Greenway in Clarke County



Historic easement: Cobble Hill, Staunton



Individually listed on the National Register: Covington Depot

- There are 22 Rural Historic Districts across the state. Clarke County has one and excellent examples can be found in neighboring Albemarle, Rappahannock, Fauquier, and Loudoun counties.
- Frederick, Shenandoah, Warren, and Clarke counties have excellent architectural surveys. The quality of surveys in the rest of the region ranges from fair to good. Region-wide, archaeological surveys generally are minimal or poor.
- Certified Local Governments, those with a historic preservation ordinance as well as a review board and design guidelines, can apply for funding for a variety of preservation activities. Staunton and Winchester are CLGs.
- Fauquier County used cost-share funding from the Virginia Department of Historic Resources in two

4. Preserve Historic Resources

ways, first to survey its historic resources and then to nominate 19 districts to the National Register.

- Approximately 60 localities in Virginia have local historic district ordinances, including Buena Vista, Lexington, Staunton, Waynesboro, Winchester, and Front Royal.
- Historic easements protect more than 350 properties in Virginia. Historic easements protect sites in the

Valley ranging from downtown buildings to historic farmhouses to the Cedar Creek Battlefield.

- Sometimes development projects can trigger the discovery of archaeological resources. Taking the opportunity to document and learn from these finds can increase our understanding of local history.



Benefits of Local Preservation Ordinance: New house (closest house in left photo) fits in with its neighbors (Staunton). Without guidelines for setback and design, a new home may not blend well with existing ones, like the middle house in the photo at right.

FOR MORE INFORMATION:

Virginia Department of Historic Resources, 2801 Kensington Avenue, Richmond, VA 23221 (804. 367.2323; www.dhr.virginia.gov). Valley localities are served from regional offices in Stephens City (540.868.7030) and Roanoke (540.857.7585). DHR assists landowners with historic easements and oversees cost-share programs to help localities survey their historic resources and prepare National Register nominations.

Vision and Choice: Protecting Our Historic Resources (1990). A handbook on DHR's Preservation Easement Program

Preservation Virginia (804.648.1889; www.apva.org) formed from the merger of Preservation Alliance of Virginia and Association for the Preservation of Virginia Antiquities.

Find New Uses for Old Buildings



Pampered Palate, Staunton, before and after: Which do you think attracts more customers?

VIRGINIANS SHARE A HERITAGE that is among the oldest and richest in America. This heritage is as diverse as the colonial capital of Williamsburg, the historic market in Roanoke, Monument Avenue in Richmond, the homes of Presidents and patriots, battlefields from the Revolutionary and Civil Wars, and the historic villages and towns of the Shenandoah Valley.

Statewide, more than 2,000 buildings, districts, and sites are listed on the National Register of Historic Places. These historic buildings, neighborhoods and sites give Virginia its unique sense of place. Historic buildings are important because they physically con-

nect us to the past. They tell us who we are and where we came from.

Saving historic buildings is also important because it makes economic sense. Preservation brings new jobs and businesses. It attracts tourists and retirees and it enhances property values and quality of life.

For the property owner it can make economic sense too. Historic rehabilitation projects can qualify for tax credits at the federal, state, and sometimes even local levels. The Virginia Historic Rehabilitation Tax Credit can be applied to owner-occupied residences as well as income-producing property.

THINGS YOU SHOULD KNOW:

- Historic preservation is a big business in Virginia. Preservation brings new jobs, new and expanded businesses, good wages, significant tourist expenditures, and economic benefits to all Virginians.
- In the ten years after its inception in 1997, the state tax-credit program spurred the rehabilitation of more than 1,200 buildings. This private investment generated an economic impact of nearly \$1.6 billion, creating 10,700 jobs and providing \$444 million in wages and salaries.



DOWNTOWN LEXINGTON

Former bank, now a jewelry store, Lexington

“The man who feels no sentiment or veneration for the memory of his forefathers is himself unworthy of kindred regard and remembrance.”

Daniel Webster

- Property values of historic buildings and sites throughout Virginia almost always go up when buildings are designated for their historic value. Scarcity and certainty create value in real estate. Investors, home buyers, and business people are attracted to communities that care enough about their historic resources to protect them.
- The rehabilitation of historic buildings provides significant jobs, about half in the construction trades and half in other fields.



Old Dairy in Warm Springs, meticulously restored as a community center



Highland Center, reusing the school in Monterey

- Rehabilitation is generally cost competitive with new construction, but it is much more labor intensive. The net effect of this difference is that the local economic impact of construction expenditures on older buildings is greater than for new buildings.
- Historic rehabilitation has been responsible for restoring economic health to many well-known Virginia landmarks. Important local landmarks such as the knitting mill in Winchester, City Exchange in Harrisonburg, the train station in Covington, and grand hotels like the Stonewall Jackson in Staunton, the Mimslyn in Luray, and the George Washington in Winchester, as well as hundreds of other buildings have been put back to good use, providing economic boosts to communities throughout the Valley.

4. Preserve Historic Resources



Harrisonburg's City Exchange Building (Wetsels), converted to apartments and a restaurant



Real estate office, Daleville

- Historic preservation conserves resources. Demolishing one typical two-story commercial building on Main Street eliminates all of the environmental benefits of recycling over 1.3 million aluminum cans.



Premiere Theater in Newport News, formerly Yoder Dairy Barn

FOR MORE INFORMATION:

Virginia Department of Historic Resources has materials on financial incentives and standards for rehabilitation, including the 2008 report “Financial Incentives and Opportunities for Historic Preservation and Archaeology in Virginia” (804.367.2323; www.dhr.virginia.gov).

New Uses for Obsolete Buildings, Urban Land Institute, (202.624.7000; www.uli.org)

National Trust for Historic Preservation, Washington, DC (202.588.6000; www.preservationnation.org).

Preservation Virginia (804.648.1889; www.apva.org).

Barn Again!, a program at the National Trust for Historic Preservation, helps farmers find ways to maintain and use historic barns and agricultural buildings (202.588.6000; www.barnagain.org or www.preservationnation.org).

Preserve Battlefields and Historic Landscapes

4. Preserve Historic Resources



Doesn't it make sense to preserve Virginia's Civil War battlefields?

THE BATTLEFIELDS OF THE CIVIL WAR define the character of many Virginia communities. But the lands where armies clashed, where bravery and sacrifice turned farm fields into hallowed ground, are today threatened by development.

A Civil War battlefield—whether protected and open to visitors or preserved by a private owner as open space—can be a significant component of a community's well-being, yielding agricultural, economic, cultural, and environmental benefits.

The Shenandoah Valley was the site of six strategically important campaigns involving 15 major battles and 326 incidents of armed conflict documented in official records. A 1992 National Park Service study determined that the Valley's battlefields are a significant historic resource for the nation and found that the integrity of these sites is generally high, but that several significant battlefields have suffered severe degradation and most are threatened by future development. An update to the study was completed in 2009, resulting in similar findings.

In 1996, Congress established the Shenandoah Valley Battlefields National Historic District to create a partnership framework for the protection and interpreta-

“When one knows where to look, the Civil War history of the Shenandoah Valley is everywhere.”

Study of Civil War Sites in the Shenandoah Valley of Virginia, National Park Service, 1992

tion of Civil War sites in the Valley and authorized Federal funding for the preservation of ten battlefields in the region. The District is managed by the non-profit Shenandoah Valley Battlefields Foundation.

Battlefields Contribute to Economic Well-being:

- Many Valley communities are located near historic battlefields, which provide important economic benefits. A battlefield can be a basic industry that generates jobs in a community.
- Battlefields can generate income from tourist expenditures and sales tax revenue. A quarter of all Virginia visitors stop at Civil War sites. Civil War tourists are among the highest daily spenders of all visitors.
- Battlefields bring additional income into communities through the multiplier effect. Every dollar a visi-

tor spends is multiplied—spent again in the community—an average of two times.

- As historic open space, a battlefield also adds economic value to adjacent properties and enhances a community's quality of life by protecting its natural resources, environmental qualities, and visual amenities.
- A study conducted by the Civil War Preservation Trust in 2003 found that the New Market battlefield delivered \$266,000 in state and local tax revenue from \$1.7 million in tourist expenditures in the area and created 34 jobs in the surrounding community.

THINGS YOU SHOULD KNOW:

- In partnership with willing landowners, the Shenandoah Valley Battlefields Foundation has protected more than 2,000 acres at ten battlefields in the Valley. Almost all of this land remains in farming use, as it was during the Civil War, contributing to the local agricultural economy.
- In 2003 and 2005, the Battlefields Foundation teamed with local governments to conduct two landowner-directed battlefield preservation plans at four battlefields: Cross Keys and Port Republic in Rockingham County and Fisher's Hill and Tom's Brook in Shenandoah County. These plans were



Pritchard House at Kernstown, working farm and battlefield protected by a purchased conservation easement



Piedmont Battlefield, part of the Middle River agricultural district, Augusta County

adopted by the two localities and help guide land use decision-making.

- A new national park at Cedar Creek and Belle Grove in the northern Valley was created by Congress in 2002. Much of the 3,700-acre area is in private ownership. About a third of the land is held by non-profit preservation organizations including the National Trust for Historic Preservation, Belle Grove Inc., the Cedar Creek Battlefield Foundation, the Civil War Preservation Trust, and the Shenandoah Valley Battlefields Foundation. The National Park Service owns approximately 30 acres.

- Together, the Shenandoah Valley Battlefields Foundation and the Civil War Preservation Trust (CWPT)



Cedar Creek battlefield (with Signal Knob in the background), part of a national park that is primarily in private ownership

“[T]he public cannot expect agricultural land uses to continue to preserve open land that conveniently coincides with Civil War battlefields.”

Study of Civil War Sites in the Shenandoah Valley of Virginia, National Park Service, 1992

have protected almost 600 acres at Third Winchester in northeast Frederick County. A five-mile non-motorized trail runs through the CWPT property, allowing residents and visitors to explore the battlefield and Redbud Run.

- The Kernstown Battlefield Association, in partnership with the National Park Service, the Farm and Ranch Land Protection program, the Shenandoah Valley Battlefields Foundation, and Winchester and Frederick County, protected the 315-acre Pritchard-Grim Farm, which continues to be both a working farm and a battlefield park in the fast-growing area south of the city.
- A cluster of 18 conservation easements in the Overall area in Page and Warren counties preserves Civil War battlefield sites as well as significant scenic and environmental features. The effort was initiated by private landowners as well as Scenic 340, Inc. The Milford Battlefield is listed on the National Register. The booklet “The Civil War Battles at Overall, Vir-

ginia” is available from Scenic 340 Inc., P.O. Box 340, Bentonville, VA 22610; 540.622.0787.

4. Preserve Historic Resources

- Piedmont Battlefield in Augusta County is part of a large and productive agricultural district.
- Most of the McDowell battlefield in Highland County has been protected by a variety of organizations as well as private landowners who have placed easements on their land.
- Driving tours and brochures have been created for the Shenandoah Valley Battlefields National Historic District and many of its battlefields to help visitors more easily explore the Valley’s Civil War sites.
- Three of five planned Civil War orientation centers for the National Historic District have opened. Centers at Winchester, Harrisonburg, and McDowell help visitors understand the Valley’s Civil War history and find the sites where that history happened.
- The Cedar Creek battlefield has been placed on “Most Endangered” lists by historic preservation organizations such as the Civil War Preservation Trust, the National Trust for Historic Preservation, and Preservation Virginia due to the threat to the battlefield from the expansion of Interstate 81 and an adjacent limestone quarry.



Protected area near Overall from the west side of the Shenandoah River



SHENANDOAH VALLEY BATTLEFIELDS FOUNDATION

Fisher’s Hill in Shenandoah County, which has a locally adopted battlefield preservation plan

FOR MORE INFORMATION:

Shenandoah Valley Battlefields Foundation, 298 West Old Cross Road, New Market, VA 22844 (540.740.4545; www.ShenandoahAtWar.org).

Protecting Valley Battlefields Historic Lands: A Landowner's Guide, 2010, Valley Conservation Council and Shenandoah Valley Battlefields Foundation (www.valleyconservation.org).

Study of Civil War Sites in the Shenandoah Valley of Virginia, U.S. Department of Interior, National Park Service, September 1992.

Cross Keys and Port Republic Preservation Plan (2003), *Fisher's Hill and Tom's Brook Preservation Plan* (2005), Shenandoah Valley Battlefields Foundation (540.740.4545; www.ShenandoahAtWar.org/plansandpolicies).

The McDowell Battlefield Staunton-to-Parkersburg Pike Concept Plan (1996) and *McDowell Battlefield Landowners Guide* (1999), Valley Conservation Council (540.886.3541; www.valleyconservation.org).

Shenandoah Valley Battlefields National Historic District Management Plan (2000), Shenandoah Valley Battlefields Foundation (540.740.4545; www.ShenandoahAtWar.org).

American Battlefield Protection Program, National Park Service, Heritage Protection Services, 1849 C Street NW (NC330), Washington, DC 20240 (202.343.3449).

Dollar\$ and Sense of Battlefield Preservation: A Handbook for Community Leaders, 1994, Frances Kennedy and Doug Porter, The Conservation Fund (703.525.6300).

Protect Other Historic Features

MANY OTHER LANDSCAPE FEATURES survive that help convey the deep cultural history of the Valley region. These might include historic roads and other corridors as well as places linked by a theme or period. A number of resources, for example, date to frontier and pre-European times.

Some of these resources deserve recognition. Greater awareness often encourages preservation and leads to opportunities to support tourism and foster civic pride.

THINGS YOU SHOULD KNOW:

- When natural, scenic, and historic resources coincide there is an especially good opportunity for not just protecting them but also embracing them as recreational and tourism assets.

- Route 11, the primary north-south route through Western Virginia, has served variously as the "Great Warrior Path," the "Great Wagon Road," and the "Valley Pike."

- Botetourt County has built tourist awareness around the Wilderness Road. More than 43 million Americans can trace their heritage to families that traveled the Wilderness Road. The "Crossroads to Settlement" project links related sites and resources in the Roanoke Valley.

- The 'Journey Through Hallowed Ground' Byway stretching from Gettysburg, Pennsylvania, to Monticello encompasses centuries of historic sites in scenic settings and is recognized as a National Register of Historic Places Travel Itinerary.

See also pp. 16-18 on efforts to protect scenic assets.

Principle 5: RESPECT LOCAL CHARACTER IN NEW CONSTRUCTION

Set the Standard with Public Buildings



Which of these modern public buildings better expresses the dignity and importance of civic institutions?
(Lexington Fire House on the right)

PUBLIC BUILDINGS should set the standard in a community. Public buildings with civic stature, quality materials, and prominent settings project a sense of the importance of public institutions.

For centuries, public buildings in Virginia such as city halls, courthouses, post offices, and public schools were always the community's most beautiful and notable buildings. Since the 1950s, however, public buildings often have been relegated to little more than utilitarian boxes.

We sometimes have designed schools and libraries that resemble correctional facilities. We have built fire stations and post offices that look like warehouses, and we have moved many of our public buildings from downtown to new locations on the strip outside of town.

People appreciate public buildings that express dignity and permanence and that harmonize with their surroundings. There are a number of instances in the

“Our culture is looking for beauty; people are desperately searching for it. When we give our citizens a place of beauty, they always respond positively.”

Joseph Riley, Mayor of Charleston, South Carolina

Valley where communities have demanded higher quality in the design of new public buildings and resisted efforts to move civic institutions to out-of-the-way locations.

On the next page are examples of handsome public buildings in the Valley and elsewhere.

Public Buildings with Civic Stature



VDOT Residency, Rockbridge



Berryville-Clarke County Government Center, keeping both offices downtown



Rockingham County Administration Center, reusing and expanding centrally located shopping center



Mount Jackson Town Hall

Post Offices



Typical post office as utilitarian box, to be reached only by car



New post office in Lynchburg fitting into the downtown streetscape

Provide Design Standards

5. Respect Local Character



Left unchecked, corridors can turn into distracting and dysfunctional clutter. Design standards can guide new development as well as redevelopment (Route 60, Lexington at right).

EVERY COMMUNITY in the Valley has its own distinctive character. Most also have historic areas. To help protect that character, localities can create “corridor overlay districts” along routes leading to historic sites or areas. Here, tailor-made design guidelines can shape the look and function of development. These guidelines should respond to Comprehensive Plan goals and the nature of the corridor.

Many of the concepts in this chapter can be applied through entrance corridor overlay districts. Design guidelines can help encourage results that will meet the community’s current vision and needs.

Corridor overlay districts typically address landscaping, signs, site design, and building materials and design. To improve corridor function, elements like pedestrian access, connection with adjoining lots, and aligning of curb cuts might also be included. Guidelines also can respond to the unique characteristics of a district.

The impetus for establishing corridor overlay districts is often to guide new development. However, they are equally suited to guiding redevelopment. Incremental changes can make a huge difference over time, espe-

cially as redevelopment is likely to be an increasing proportion of future development activity.

It has been shown time and again that communities that set higher standards get better results. On the other hand, communities that set no standards will compete to the bottom.

Edward T. McMahon, Urban Land Institute

THINGS YOU SHOULD KNOW:

- An increasing number of localities in the region have entrance corridor overlay districts, including Rockbridge County, Warren County, Lexington, Staunton, Waynesboro, Winchester, and the Town of Front Royal.
- Lexington has greatly improved the look and function of its Route 60 area by working with property owners on building design and addressing everything from landscaping and signs to pedestrian improvements and reducing curb cuts.
- Rockbridge County and the City of Lexington coordinated on the development of their overlay dis-

Lexington's Route 60 plan aligned curb cuts at crossings and connected adjoining businesses, including the new CVS and Arby's (top center in the graphic and pictured below).



districts. The county's Tourism Corridor Overlay district covers all of Routes 11 and 39 in the county.

- Winchester developed its guidelines individually to reflect the different character of each corridor and to get input from the community. Staunton followed the same approach.



Connections between adjoining businesses improve traffic safety and flow in Lexington.

FOR MORE INFORMATION:

Urban Design and the Bottom Line: Optimizing the Return on Perception documents the economic pay-off of investing in greenways, parks, and natural areas, high-quality civic buildings, and retail and residential design (2008, Dennis Jerke, Urban Land Institute, www.uli.org).

"Design & Aesthetics" (reprint set), *Planning Commissioners Journal* (www.plannersweb.com).

Aesthetics, Community Character, and the Law, Planning Advisory Service Report 489/490, American Planning Association (www.planning.org).

Designing the City: A Guide for Advocates and Public Officials, 1995, Adele Fleet Bacow, Island Press.

Ask Franchises and Chain Stores to Fit In

5. Respect Local Character



Which franchise made an attempt to fit in with the local character? The Lexington Arby's (right) uses traditional materials and colors that match the area.

DO FAST-FOOD FRANCHISES in Virginia have to be in the same style building as those in New York, North Carolina, or Nevada? The answer is “of course not.”

National franchises and chain stores can and do change their standard building design to “fit in” with the local character of the surrounding community. But they only do this in communities savvy enough to insist on something better than “off-the-shelf, “cookie cutter” architecture.

Experience shows that if you accept standard cookie cutter design, that is what you’ll get. On the other hand, if your community insists on a customized, site-specific design, that is what you will get. The bottom line for most fast-food companies and other franchises is securing access to profitable trade areas. They evaluate locations based on their economic potential. If they are asked to address local historic or architectural concerns, they will usually do so.

Besides fast-food restaurants, gas stations and convenience stores are the two most prominent franchises in our auto-oriented society, and they contribute to the homogenization of Virginia communities. Massive “big box” retailers can be overwhelming to smaller commu-

nities, physically as well as economically. But as these corporations experience increasing opposition from citizens, there increasingly are examples of how these huge companies have adapted their designs or even their locations to meet local standards.

Today, communities all across America, including many in Virginia, are working successfully with franchises and chain stores to get buildings that fit in. Here are some examples:



7-Eleven, Georgetown

Fast-Food Restaurants That Fit In



Typical fast-food restaurant



Burger King, Key West, FL



McDonald's, Freeport, ME



Two-story McDonald's, Richmond



Burger King, Chesterfield County



Wendy's, Chesterfield County



McDonald's, New Hyde Park, NY

Gas Stations and Convenience Stores

5. Respect Local Character



Typical station with huge, brightly colored canopy



Amoco canopy and building in traditional materials, Crozet



DAVID KLEPPINGER

Texaco canopy within the roofline, Hanover County



Two-story canopy, Albemarle County



RANDALL ARENDT

Mobil with gas canopy in rear, W. Kingston, RI



New service station, Vermont



Liberty with traditional design and muted colors, Nelson County



Sheetz with landscaping and brick building, Staunton

“Big Box” Retailers



Typical Walmart, Amherst County



Walmart, Warren County



Kroger, Henrico County



Safeway, Loudoun County



Grocery store like a barn, Wisconsin



Walmart, Jackson, Wyoming



Walgreen's, Chesterfield County

Lessons Learned about Dealing with Franchise Development

5. Respect Local Character

- **Ask, and you may receive.** Rather than accept the standard franchise design, your community can insist on a customized, place-responsive building. Hundreds of local communities, including some in the Valley, have successfully worked with national chains and franchises to get buildings that respect local community identity. Your community can too.
- **Regulatory techniques vary.** These can include historic districts, design guidelines and review, conditional use permits, site plan review, corridor overlay zones, sign controls, and landscape ordinances.
- **Use incentives and public opinion, too.** Incentives might be relaxed parking standards, density bonuses, and tax credits. With or without legal tools, no community should forget the power of public opinion. Many successes have grown out of public calls for a site-specific design or for saving a cherished building.
- **Reconsider the location of the playground.** Fast-food chains sometimes insist on building a large playground in front of their building. If this is inappropriate for your site, stand firm. There are thousands of highly profitable fast-food restaurants without gaudy outdoor playgrounds.

- **Franchises often argue that drive-throughs are a necessity** even in pedestrian-oriented locations because they can account for over 50 percent of business. In fact, the total number of customers may be identical, but the point of sale will be different. Making drive-through conditional on design concessions is a very effective technique.
- **Scrutinize the signs.** When it comes to signage, businesses want a level playing field. They can compete for attention with 100-foot-tall signs or 10-foot-tall signs. Either way, the burgers taste the same.



Drive-throughs do not have to be front and center. New bank (right) fronts on the sidewalk, with ATM in the rear in Arlington.



Locally appropriate building design, Kroger Pharmacy, Henrico County

The keys to success:

- National corporations and their local franchises are more likely to agree to design modifications when
- Design objectives are clearly stated. The developer and architects should know in advance what criteria will be applied to the proposed project.
 - The local government offers pre-application meetings. Misunderstandings can be avoided if the national company is given a chance to meet informally with staff and commission members prior to submitting a formal application.

- Visual design guidelines are available that graphically depict what constitutes a compatible design.
- Local groups know when to compromise. Companies care a lot more about some things than others. For example, they might be more adamant about having a drive-through than they are about architectural styles or sign heights.



Taco Bell, Fort Collins, CO

THINGS YOU SHOULD KNOW:

- Design review is one means of ensuring the compatibility of franchise design with local community character.
- More than 3,000 cities, towns, and counties nationwide exercise some type of design review, including

FOR MORE INFORMATION

Meeting the Big-Box Challenge: Planning, Design, and Regulatory Strategies, 2006, Jennifer Evans-Cowley, PAS Report 537, American Planning Association (312.786.6344; www.planning.org).

Better Models for Commercial Development: Ideas for Improving the Design and Siting of Chain Stores and Franchises, 2004, Edward T. McMahon, The Conservation Fund (703.525.6300; www.conservationfund.org).

more than 60 localities in Virginia and at least 7 in the Valley region.

- Even without a design review ordinance, a community can develop voluntary design guidelines and offer public education and incentives.
- Most fast-food restaurants in Europe are in restored historic buildings.
- The Taco Bell in Fort Collins, Colorado, has won two awards and is among the top-grossing restaurants in their system.
- Many communities, including Fauquier County and Warrenton, have placed limits on the size of retail stores.
- Sometimes the size cap is on the amount of land covered by the building, in effect allowing more square footage in additional stories.
- “Big boxes” have located in downtowns and in existing buildings. They can go in two-story downtown buildings and in vacated former big boxes. In fact, Target has built or acquired at least 35 multi-level stores across the country.

Better Models for Superstores: Alternatives to Big-Box Sprawl, 1997, Constance E. Beaumont, Preservation Information Series, National Trust for Historic Preservation (202.588.6000).

Saving Face: How Corporate Franchise Design Can Respect Community Identity, Ronald Lee Fleming, PAS Report 452, American Planning Association Planners Book Service (312.786.6344; www.planning.org).

Landscape Commercial Areas

5. Respect Local Character



Would you prefer to shop at a shopping center with no trees or landscaping?
Or at one well-landscaped with trees and bushes?

THERE IS NO DOUBT that trees add economic value to residential areas, but what about commercial or institutional property? Here, too, trees and landscaping make dollars and sense. All over the country, in survey after survey, people say they prefer commercial areas with trees and landscaping.

The Urban Land Institute conducted a study to determine the impact of trees and landscaping on the value of retail, office, and residential developments. This study found that landscaping and preservation of mature trees “positively affect value for the developers, the users, and the community in many ways.” Specifically, the study found that trees and landscaping have these effects:

- Translate into increased financial returns of 5 to 15% for project developers
- Give developers a competitive edge and increase the rate of project absorption
- Help developers win support for proposed projects, especially in contentious situations
- Establish an image, identity, and sense of community for development projects
- Influence decisions to buy or rent in both residential and commercial projects
- Contribute substantially to the market’s perception of security, privacy, and sense of place

- Reduce the need for publicly funded improvements on site and off site
- Contribute to employee productivity, morale, and job satisfaction
- By example, cause other developers to adopt a higher standard of design

THINGS YOU SHOULD KNOW:

- In a survey of real estate appraisers, 95% of respondents felt that landscaping added to the dollar value of real estate.
- Many Valley communities have landscaping ordinances including Staunton, Winchester, Waynesboro, and the counties of Botetourt, Frederick, Rockbridge, and Warren. Summaries are in the *State of the Valley* (2003) report by the Valley Conservation Council.
- Botetourt has tree canopy requirements and in parking lots requires both shade trees in the interior and a buffer around the perimeter.
- Trees can reduce urban runoff by 17%.
- Up to 25% of commercial development costs can be

spent on engineered stormwater controls such as detention ponds, concrete culverts, and silt fencing.

- Air conditioning and utility bills can be reduced in well-landscaped commercial areas.



Landscaping along the road screens this Winchester parking lot from view.



Large trees provide shade within the parking lot.



Large shade trees enhance the site of a Lowes and Walmart Supercenter in Staunton.



Creekside Station, Winchester

FOR MORE INFORMATION:

Aesthetics of Parking: An Illustrated Guide, 1988, Thomas P. Smith, PAS Report 41 I, American Planning Association (312.786.6344; www.planning.org).

Preparing a Landscaping Ordinance, 1990, Wendelyn A. Martz with Marya Morris, PAS Report 43 I, American Planning Association Planners Book Service (312.786.6344; www.planning.org).

Shading Our Cities: A Resource Guide for Urban and Community Forests, 1989, American Forestry Association, Island Press (202.955.4500).

Value by Design: Landscaping, Site Planning and Amenities, 1994, Urban Land Institute, Washington, DC (202.624.7000; www.uli.org).

Control Signs

5. Respect Local Character



Which street is more attractive? Which signs are easier to read?
Which street would you prefer to see in your community?

SIGN CONTROL is one of the most important and powerful actions a community can take to make an immediate visible improvement in its physical environment. This is because almost nothing will destroy the distinctive character of a community or region faster than uncontrolled signs and billboards. This doesn't mean we don't need signs. We do. Signs provide us with direction and needed information. As a planned, architectural feature a business sign can be colorful, decorative, even distinguished.

So why do Valley communities need to control signs? The answer is obvious: too often signs are oversized, poorly planned, badly located, and altogether too numerous. What's more, sign clutter is ugly, costly, and



Sign clutter is ugly, ineffective, and expensive.

ineffective. And it degrades one of the Valley's greatest economic assets—its scenic landscape.

A good sign code is pro-business since an attractive business district will attract more customers than an ugly one. Moreover, when signs are controlled, businesses will do a better job of selling at less cost because when clutter is reduced, consumers actually have an easier time finding what they are looking for.

Sign control is especially important to the health of the Valley's tourist-oriented economy. This is because the more the Shenandoah Valley comes to look like every place else in America, the less reason there is to visit. On the other hand, the more Valley communities do to enhance their unique assets—whether scenic, natural, or architectural—the more people will want to visit.

THINGS YOU SHOULD KNOW:

- A good sign communicates its message clearly and quickly, is compatible with its surroundings, and enhances the visual image of the community.
- A good sign ordinance is clear and unambiguous, easy to understand, and easy to administer and enforce.

- Digital signs are changing the face (and pace) of signs, and have significant safety and aesthetic issues.
- In the Valley region, Botetourt, Rockbridge, Shenandoah, and Warren counties prohibit new billboards, as do Lexington, Staunton, Waynesboro, and Winchester.
- There are no pole signs or billboards on the Capital Beltway around Washington.
- Virginia's top tourist destinations—Williamsburg, Alexandria, and Virginia Beach—all have strong on-premise sign ordinances.

FOR MORE INFORMATION:

Street Graphics and the Law, 2004, APA Planning Advisory Service Report 527, American Planning Association, is a comprehensive basic resource including CD-ROM with sample ordinance (www.planning.org).

Regulating Electronic and Moving-Image Signs, 2009, PAS Essential Info Packet, includes "Zoning Practice" and other articles, American Planning Association (www.planning.org).

"Design and Aesthetics" reprint set contains more than a dozen articles by lawyers and planning experts, *Planning Commissioners Journal*, (www.plannersweb.com).



Pole signs can dominate even a mountain view.



Digital signs present distinct challenges since they are more distracting for drivers.

Signs do not have to be big to be effective.



A sign at a human scale and height can be more clear and attractive, like this KFC bucket in Lexington.



A predictable sign location helps drivers.

A good sign is compatible with its surroundings.

5. Respect Local Character



Standard signs are a mismatch in historic settings

Scenic America provides case studies and sample ordinances on signs and billboards, telecommunications towers, and wind energy (202.638.0550; www.scenic.org).

Aesthetics, Community Character, and the Law, 2000, Christopher Duersken, PAS Report 489/490, American Planning Association (312.786.6344; www.planning.org).

Sign Regulations for Small and Midsize Communities, 1989, Eric Damien Kelly and Gary Raso, PAS Report 419, American Planning Association Planners Book Service (312.786.6344; www.planning.org).

Scenic Virginia (804.643.VIEW; www.scenicvirginia.org).



Hanging sign, perfect for downtown
Waynesboro

Disguise Communications Towers



Co-located on transmission tower



Co-location on water tower,
Rockingham County



Communications tower disguised
as a tree, New Jersey

THE COMMUNICATIONS REVOLUTION means that wireless towers will continue to proliferate. In most parts of the country, ugly communication towers now loom above every hillside and more are coming. Fortunately, there are a number of ways to address aesthetics and other issues.

Most communities have attempted to regulate communications towers by limiting them to certain zoning districts, requiring a special use permit, and setting standards. These standards can address issues such as aesthetics (color, height, landscaping), bonding, and removal once the tower is no longer needed. Often a preference is stated for co-locating antennae.

Trends like increased residential use and expanded demand for data and video have brought changes in the type of permit applications. Many applications are for infill and for residential areas. At the same time, new materials and designs continue to emerge.

Ordinances based on decade-old construction and siting techniques are likely in need of review. Rigid standards for the last wave of towers often resulted in look-alike towers across a community.

A 2009 Federal Communications Commission ruling sets a time limit on how long a locality can take to decide on a tower application. A failure to act in time entitles the telecommunications company to file a court action. These factors mean localities must address a wider and ever-changing range of situations and tower designs in a tight time frame.

Localities might consider making sure community objectives (such as full coverage) and values (such as scenic quality) are clearly articulated. This can provide a basis for addressing new siting and design issues as they arise. In addition, savvy communities are taking the opportunity to coordinate telecommunications planning so that public wireless needs also can be accommodated.

THINGS YOU SHOULD KNOW:

- More than 250,000 towers have been sited across the nation. Rapid advances in technology and increases in demand for services will drive up the need for additional coverage and different types of facilities.
- The first wave of towers tends to seek out high ridge lines and mountaintops for maximum coverage. In these locations, towers can be hundreds of feet tall.
- Sites on ridge lines and mountaintops offer maximum “coverage” but also are the most visually conspicuous.
- As service grows, however, and the density of calls increases, the need is for shorter, more closely placed towers.
- The 1996 Federal Telecommunications Act prevents municipalities from banning cellular phone towers outright but does allow them to regulate tower construction through local laws in order to minimize visual and other impacts.
- Wireless communications technology changes quickly, making it difficult for local governments to be adequately prepared for tower siting and construction issues.
- Federal appeals courts have ruled that aesthetics may constitute a valid basis for rejecting a tower application where there is substantial evidence of visual impact. A Virginia appeals court ruling upheld Montgomery County’s decision to deny a tall tower in an agricultural conservation area, citing the clarity of its comprehensive plan and its stated approach preferring lower, less obtrusive towers.
- Allowing towers by special temporary use permit also is an option. The temporary special use permit can require periodic renewal and specify removal once the tower is no longer used.

Viewshed Approaches

5. Respect Local Character

ALBEMARLE COUNTY decided that it would rather have more structures that are less visible than fewer structures that are highly visible. It designated “avoidance” areas where scenic, historic, or other qualities make towers less likely to be approved and “opportunity” areas where towers are encouraged. A common solution has been placing antennae on multiple poles that extend no higher than 10 feet above the tree line. Providers must build more towers, but they are more easily approved. Towers that meet site and design standards can be placed in any zoning district.



Cluster of towers below the ridgeline is visible only if you know exactly where to look, Albemarle County



Slim, unobtrusive monopole, Rockbridge County

Rockbridge County also addresses viewshed issues. It prefers slim micropole designs less than 120 feet tall with no external antennae. The county discourages external antennae and towers over 150 feet tall (which would require night lighting).

■ Local governments also can require towers to meet aesthetic standards through the special permit or the site plan approval process. The most standard technique is to require that towers be “disguised” as flagpoles, silos, or even trees. Or they can be required to be co-located or placed on existing structures such as water towers, electricity transmission towers, tall buildings, even inside church steeples.



**Co-location on office building,
Albemarle County**

FOR MORE INFORMATION:

“Managing Wireless Infrastructure Deployment,” 2009, *Practicing Planner*, American Planning Association (www.planning.org).

American Planning Association’s Planning Advisory Service packet on cellular communication towers, including the guidebook *Implementing the New Telecommunications Law* (312.786.6344, www.planning.org).

“Local Government Officials eGuide to Communications Facilities Siting,” National Association of Telecommunications Officers and Advisors (NATOA), Alexandria, VA (703.519.8035; www.natoa.org).

“Taming Wireless Telecommunications Towers,” Scenic America, Washington, DC (202.638.0550; www.scenic.org).

“Wireless Tower Siting: The Local Government Perspective,” 2003, The Baller Herbst Law Group.

“Personal Wireless Service Facilities Policy,” Albemarle County, provides illustrated explanation of concepts and guidelines (434-296-5832; www.albemarle.org).

Minimize Light Pollution

5. Respect Local Character



Which parking lot has higher utility bills? Which one do the neighbors prefer?

HOW MANY CHILDREN these days look up in wonder at the stars? Most of today's children have never seen the Milky Way. Once a fixture of the summer and fall night sky, the Milky Way has been lost from view due to light pollution. Indeed, most of us have lost our connection with the night sky.

An unanticipated impact of the spread of development has been the change in the night sky. In all but the most remote places, the glow of artificial lights has rendered the heavens a blur. Along the East Coast now, there are few pockets of true darkness at night.

This night glow is not harmless. In fact, the American Medical Association in 2009 voted unanimously to support efforts to control light pollution. Why? Because glare from bad lighting is a public health hazard, particularly for older drivers, and because many species, including humans, need darkness. Waking and sleep rhythms, migration cycles, and other biological expressions rely on the oscillation between light and darkness. Our engineering experiment to light up the night affects animals like bats and birds, but also, we're finding, ourselves.

Light pollution occurs when artificial light shines upward and outward instead of just downward where it is needed. Adverse effects can include sky glow,

“Of all the pollutions we face, light pollution is perhaps the most easily remedied.”

National Geographic, November 2008

glare, light trespass, light clutter, decreased visibility at night, and energy waste.

Bright is not always best. Lower and more evenly distributed levels of illumination are safer for security and for driving. The glare from intense lights makes it difficult to see and can create areas of shadow that actually are detrimental to security.

Good lighting is efficient lighting, so it also costs less. Worksheets are available showing what it costs to operate different lamps at different levels. Lower wattage bulbs can be used in full cut-off fixtures for more energy savings and less light pollution. Economics alone can be convincing to developers.

“The general belief that more light means better safety and security is just a myth. All that is needed is the right amount, in the right place, at the right time. More light just means wasted light and energy.”

International Dark-Sky Association



JOHN GOSS

Typical gas canopy at night



INTERNATIONAL DARK SKY ASSOCIATION

Dark-sky-friendly gas canopy



Light shielded downward



Shielded lights on historic buildings in Staunton

In addition to installing full cut-off light fixtures, another solution to reduce light pollution is to shield existing light fixtures, directing light downward and preventing light from spilling to the sides or upward. More and more companies are producing dark-sky compatible fixtures.

“Dark-sky models” are available for every type of lighting, even historic style lamps and residential security lights. The International Dark-Sky Association (IDA) showcases manufacturers and products that have earned the IDA “fixture seal of approval.”

An increasing number of communities have outdoor lighting ordinances. The most effective elements to include are lighting zones, a light curfew, maximum permitted light levels, and required shielding of fixtures.

THINGS YOU SHOULD KNOW:

- Excess lighting wastes energy. Approximately 30% of the energy produced by unshielded bulbs is used to illuminate the sky.
- Public lighting is part of the problem. Roadway lighting has been estimated to account for approximately 30 percent of sky glow and light trespass (IESNA).
- A study reported in 2008 in the journal *Chronobiology International* found a direct correlation between higher rates of breast cancer in women and the nighttime brightness of their neighborhoods. Researchers have long known that light depresses the production of melatonin, which helps fight tumors.

- Another study, in *Nature*, indicates that absence of a period of full darkness may affect vision development in children.
- More and more localities are committing to reducing light pollution. Botetourt, Warren, and Augusta counties are among the localities that have outdoor lighting ordinances. Staunton also includes detailed dark-sky based lighting provisions in its entrance corridor overlay district guidelines.
- Powhatan County's ordinance is clearly written and includes illustrations.
- IDA's worksheet "Operating Data and Economics of Different Lamps" shows the costs of different lighting levels and products.
- The Illuminating Engineering Society of North America has developed standards for lighting levels, including variations based on the use of the site.

FOR MORE INFORMATION:

International Dark-Sky Association (IDA) has a full range of materials including model lighting ordinances, lighting guidelines, code handbook, fact sheets, and product information (520.293.3198; www.darksky.org).

"Report on Outdoor Lighting Standards and the Problem of Light Pollution," 2005, by the Roanoke Valley Alleghany Regional Commission gives a useful compilation of concepts and approaches (www.rvarc.org).

"Addressing Obtrusive Light (Urban Sky Glow and Light Trespass) in Conjunction with Roadway Lighting," Illuminating Engineering Society of North America (IESNA) technical memo (www.iesna.org).

"Good Neighbor Guide for Residential Lighting," IDA (www.darksky.org).

Virginia Outdoor Lighting Taskforce (VOLT), a statewide citizens organization, promotes better outdoor lighting by educating the public about effective lighting practices (www.volt.org).

"Our Vanishing Night," *National Geographic*, November 2008.

Principle 6: REDUCE THE IMPACT OF THE CAR

Design for People, Not Just Cars



JOHN MIRABELLA

Shouldn't transportation projects enhance neighborhoods and quality of life in the communities they serve? Whereas concrete barriers (left) mark so many new bridges, Lexington made sure its rebuilt bridge (right) has a bike lane and the same attractive, open railings as before.

EACH YEAR VIRGINIA COMMUNITIES approve local road plans reflecting very real needs. However, the designs that typically result are not always what people want. Road projects “built to the standards” often damage scenery, livability, and community character. They are designed to move traffic faster, but at the expense of everything else.

While ugly, overscaled highway projects are familiar to us all, fortunately transportation agencies are now shifting away from rigid design and single focus on motor vehicles. There has long been a need to reassess road standards and to make designs that give us more transportation choices and more livable communities.

“Our most valued places are often sites which lack our most valued possession: cars.”

David Sucher, *City Comforts*

Virginia has made important policy changes in recent years that lead in this direction. These are some of the current trends in new transportation design approaches and standards:

Flexibility in Design. Federal transportation legislation gives states the flexibility to use their own design standards in sensitive locations. Federal law also makes it clear that highway projects should be designed with social, environmental, and cultural resources in mind. The Virginia Department of Transportation (VDOT) gives field staff more leeway for flexibility than in the past. Localities can ask for designs that accommodate what is important to the community.

Context Sensitive Solutions (CSS). This collaborative approach aims to “think beyond the pavement” to ensure that transportation facilities are designed to fit their setting. By involving stakeholders and by focusing on the local context, the CSS process can help preserve cultural and environmental assets.

6. Reduce the Impact of the Car

Complete Streets. Designing streets for people of all ages and ability means that everyone—whether in a car, on a bicycle, on foot, or using transit—can use that street. In March 2010, the U.S. Secretary of Transportation issued a policy statement calling for full inclusion of pedestrians and bicyclists in transportation projects. This may lead to more widespread adoption of complete streets policies.

Biking and Walking. Title 23 of the U.S. Code calls for the integration of bicycling and walking into the transportation mainstream. In 2004, Virginia adopted a similar policy. Transportation planning now considers elements like sidewalks along new streets and retrofits during maintenance projects.

Connectivity. Well-connected street networks mean shorter trips, more travel choices, and more cost-effective services. VDOT's new residential street standards that took effect July 2009 require that streets intended to be accepted and maintained as part of the state system must be built to connect with surrounding sites in a manner that enhances the capacity of the overall transportation network and accommodates pedestrians. Communities can adopt their own connectivity ordinances. Some require a minimum ratio of street intersections or set a maximum length for blocks.

Better Planning. Required "527 Reviews" bring VDOT into the discussion of proposed projects and provide some consistency in evaluating potential impact.

Flexible Parking Standards. Parking needs are real, but demand is elastic. Areas with large expanses of roadway and parking discourage walking and transit, generating further need for parking at every site. But when there is less dependence on the car, such as in compact, mixed-use development, there is less need for parking. Pedestrian access, shared parking, and transit can reduce the number of spaces needed. Parking standards should match the setting. Many communities now set maximum parking allowances rather than minimum requirements.

THINGS YOU SHOULD KNOW:

- Federal highway standards can be applied flexibly, as shown in the Federal Highway Administration book *Flexibility in Highway Design*.
- Projects in specific corridors can be designed to protect elements such as scenic character and historic integrity.

Make Walking Easy



Apartments and ample shopping and services are nearby, but getting there is dangerous for this young mother and her child (left).

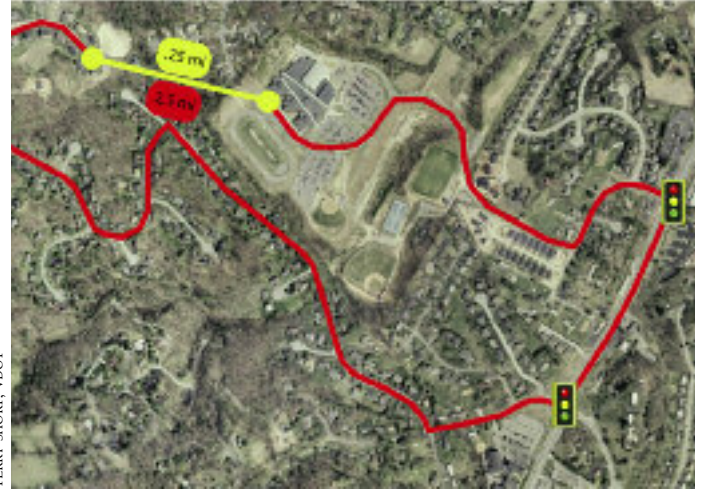


New road in Winchester (right) builds in pedestrian and biking options.

Why Can't Johnny Walk to School?



Cul-de-sac subdivisions that form a maze of unconnected streets force trips to be made by car.



This example from a Virginia locality shows how a child living a quarter mile from school (yellow) cannot walk there, but instead must be driven 2.5 miles (red).

- Warren County has requested that VDOT use a Context Sensitive Solutions approach to road projects in the county.
- Despite the fact that many communities set a minimum street width based on emergency vehicles, when it comes to fire and rescue access, road connections might matter more than road width. A study in Charlotte, NC, showed that highly connected networks have a faster response time and more efficient service per capita than modern subdivisions.
- The Virginia Department of Transportation can be a partner in reworking roadways to meet community development (and redevelopment) goals as well as traffic function.
- When a historic bridge in downtown Covington needed to be repaired or replaced, VDOT and the city worked with Virginia Tech to design a new, lighter surface that cost much less and kept the bridge in service.
- The plan for Richmond Road from downtown Staunton east into Augusta County sets design

guidelines to help rework old strip centers and guide new development. See the study at www.cspdc.org.

- VDOT's Rural Rustic Roads program allows low traffic rural roads to be resurfaced or receive other minor improvement without having to be widened to new standards.



Saved by innovation: Knowing the historic Hawthorne Street bridge was important to Covington, VDOT and Virginia Tech developed a lightweight deck that could keep it in service.



The Rural Rustic Roads program allowed this road in Augusta County to receive repairs without widening.

- A shared parking arrangement in Indianapolis, IN, for a 700,000-square-foot-plus project brought the

parking requirement down from 6,000 parking spaces to 2,815. Developing in a pedestrian friendly way significantly lowered costs and greatly helped the success of the project.

6. Reduce the Impact of the Car

- The Route 50 Corridor Coalition in the Virginia Piedmont developed a nationally recognized “traffic calming” plan as an alternative to the road widening originally proposed by VDOT for a 20-mile stretch of historic Route 50 (www.route50.org).
- An interstate cloverleaf in Charlotte, NC, is being retrofitted to be smaller and offer a fitting entrance to the downtown. The excess space gained back will be marketed for redevelopment.

FOR MORE INFORMATION:

Virginia Department of Transportation (www.virginiadot.org).

Secondary Street Acceptance Requirements (2009 connectivity standards), VDOT (www.virginiadot.org).

Context Sensitive Solutions web site maintained by the Federal Highway Administration and the American Association of State Highway and Transportation Officials (www.contextsensitivesolutions.org).

Complete Streets.org (www.completestreets.org).

Parking Spaces / Community Places: Finding the Balance Through Smart Growth Solutions, January 2006, Environmental Protection Agency, EPA 231-K-06-001 (www.epa.gov/smartgrowth).

The Roadscape Guide: Tools to Preserve Scenic Road Corridors, 2006, Vermont Forum on Sprawl (802.864.6310; www.smartgrowthvermont.org).

Flexibility in Highway Design, 1997, Federal Highway Administration, FHWA-PD-97-062 (www.fhwa.dot.gov).

“Complete the Streets” for Healthy Neighborhoods



Which street is better for the environment? Safer for children? More affordable to construct?

OVERLY WIDE NEIGHBORHOOD STREETS encourage speeding, generate runoff and non-point-source pollution, and increase the cost of new houses along the street. “Complete streets,” on the other hand, provide for healthy neighborhoods and livable communities.

Traditional neighborhood streets, which were the norm before World War II, are designed for use by people, not just motor vehicles. Such streets are designed for low speed (15–20 m.p.h.) and typically provide sidewalks, on-street parking, shade trees, and other community amenities.

These design elements combine to create an environment that encourages walking, bicycling, and a sense of community. Traditional streets are narrower than conventional streets, and they are well connected to distribute motor vehicle traffic and to provide a variety of places to walk. Traditional streets have blocks no longer than 300 to 450 feet, and intersections have turning radii that require low speeds, yet allow access by emergency and service vehicles. Traditional streets are safer for children because traffic volume and speed are reduced. Traditional streets are also better for the environment because less pavement means less runoff, less soil erosion, and less pollution. Traditional streets also are less expensive to construct and provide devel-

opers and realtors with a marketing advantage over subdivisions with conventional streets.

THINGS YOU SHOULD KNOW:

- Conventional street design aims only at moving more traffic more quickly. However, accommodating cars and trucks is only one of a street’s functions.
- Traditional streets are really like outdoor rooms; cars are slowed and pedestrian comfort is increased by adding street trees, on-street parking, and sidewalks and by placing buildings closer to the street.
- Since there are so few destinations or amenities within conventional subdivisions, residents must typically make 10 to 12 car trips per household per day. Children must be driven or take the bus to school and parents must spend the weekend chauffeuring their children everywhere.
- Conventional street design encourages motorists to speed through neighborhoods at 35 or even 45 m.p.h.. Typically, the wider the street, the faster the cars go.
- When pedestrians are hit by cars going 40 to 45 m.p.h., they die 83 percent of the time. On the

6. Reduce the Impact of the Car

other hand, if a pedestrian is hit by a car going 20 m.p.h., the fatality rate falls to 3-5 percent.

- By 2025 one in four drivers in the U.S. will be age 65 and older. The American Association of Retired Persons (AARP) calls for more attention to road design issues for the elderly. An AARP study found that nearly half of those surveyed could not cross main roads near their homes safely.
- Since only a small percentage of new development is designed to replicate older traditional patterns, a major demand for walkable neighborhoods goes unfulfilled.
- How does your neighborhood rank? Type in your address at www.walkscore.com and see what your walk score is.
- Cars take up much more space than pedestrians. Rubbing elbows at crowded events like downtown festivals or sporting events can be social and fun while the traffic jam getting to them is not.
- A parked car needs 100 square feet. Experts estimate there are 6 to 7 parking spaces for every car registered in the U.S.
- A number of Valley localities have transit service.

FOR MORE INFORMATION:

Creating Walkable Communities: A Guide for Local Governments, Bicycle Federation of America (www.bikewalk.org).

National Complete Streets Coalition (www.completestreets.org).

Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, An ITE Recommended Practice, 2010, Institute of Transportation Engineers (www.ite.org).

Walkable and Livable Communities Institute (www.walklive.org).

Transition to “Complete Streets”



URBAN ADVANTAGE



URBAN ADVANTAGE

Concerted improvements can transform a conventional road section into a more “complete street.” This photo-simulation shows Hydraulic Road near Charlottesville as it exists today (top) and with potential bike and pedestrian and streetscape changes to match increased density (above).

Planning Commissioners Journal, “Forward Motion” series (www.plannersweb.org).

Street Design Guidelines for Healthy Neighborhoods, 1999, Dan Burden, Center for Livable Communities (www.contextsensitivesolutions.org).

Residential Streets, 3rd edition, 2001, Walter Kulash, American Society of Civil Engineers, National Association of Homebuilders, Institute of Transportation Engineers, and Urban Land Institute (www.uli.org).

Provide for Walking, Biking, and Transit



CITY OF HARRISONBURG

Bike trail route steers bikers safely over tracks in Harrisonburg.



Safe, convenient sidewalk on the bridge enables pedestrians and bikers to cross the Fox River in Geneva, Illinois.



CITY OF HARRISONBURG

CITY OF HARRISONBURG

Signs and transit shelter, Harrisonburg



Bike rack on front of a Staunton trolley links two modes of transportation.



CITY OF HARRISONBURG

Bike racks in Harrisonburg's Court Square

Build Trails and Greenways

6. Reduce the Impact of the Car



Would you rather live in a community where you have to drive everywhere for everything, or in a community where you can walk, ride a bicycle, or drive to where you want to go?

WALKING FOR PLEASURE is the single most popular form of outdoor recreation in America today. Yet, in many Virginia communities, there are few places to walk, except on neighborhood streets. As a result, the popularity of bicycle and pedestrian facilities has risen tremendously in recent years.

The Virginia Outdoors Survey found that 48% of Virginians ranked the provision of additional hiking and walking trails as the state's most important outdoor recreation resource need. An additional 42% think bicycle trails are the state's top recreation resource need.



The Hawksbill Trail in Luray is one of the town's most popular amenities.

Many Virginia communities are finding that walking trails, bike paths, and greenways are popular, safe, and cost-effective ways to provide more opportunities for hiking, walking, bicycling, jogging, roller-blading, and other popular outdoor activities. Some of the many great examples are shown here.

THINGS YOU SHOULD KNOW:

- Walking and bicycling improve personal health and fitness.
- Bicycling for transportation removes cars from the roads and eases traffic congestion.
- Bicycling means there are fewer cars emitting pollution, which improves air quality. It also saves money since less is spent on car maintenance and gasoline.
- Walking and bicycling create a sense of community by promoting social interaction with neighbors, coworkers, and other local citizens.
- Many studies demonstrate that walking trails and bicycle paths increase nearby property values, which in turn can increase local tax revenues.



The handicapped-accessible STAR Trail in Fishersville serves residents of the Woodrow Wilson Rehabilitation Center as well as nearby schools and offices.

- A National Association of Realtors study of homebuyers found that 1 to 2% golf, 5 to 6% swim, and more than 50% use walking paths.
- Spending by local residents on trail-related activities helps support recreation-oriented businesses and employment, like bicycle shops and sporting goods stores.
- Greenways often provide new business opportunities and locations for commercial activities such as bed and breakfasts, recreation equipment rentals and sales, and other related businesses.
- Evidence shows that the quality of life of a community is an increasingly important factor in corporate relocation decisions. Trails and greenways are often cited as important contributors to quality of life.

EXAMPLES CLOSE TO HOME:

- Harrisonburg was one of only three localities in the state in 2009 to earn a perfect score on the Virginia Active Transportation Index (VATI) that measures biking and walking resources. The index looks for elements such as both biking and pedestrian plans and committees, paved bike trails, and striped bike lanes.



The bike/ped lane on the new Capital Beltway bridge connecting Virginia and Maryland draws bikers, walkers, and skaters across the Potomac.



Lexington's Woods Creek Trail traverses the community and connects to the Maury River trail at Jordan's Point.



The immensely popular Blackwater Creek Trail in Lynchburg extends more than 8 miles and is part of an extensive hiking trail system.



Arlington has pieced together a continuous network of biking routes to serve recreation and commuting, with the emphasis on connecting trails and providing safe and functional routes within traffic corridors.

- The Town of Luray's Hawksbill Greenway is so popular because it's attractive, offers nature up close, and connects downtown and other key sites.
- The STAR (Supporting Therapeutic Access to Recreation) Trail at the Woodrow Wilson Rehabilitation Center in Augusta County has handicapped accessible fishing pier, bathrooms, and parking lot and is within rolling, biking, or walking distance of the rehab center and four schools.

FOR MORE INFORMATION:

Virginia Outdoors Plan, updated regularly by the Virginia Department of Conservation and Recreation, describes trends in outdoor recreation and the specific needs, issues, resources, and plans for the various regions in the state (804.786.2123; www.dcr.virginia.gov).

Rails to Trails Conservancy, Washington, DC (202.331.9696; www.railstotrails.org).

Central Shenandoah Planning District Commission's (CSPDC) regional bicycle and pedestrian planning program has produced the Central Shenandoah Valley Greenways Plan, the Central Shenandoah Valley Bicycle Plan, and

- Winchester has completed part of its Green Circle, a planned seven-mile trail system connecting downtown, Shenandoah University, parks, the regional mall, and other parts of the city.

6. Reduce the Impact of the Car

- The City of Lexington and partners have done much to enhance and protect Woods Creek. Developers and adjacent landowners are advised on ways to improve stream health. City fourth-graders take a stream walk the length of the city.
- Blacksburg adopted a Bikeway/Walkway Master Plan as part of its comprehensive plan. Pedestrian access to adjoining parcels is required, and if a bicycle path is shown on a map, the developer can be required to develop that portion of the trail.
- The Sherando Area Bicycle and Pedestrian Facility links high-density residential and commercial areas in Frederick County with a regional park and a high school.

the Bike the Valley website (540.885.5174; www.cspdc.org and www.bikethevalley.org).

Walking and Wheeling the Northern Shenandoah Valley – The Plan for Improving Local-Regional Pedestrian and Bicycle Access and Linkages for Recreation and Civil War Heritage Tourism, Northern Shenandoah Valley Regional Commission (540.636.8800).

A Resident's Guide for Creating Safe and Walkable Communities, 2008, U.S. Department of Transportation, Federal Highway Administration, FHWA-SA-07-016 (www.fhwa.dot.gov).

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About the Valley Conservation Council

The Valley Conservation Council (VCC), a private nonprofit organization and land trust, promotes land use that sustains the farms, forests, open spaces, and cultural heritage of the Shenandoah Valley region of Virginia. Founded in 1990 and serving an 11-county region, VCC supports voluntary land conservation as well as sound public policy for managing development and growth. VCC has helped landowners conserve thousands of acres of farm and forest land, while its “better models” program encourages developing in ways that add to quality of life and bring environmental as well as economic benefits.

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